



Green Jobs and Young People in Africa: South Africa Report



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Source of cover image: <https://africasustainabilitymatters.com/south-africa-mpumalanga-coal-mines-blattantly-flout-environment-laws/>

We would like to express our sincere gratitude to all those who contributed to the successful completion of this research.

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Finally, we are especially grateful to the young respondents from Mpumalanga who generously shared their time, perspectives, and lived experiences. Their voices are at the heart of this research, serving as a powerful reminder of the importance of inclusive and participatory knowledge creation.

This research was produced in the context of the Green Jobs and Young People project in partnership with the Mastercard Foundation. The Green Jobs and Young People Project was a two year-initiative that ran between 2023 and 2025 to research the availability, attitudes, understandings, and possibilities for green job creation with and for young people in Africa. The views expressed do not necessarily represent those of the Foundation, its staff, or its Board of Directors.

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Acronyms

DHET	Department of Higher Education and Training
EDD	Economic Development Department
ERRP	Economic Reconstruction and Recovery Plan
ILO	International Labour Organisation
JET	Just Energy Transition
NDP	National Development Plan
NFSD	National Framework for Sustainable Development
NPC	National Planning Commission
OFO	Organising Framework for Occupations
PCC	Presidential Climate Commission
REIPPPP	Renewable Energy Independent Power Producer Procurement Programme
SASCO	South African Standard Classification of Occupations
SIC	Standard Industrial Classification
StatsSA	Statistics South Africa
UCT	University of Cape Town
UIF	Unemployment Insurance Fund

Executive Summary

South Africa stands at a crossroads. As the country navigates its transition away from coal dependency toward a climate-resilient future through the Just Energy Transition (JET) framework, the implications for youth employment—particularly in Mpumalanga province—are profound and urgent. With over 200,000 jobs potentially at risk and young people disproportionately represented in the coal value chain, this transition could either deepen existing inequalities or create pathways to inclusive economic growth.

This research employed a rigorous two-stage mixed-methods approach to understand how South Africa's green transition can meaningfully include young people. The study combined quantitative occupational analysis with extensive qualitative fieldwork across eight communities in Mpumalanga, capturing the voices, experiences, and aspirations of Black African youth.

This research is an investigation of the aspirations and barriers experienced by South African youth from disadvantaged backgrounds, especially women, in respect of green jobs. Specifically, it explores how opportunities in green job industries and other careers may contribute to fulfilling livelihoods and, at the same time, have a positive impact on protecting the environment and ultimately climate change.

In addition, the research aimed to profile existing green job occupations that align with the skillsets of youth in Mpumalanga, identifying potential entry points into the green economy. It also sought to understand how factors such as gender, education, and location influence youth access to and participation in green employment opportunities. Additionally, the research sought to gather youth-driven perspectives on what constitutes meaningful work and what makes green careers aspirational. These insights were used to inform targeted, evidence-based recommendations for policy and practice, ensuring a more inclusive and equitable transition to a green economy.

Findings

Skills and opportunities gap

The quantitative analysis revealed a critical mismatch between current youth skill sets and green job requirements. While the youth in Mpumalanga are concentrated in low-skilled, production-based occupations, most green jobs demand higher technical qualifications. However, the research identified several accessible entry points, including insulation installers, solar technicians, and waste and water plant operators, which offer realistic upskilling opportunities.

Limited awareness but strong motivation

Despite limited familiarity with green jobs as a concept, the youth demonstrated remarkable adaptability and eagerness to learn. Many of the youth associated environmental work with farming, recycling, and conservation, showing some understanding which was shaped by lived experience rather than formal education. Once informed about opportunities, the youth expressed a willingness to engage in green sectors.

Gendered barriers and aspirations

Young women faced distinct challenges, valuing flexibility and entrepreneurship but often feeling excluded from technical green roles due to educational gaps and social norms. While men dominated construction and energy sectors, women were present in service-oriented roles, highlighting the need for targeted interventions to ensure equitable access.

Climate reality driving change

Health impacts from pollution and extreme weather were deeply felt across youth communities, creating an environmental awareness that could be channelled toward green employment. Critically, youth did not reject the green transition; they feared being left behind by it.

Systemic barriers

Beyond skills gaps, youth faced structural challenges including limited access to funding, lack of mentorship networks, and stigma around certain types of green work, particularly waste management roles perceived as dirty or low status.

Recommendations

The research points to five priority areas for policy interventions:

- **Launch youth green jobs awareness campaigns:** Partner with career expos and media to run youth-friendly campaigns, spotlighting green job opportunities and success stories, especially in Mpumalanga, to close knowledge gaps and inspire participation.
- **Establish dedicated green entrepreneurship funds:** Government and agencies should create accessible funding and mentorship for township and rural youth green start-ups, with simplified applications.
- **Expand green apprenticeships and skills training:** Collaborate with industry and education bodies to offer green skills programmes such as solar, water, and waste management and prioritising youth from coal-affected regions, especially women and out-of-school youth.
- **Integrate green skills into education:** Revise school curricula to include green job literacy and provide clear pathways to green employment, with emphasis on short courses and hybrid learning.
- **Promote inclusive access and mentorship:** Support regular green opportunity dialogues, structured mentorship, and job-shadowing ensuring participation for marginalised youth by providing social supports like childcare and travel subsidies. Launch a national youth-green mentor directory to connect young people with professional mentors.

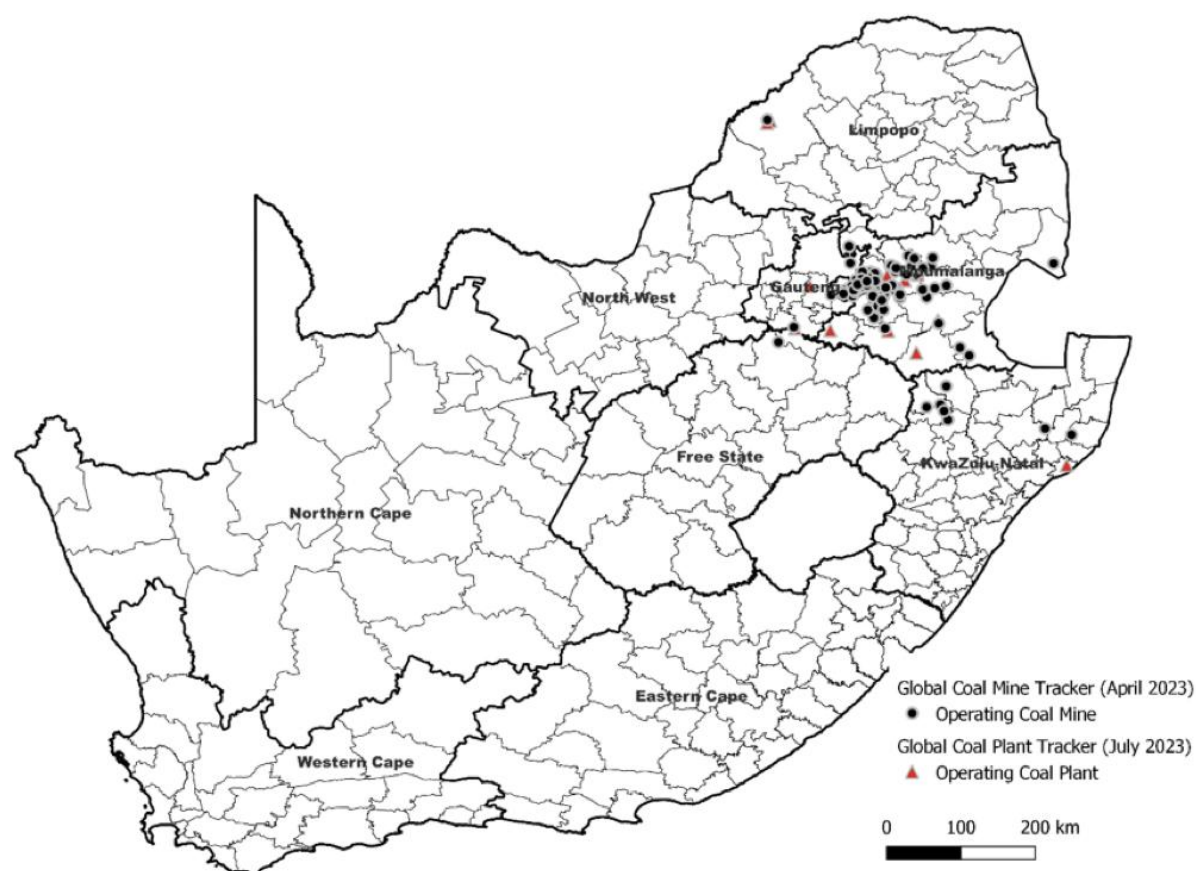
1. Introduction and country context

Through the Presidential Climate Commission (PCC), South Africa has committed to reducing carbon dioxide (CO₂) emissions to achieve net-zero by 2050, thereby mitigating the adverse effects of climate change (PCC 2022a). One major challenge identified in achieving these emission targets was South Africa's reliance on coal-based power (PCC 2022b) – approximately 72 percent of South Africa's energy requirements are served by coal power (Eskom 2021), while 41 percent of South Africa's CO₂ emissions stem from the coal sector (World Bank 2023). It is evident that any attempts to achieve net-zero emissions in South Africa will need to address the issues of coal-based power, potentially shrinking this sector in the South African economy.

Although a move away from coal-based power would be beneficial for the environment, there are also economic effects to consider. For example, employment in South Africa's coal sector in 2019 was estimated at between 76,000 and 108,000 individuals, with an additional 107,000 individuals employed in the broader coal value chain, with a relative over-representation of youth within coal industry employment (Bhorat et al. 2024). As a result, the transition away from coal power may put over 200,000 jobs at risk – a particularly undesirable outcome for a country struggling with high unemployment and inequality, especially among young people.

This report examines the critical intersection of youth employment and the emerging green economy in South Africa, with a particular focus on the Mpumalanga province. The location choice for this study is important as most of South Africa's coal mines and coal-based power plants are in Mpumalanga. Figure 1 highlights the extent of this concentration. At least 65 of the country's 78 coal mines and 93 percent of coal workers nationally are based in this province (Bhorat et al. 2024). Four key municipalities dominate, eMalahleni (26 percent of all coal workers), Steve Tshwete (17 percent), Msukaligwa (14 percent) and Govan Mbeki (11 percent).

Figure 1: Geographic location of coal mines and coal-based power plants in Mpumalanga



Source: Bhorat et al. 2024

The labour market effects of the green transition

The agenda to ensure a just transition¹ away from coal mining and coal-based power in South Africa has focused primarily on the economic impacts that will be felt in South Africa's Mpumalanga province, which sits at the heart of the country's coal power industry. Table 1 presents key labour market statistics for Mpumalanga and the rest of South Africa, for both youth and non-youth, highlighting that youth in Mpumalanga face more precarious employment conditions than those in the rest of the country. Youth in Mpumalanga face higher unemployment rates (47.4 percent narrow and 58.4 percent broad) compared to the rest of South Africa (44.2 percent narrow and 52.4 percent broad). Thus, when plans to enact a green transition are put forward, it will be essential to understand how these proposals will affect youth, particularly those in Mpumalanga.

¹ For the purposes of the study, the team uses the International Labour Organisation's definition of 'just transition' which is greening the economy in a way that is as fair and inclusive as possible to everyone concerned, creating decent work opportunities and leaving no one behind

Table 1: Labour market indicators for youth and non-youth, Mpumalanga and South Africa

	Youth		Non-youth	
	Mpumalanga	Rest of South Africa	Mpumalanga	Rest of South Africa
Population ('000s)	1 669	19 117	1 460	18 567
Labour force participation rate (narrow) (%)	50.4	50.6	71.0	69.2
Employed ('000s)	431	5 361	757	9 952
Employment-to-population ratio (%)	25.8	28.0	51.8	53.6
Narrow unemployed ('000s)	411	4 303	280	2 905
Narrow unemployment rate (%)	47.4	44.2	27.0	22.7
Broad unemployed ('000s)	604	5 908	423	4 131
Broad unemployment rate (%)	58.4	52.4	35.8	29.3

Sources: Statistics South Africa (2023a; 2023b; 2023c; 2024a)

Notes: 1. Youth are defined as those individuals aged 15-34 years, while non-youth are those aged 35 to 64.

Research aiming to model the employment effects of the green transition on the South African labour market suggest that while the transition is likely to lead to a net increase in jobs for South Africa as a whole, Mpumalanga is expected to experience a net decrease in jobs due to its primary reliance on the coal industry (Nel, Marais and Mqotyana 2023). This national level finding is consistent with the results of Montt et al. (2018), who found that most economies undergoing a decarbonisation process are likely to experience net job growth during the transition period. However, the uneven spatial distribution of coal-related economic activity, as well as of the potential for green industries, places the challenge of achieving a just transition in sharp focus.

To further investigate the impact of employment losses in the Mpumalanga province during South Africa's green transition, Bhorat et al. (2024) measured the level of coal dependency in Mpumalanga. Using numerous data sources to ensure the accuracy of their data, they estimated that there were approximately 46,100 coal households (defined as households with at least one coal worker) in Mpumalanga. For 60 percent of these households, a coal worker is the sole employed individual. With an average coal household size of 3.6 (Bhorat et al. 2024), this suggests that transitioning away from the coal industry could have far-reaching impacts for many individuals. Indeed, the World Bank (2017) estimated that one additional job in either the coal or agricultural sector in South Africa could lift 1.3 people out of poverty. Bulmer et al. (2021) reported that the average wage of coal workers exceeded that of workers in many other sectors of the economy. Therefore, during the green transition, households in Mpumalanga are likely to experience significant income and welfare shocks, even if alternative employment for coal workers is found quickly.

Youth employment and green jobs in South Africa

Multiple past and ongoing national and local initiatives in South Africa have promoted the creation of jobs for youth to support environmental improvement programmes, and/or encourage the development of the green economy more generally. These environmental improvement programmes include actions, policies, and interventions that involve the protection, restoration, and sustainable management of ecosystems and farming/agricultural lands, and are also linked to 'green' or 'sustainable' value-added

industries and enterprise development. Together, these actions and interventions can be grouped under the umbrella term nature-based solutions. The importance attached to the environment in promoting economic growth is highlighted in the South African Constitution – one of the key founding documents of democratic South Africa. Section 24 (b) (iii), states that everyone has a right to “secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development” (*Republic of South Africa 1996, 9*).

This clause in the Constitution serves as the basis for several policies and strategies in relation to South Africa’s commitment to growing the green economy. The Department of Environmental Affairs and Tourism launched the National Framework for Sustainable Development (NFSD) in 2008. The purpose of this document was to provide a foundation for the various tiers of government – local, provincial and national – to incorporate “sustainable development goals relating to the economy, society and the environment, and how governance systems will be capacitated to facilitate this process” (Department of Environmental Affairs and Tourism, 2008, 7).

Included in the substantive principles of the NFSD are the “efficient and sustainable use of natural resources” (Department of Environmental Affairs and Tourism, 2008,7). One policy intervention emanating from the NFSD is the Green Economy Accord, developed by the Economic Development Department (EDD), which aimed to create 300,000 new jobs in or supporting the green economy by 2020 (EDD 2011). Although the policy goals of the Green Economy Accord included broader aims, such as electrification of poor communities, promotion of biofuels for vehicles, and the rollout of solar-water heating systems, commitment 11 of the accord specifically aimed to promote localisation, youth employment, cooperatives and skills development in the green economy (EDD 2011). Specific commitments made to support the provision of youth employment in the green economy included ensuring that at least 80 percent of new employees from public and community works programmes designed for the installation of solar-water heating systems would be youth (EDD 2011).

A further government initiative aimed at promoting the greening of South Africa’s economy is the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP), launched in 2011 to replace the feed-in tariff process in place at the time (Eberhard, Kolker and Leigland 2014). The REIPPPP acts as a competitive tender process, whereby stakeholders from the private sector compete to be awarded contracts for generating energy via renewable sources, which can be used to supplement South Africa’s electricity grid. The REIPPPP, in addition to promoting the greening of South Africa’s economy, also has an explicit goal of economic development through job creation and economic empowerment, which is reflected in a heavy weighting (30 percent) assigned to economic growth when assessing potential bids for the project (Eberhard and Naude 2017). From 2011 onwards, two key development strategies for the green economy were discussed. The National Development Plan (NDP), launched in 2012, aimed to eliminate poverty and reduce inequality by 2030. One of the key goals outlined in the NDP is to ensure environmental sustainability and an equitable transition to a low-carbon economy (National Planning Commission (NPC) 2012). To achieve this goal, the NDP suggests investing in skills,

technology, and institutional capacity that support the transition to a more sustainable economy (NPC 2012).

In particular, it was stated that South Africa should develop environmentally sustainable products and services in which the country has a competitive advantage and can generate numerous jobs (NPC 2012). The Economic Reconstruction and Recovery Plan (ERRP), launched in 2020 by President Cyril Ramaphosa, aimed to reinvigorate the South African economy, which had been severely impacted by the COVID-19 pandemic and associated lockdowns. The ERRP highlighted several interventions to facilitate the growth of the green economy, recognising that it could help address South Africa's persistent economic challenges, such as unemployment and poverty (The Presidency 2020).

Additional programmes supporting South Africa's green economy include non-specific financial programmes, such as the Black Industrialist Support Programme, supported by the Industrial Development Corporation, as well as capacity building projects implemented by the National Cleaner Production Centre (United Nations Environment Programme (UNEP) 2020). Furthermore, tax incentives from the South African government have successfully promoted green research and development ventures, with the proportion of expenditure on green research and development increasing by between 4.3 percent and 4.8 percent per annum between 2010/11 and 2016/17, and more than 100,000 green patents being registered in South Africa between 1977 and 2016 (UNEP 2020).

Even though the above has highlighted policies around green jobs in South Africa more broadly, our focus is particularly on the green transition away from coal-based power. The remainder of this report thus focuses on research specifically aimed at identifying employment opportunities for youth who may be displaced by the transition away from coal power, and what challenges these youth may face in accessing these jobs.

2. Research design and methodology

Research questions

This research was guided by several main research questions, derived directly from the overall project guide. These research questions are as follows:

- What does work mean to 'unheard' young people and what roles does it play in their lives in terms of providing meaning, status, respect and a living?
- What are young people's aspirations and what do they perceive are the barriers to achieving them?
- How do young people perceive green jobs?
- How accessible are green jobs to young people?

Each question above gives rise to several sub-questions that focus the research on key areas, including gender differences in jobs and aspirations, barriers to work, skill matching, and job creation. We addressed these questions through a mixed-methods analytical

approach, incorporating quantitative methods that focused on occupational analysis and semi-structured interviews to gather qualitative information not available through nationally representative surveys.

The focus on youth from a skills perspective serves to anchor this work in the South African context of low-skill levels and high joblessness rates. This study employed a two-stage mixed-methods approach, combining rigorous quantitative analysis with in-depth semi-structured qualitative interviews. This collaborative research design drew on academic expertise while emphasising the upskilling of the youth researchers, empowering them with research capabilities and transferring practical methodological skills through hands-on involvement in the data collection and analysis processes (see Appendix 1 for profiles of the youth researchers).

Quantitative approach

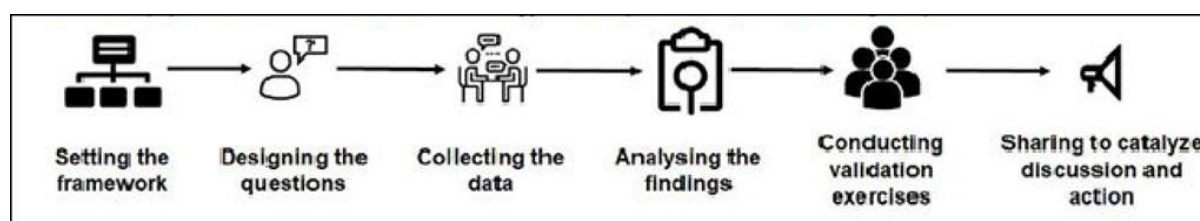
The quantitative approach focused on an occupational analysis using nationally representative household survey data collected by Statistics South Africa (StatsSA 2023a; StatsSA 2023b; StatsSA 2023c; StatsSA 2024), as well as additional taxonomical data from the Occupation Information Network (O*NET 2024) and the Department of Higher Education and Training's Organisational Framework for Occupations (DHET 2021). The occupational analysis provides a basis for understanding key contextual information concerning youth in the labour market and green jobs in South Africa. This analysis aimed to identify feasible employment opportunities for those individuals in the Mpumalanga province that minimised retraining and reskilling costs by leveraging existing skill bases amongst youth. A result of this analysis was the identification of jobs, and specifically green jobs, that would be most readily accessible to young workers and unemployed youth in Mpumalanga. Further details on this methodology are presented below, along with the quantitative findings from Hill, Neethling, and Oosthuizen (2024).

Qualitative approach

The quantitative findings and literature review from the initial phase informed the qualitative component of the research, which formed the heart of the study's community engagement approach. This phase represented a deliberate shift from data about youth to insights with youth, positioning young people as both researchers and participants in understanding their employment futures while ensuring the findings would have direct policy relevance for green transition planning.

Restless Development used its six-step youth-led research methodology depicted by Figure 2 below.

Figure 2: Six-step youth led research methodology



Source: Restless Development (<https://restlessdevelopment.org/youth-led-research/>)

Through this methodology, young people take a leading role in every step of the process, with staff providing technical support at each step. This is a peer-to-peer approach that allows young people to uniquely capture the perspectives of young people like themselves, providing deep and rich data. The youth-led methodology empowers young people as researchers, enhancing community trust and ensuring that findings are contextually relevant and grounded in lived realities. The process also strengthens advocacy by linking evidence generation to policy influence. However, challenges included the potential for bias due to shared experiences with respondents, and the use of significant resources, as high levels of training and support were required. Despite these limitations, the approach remains a powerful tool for producing credible, participatory, and action-oriented research that amplifies youth voices.

Restless Development recruited six young researchers who underwent foundation training that equipped them with essential research skills, including data collection, ethical conduct and data analysis. These youth researchers became the primary data collectors, conducting semi-structured interviews across eight communities in Mpumalanga.

The qualitative inquiry focused on capturing youth perspectives on the occupations identified through the occupational analysis, exploring not only whether young people were aware of these opportunities, but also how they perceived their accessibility, desirability, and alignment with their personal aspirations and community needs. Through in-depth conversations, the research uncovered nuanced attitudes, barriers and motivations that quantitative data alone could not reveal, providing a rich understanding of how green job opportunities intersected with the lived experiences of young people in coal-dependent communities.

Qualitative data overview

The study focused on Black African youth in Mpumalanga. Mpumalanga – the centre of South Africa's coal mining industry (employing 93 percent of coal workers) – faces significant exposure to green transition impacts. Given the demographic composition of the provincial population – 95.3 percent of the provincial population is Black African, with an even higher proportion amongst the youth cohort – the qualitative work focused purely on Black Africans. A total of 132 Black African youth were interviewed from Witbank Kwa-Guqa, Clewer, Klarinet, Duvha Power Station, Lisedi Village, KwaSibhamu, Ogies and Phola.

The young researchers conducted interviews with youth in various communities, utilising a statistical stratification strategy that informed the different groups based on the quantitative study. The key groups included individuals employed directly in the mines,

individuals employed in the general mining sector, and individuals previously employed but currently unemployed. The quantitative study could not offer significant insight into individuals who had never been employed, necessitating a fourth category of interest.

A breakdown of the respondents selected for participation in the interviews is shown in Table 2 below. Of the sample of 131 respondents, approximately seven out of ten were male. Just over one-third were employed in the mines, while half were unemployed. Of this latter group of 66 individuals, 40 (six out of ten) had never been employed before, while the remainder had been previously employed. Female respondents, however, were substantially more likely to be unemployed: 30 of the 39 respondents were unemployed, with just over half of the female sample never having been employed.

Table 2: Total number of respondents disaggregated by gender and employment subgroup

	Target	Achieved			Variance
		Male	Female	Total	
Employed in the mines	50	43	6	49	-1
Employed in the general mining sector	20	13	3	16	-4
Never employed	35	20	20	40	5
Previously employed	35	16	10	26	-9
Total	140	92	39	131	-9

Table 3 indicates the level of education of the respondents. Most (54 percent) of the respondents had complete secondary education, while 31 percent of the respondents had not completed secondary education. A small proportion of respondents (15 percent) held a post-school qualification, such as a degree, diploma or postgraduate degree.

Table 3: Number of respondents by education level

Level of education	Number of youth	Share of sample (percent)
Incomplete secondary school	42	31
Matric or equivalent	71	54
Post-matric degree or diploma	10	8
Postgraduate degree	9	7
Total	132	100

Notes: 1. Incomplete secondary school refers to any individual who has achieved between a Grade 8 and Grade 11 education, or equivalent. 2. Matric education is equivalent to a complete secondary schooling.

Study limitations

There are two key limitations to the findings. The first is that this study focused solely on the supply side of the green jobs market, detailing the experiences of youth workers and job seekers. While we can provide detailed insights into how individuals navigate green career pathways and perceive job market conditions, we cannot offer corresponding analysis of employer perspectives, hiring insights or firm-level decision-making processes. This limitation means that we cannot fully capture the complex interplay between worker

aspirations and employer needs, nor can we examine potential mismatches between the skills workers believe are important, and what employers prioritise when making hiring decisions. The absence of employer voices also prevented us from understanding how firms define green jobs, what barriers they face in recruiting suitable candidates or how they structure career development pathways within their organisations.

The second limitation relates to the generalisability of the results to the broader South African context due to the localised nature of the research and the significant regional variations in economic development, industrial composition and green economy maturation across the country. The specific geographic focus of our research may reflect unique local conditions, including industry clusters that influence green job opportunities and career experiences in ways that may not be representative of other provinces. South Africa's diverse economic landscape, ranging from resource-intensive regions to service-oriented urban centres, means that green job markets vary considerably in terms of availability and skills requirements. Additionally, differences in infrastructure development, educational access and proximity to renewable energy projects across regions suggest that the experiences captured in this study may be highly context-specific and should not be assumed to reflect the national green jobs landscape.

3. Occupational relatedness between Mpumalanga youth and green jobs

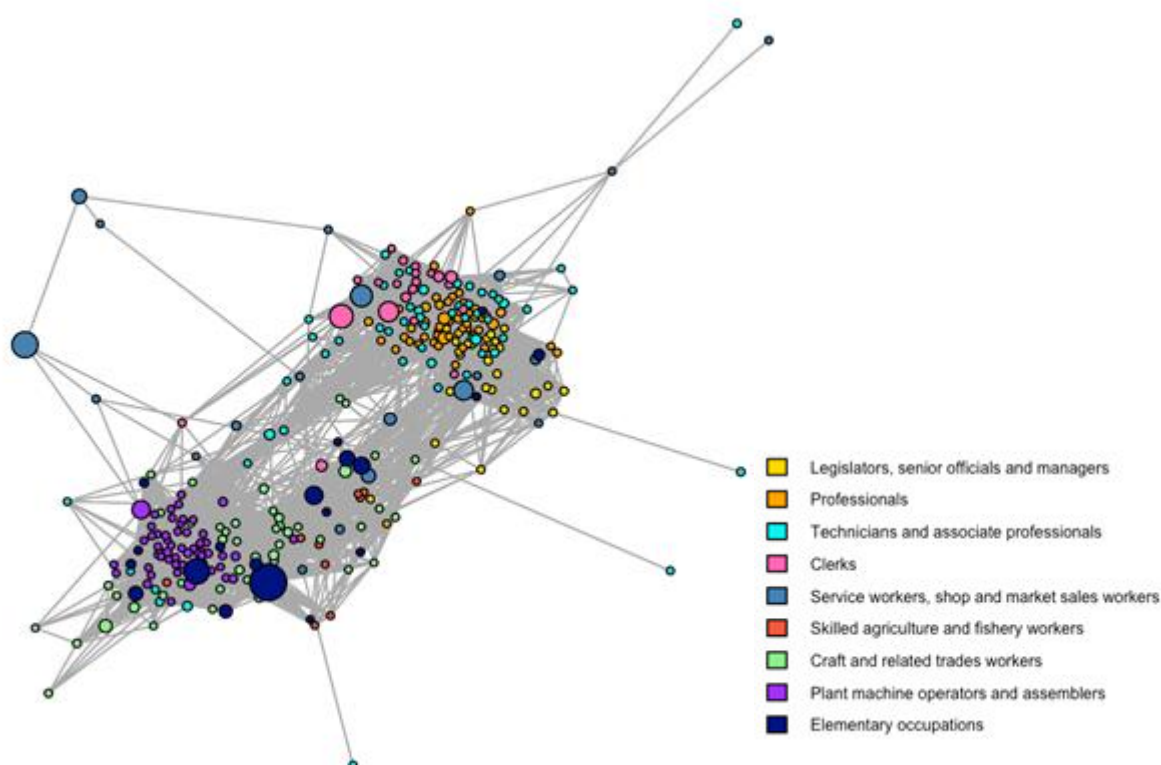
Making use of nationally and provincially representative data from Statistics South Africa (StatsSA 2023a; StatsSA 2023b; StatsSA 2023c; StatsSA 2024), as well as additional taxonomical data from the Occupation Information Network (O*NET 2024) and the Department of Higher Education and Training's Organisational Framework for Occupations (DHET 2021), the quantitative analysis profiles the state of youth employment in Mpumalanga for 2023. This profiling exercise aimed to identify potential green jobs that could serve as employment opportunities for different youth populations. Once these options were identified, they were carried forward using qualitative research methods to investigate the feasibility and attractiveness of these options to the youth.

The occupation space

Following the method proposed initially by Mealy, del-Rio Chanona and Farmer (2018), we make use of task information from the O*NET (2024) data to construct an "occupation space" for the South African economy. The O*NET dataset contains disaggregated information for the level and importance of 41 distinct work activities across more than 1,000 standardised occupations. These work activities are concise descriptions of tasks that can be performed within the context of an individual's occupation. Using Balassa's (1965) definition of revealed comparative advantage, we can compute whether a task is considered relatively crucial for a given occupation compared to others. Using this information, we can quantify the relationship between the two occupations by computing the probability of essential tasks for both occupations. Put simply, two occupations are closely related if they exhibit relative importance in a relatively large proportion of the same functions, while occupations are considered less related if they exhibit relative importance in different tasks.

These calculations can be summarised in a network diagram, such as the one depicted in Figure 3. This diagram represents 4-digit² occupations by nodes, which are coloured according to the 1-digit South African Standard Classification of Occupations (SASCO) major groups. Nodes are sized according to the relative share of employment made up by this occupation in the South African economy – information sourced from the QLFS data (StatsSA, 2023a; StatsSA, 2023b; StatsSA, 2023c; StatsSA, 2024). The distance between nodes is inversely proportional to the degree of relatedness in task content between two occupations. In other words, nodes that are close to each other represent highly related occupations; in contrast, nodes far from one another represent unrelated occupations.

Figure 3: The South African occupation space



Source: Authors' calculations from Stats SA (2023a; 2023b; 2023c; 2024) and O*NET (2024)

Notes: 1. Nodes are sized according to the total South African employment share in the 4-digit occupation represented by a given node. 2. Colour coding of nodes according to 1-digit SASCO major group.

The network diagram presented in Figure 1 highlights that occupations broadly categorised as elementary occupations, plant machine operators and assemblers, and craft and related trades workers form a relatively connected group of occupations in the bottom-left corner of the occupation space diagram. These occupations are often considered to have generally lower skill requirements. Similarly, occupations with mid- to high skill requirements, such as legislators, senior officials and managers; professionals; technicians and associate

²The number of digits describing an occupation within an occupational classification framework corresponds to the level of disaggregation in the occupation structure. Most frameworks have 6-digit occupations as a most-detailed level of disaggregation, which become progressively less detailed through their 4-digit, 2-digit, and finally 1-digit classifications.

professionals; and clerks, form a cluster of related occupations in the top-right corner of the diagram. This suggests that there is a primary divide in occupational structure between what might be considered production occupations in the bottom-left of the occupation space, and non-production occupations in the top-right of the occupation space.

Profiling green jobs in South Africa

Although there is no universal definition of what constitutes a “green occupation” (Valero et al. 2021), DHET (2013) has identified 96 occupations in the Organising Framework for Occupations (OFO) as green. These are defined as occupations that include descriptors related to the following objectives:

- Developing and adopting renewable sources of energy
- Reducing consumption of energy, fossil fuels and raw materials
- Enhancing energy and resource efficiency
- Reducing greenhouse gas emissions
- Decreasing waste and pollution
- Recycling materials
- Preventing the loss of biodiversity and restoring ecosystems.

For this study, we chose to focus our analysis on the 96 occupations identified by DHET as green occupations. Even if this definition proves to be incomplete, we feel that adopting it for our analysis is reasonable, as it will ensure alignment of this research with existing frameworks within the South African policy space.

In Table 4, we estimated the proportion of green occupation employment across 1-digit Standard Industrial Classification (SIC) groupings, for youth and non-youth in both Mpumalanga and the rest of South Africa. Overall, the proportion of individuals employed in green occupations is slightly higher in Mpumalanga (12.6 percent for youth and 13.2 percent for non-youth) than in the rest of South Africa (10.6 percent and 10.5 percent for youth and non-youth respectively). This difference between Mpumalanga and the rest of South Africa is significant at the 10 percent level for youth and the 1 percent level for non-youth, indicating that employment in Mpumalanga is already greener than the rest of the country.

Furthermore, the manufacturing and construction industries in Mpumalanga have greener employment shares than those in the rest of South Africa, for both age-groups. Specifically, the share of employment in green manufacturing at the time of writing was approximately 39.0 percent higher in Mpumalanga relative to the rest of South Africa for youth, and 60.7 percent higher for non-youth. Similarly, nearly half of all Mpumalanga youth in the construction industry were employed in green occupations, compared to just over one-third in the rest of South Africa. Although this difference was less pronounced for non-youth, there was still a 5.7 percentage point higher share of green employment in construction for non-youth in Mpumalanga compared to the rest of South Africa.

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Table 4: Share of green occupation employment by population and industry

	Youth		Non-youth	
	Mpumalanga	Rest of South Africa	Mpumalanga	Rest of South Africa
N	428 459	5 333 529	752 443	9 912 134
Agriculture, hunting, forestry and fishing	0.006 [-0.005; 0.017]	0.009 [0.004; 0.015]	0.020 [-0.007; 0.046]	0.010 [0.005; 0.015]
Mining and quarrying	0.060 [-0.006; 0.126]	0.123 [0.08; 0.165]	0.083 [0.033; 0.132]	0.097 [0.066; 0.128]
Manufacturing	0.146 [0.068; 0.224]	0.105 [0.085; 0.126]	0.172 [0.083; 0.261]	0.107 [0.091; 0.122]
Electricity, gas and water supply	0.270 [0.121; 0.418]	0.503 [0.332; 0.673]	0.443 [0.326; 0.561]	0.447 [0.358; 0.535]
Construction	0.485 [0.376; 0.593]	0.357 [0.324; 0.391]	0.381 [0.296; 0.466]	0.324 [0.299; 0.349]
Wholesale and retail trade	0.081 [0.051; 0.111]	0.069 [0.059; 0.078]	0.143 [0.107; 0.18]	0.096 [0.086; 0.106]
Transport, storage and communication	0.045 [-0.018; 0.107]	0.045 [0.027; 0.063]	0.053 [0.011; 0.094]	0.045 [0.031; 0.059]
Financial and business services	0.069 [0.026; 0.113]	0.112 [0.096; 0.129]	0.063 [0.032; 0.094]	0.081 [0.071; 0.091]
Community, social and personal services	0.145 [0.076; 0.214]	0.100 [0.086; 0.113]	0.128 [0.091; 0.164]	0.112 [0.102; 0.122]
Private households	0.000 -	0.001 [-0.001; 0.004]	0.002 [-0.002; 0.007]	0.001 [0; 0.001]
Total	0.126 [0.106; 0.146]	0.106 [0.101; 0.112]	0.132 [0.117; 0.147]	0.105 [0.101; 0.110]

Source: Authors' calculations from Statistics South Africa (2023a; 2023b; 2023c; 2024); DHET (2021)

Notes: 1. Industries defined according to 1-digit SIC industry codes. 2. All estimates are weighted and corrected for complex survey design. 3. Figures in square parentheses below estimates represent 95 percent confidence intervals. 4. Youth are defined as those individuals aged 15-34 years, while non-youth are those aged 35 to 64.

Table 5 compares the characteristics of those employed in green jobs and non-green jobs in Mpumalanga and the rest of South Africa. These comparisons consider differences in the demographic characteristics of employment and differences in job characteristics, including measures of job quality. In Mpumalanga, there are very few significant differences between green and non-green jobs, except that our measures of job quality, including access to paid leave, parental leave, and employer contributions to pension funds and unemployment insurance, are lower for green occupations than for non-green occupations. This is particularly interesting given that the share of green jobs in the formal sector appeared to be slightly (although not statistically significant) higher than the share of non-green jobs.

Table 5: Comparison of green jobs and non-green jobs in Mpumalanga and South Africa

	Mpumalanga		Rest of South Africa		
	Non-green jobs	Green jobs	Non-green jobs	Green jobs	
Female (%)					**
	0.44	0.39	0.46	0.34	*
	(0.02)	(0.04)	(0.01)	(0.01)	
Average years of education	11.45	11.39	11.71	11.82	
	(0.09)	(0.23)	(0.03)	(0.08)	

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<u>Population group</u>					
African (%)	0.93 (0.01)	0.94 (0.02)	0.77 (0.01)	0.74 (0.01)	**
Coloured (%)	0.00 (0.00)	0.00 -	0.13 (0.00)	0.13 (0.01)	
Asian/Indian (%)	0.01 (0.01)	0.00 -	0.03 (0.00)	0.03 (0.01)	
White (%)	0.05 (0.01)	0.06 (0.02)	0.07 (0.00)	0.10 (0.01)	** *
<u>Sector</u>					
Formal (%)	0.64 (0.02)	0.69 (0.04)	0.76 (0.01)	0.76 (0.01)	
Informal (%)	0.31 (0.02)	0.31 (0.04)	0.20 (0.01)	0.24 (0.01)	** *
Private households (%)	0.05 (0.01)	0.00 -	0.04 (0.00)	0.00 (0.00)	** *
<u>Job characteristics</u>					
UIF contributions (%)	0.56 (0.03)	0.43 (0.06)	0.64 (0.01)	0.65 (0.02)	*
Access to paid leave (%)	0.54 (0.03)	0.44 (0.06)	0.63 (0.01)	0.62 (0.02)	*
Access to sick leave (%)	0.61 (0.02)	0.54 (0.06)	0.69 (0.01)	0.66 (0.02)	*
Access to parental leave (%)	0.42 (0.03)	0.32 (0.05)	0.49 (0.01)	0.52 (0.02)	**
Pension fund contributions (%)	0.33 (0.02)	0.24 (0.04)	0.35 (0.01)	0.39 (0.02)	**
Written contract (%)	0.74 (0.02)	0.79 (0.05)	0.81 (0.01)	0.84 (0.01)	*

Source: Authors' calculations from Statistics South Africa (2023a; 2023b; 2023c; 2024); DHET (2021)

Notes: 1. Standard errors are presented in the parentheses below the estimates. 2. Asterisks (*) represent the level of statistical significance for a test of equality between non-green jobs and green jobs for a given subpopulation: *** p<0.01; ** p<0.05; * p<0.1. 3. UIF stands for "Unemployment Insurance Fund" – the name of South Africa's unemployment insurance programme.

However, when considering how green jobs compare to non-green jobs in the rest of South Africa, a slightly different picture emerges. Firstly, in the whole of South Africa, employees in green jobs are significantly less likely to be female than in non-green jobs. It is unclear whether this is due to a lack of opportunities or simply due to occupational selection. However, the finding that green jobs are male dominated is consistent with findings in Latin America (Alvarez 2024). This result is crucial for policymakers, as it suggests that efforts must be made to promote female employment in green jobs to ensure that the green transition does not further marginalise women. Secondly, the racial composition of green job employees shows that African individuals account for 77 percent of non-green job employment, compared to 74 percent of green job employment. This suggests that African individuals are proportionally less likely to be employed in green jobs. In contrast, white individuals are considerably more likely to be employed in green jobs. This result is not replicated in Mpumalanga, which is not surprising given the demographic composition of the province's workforce. However, it is crucial to ensure that any employment

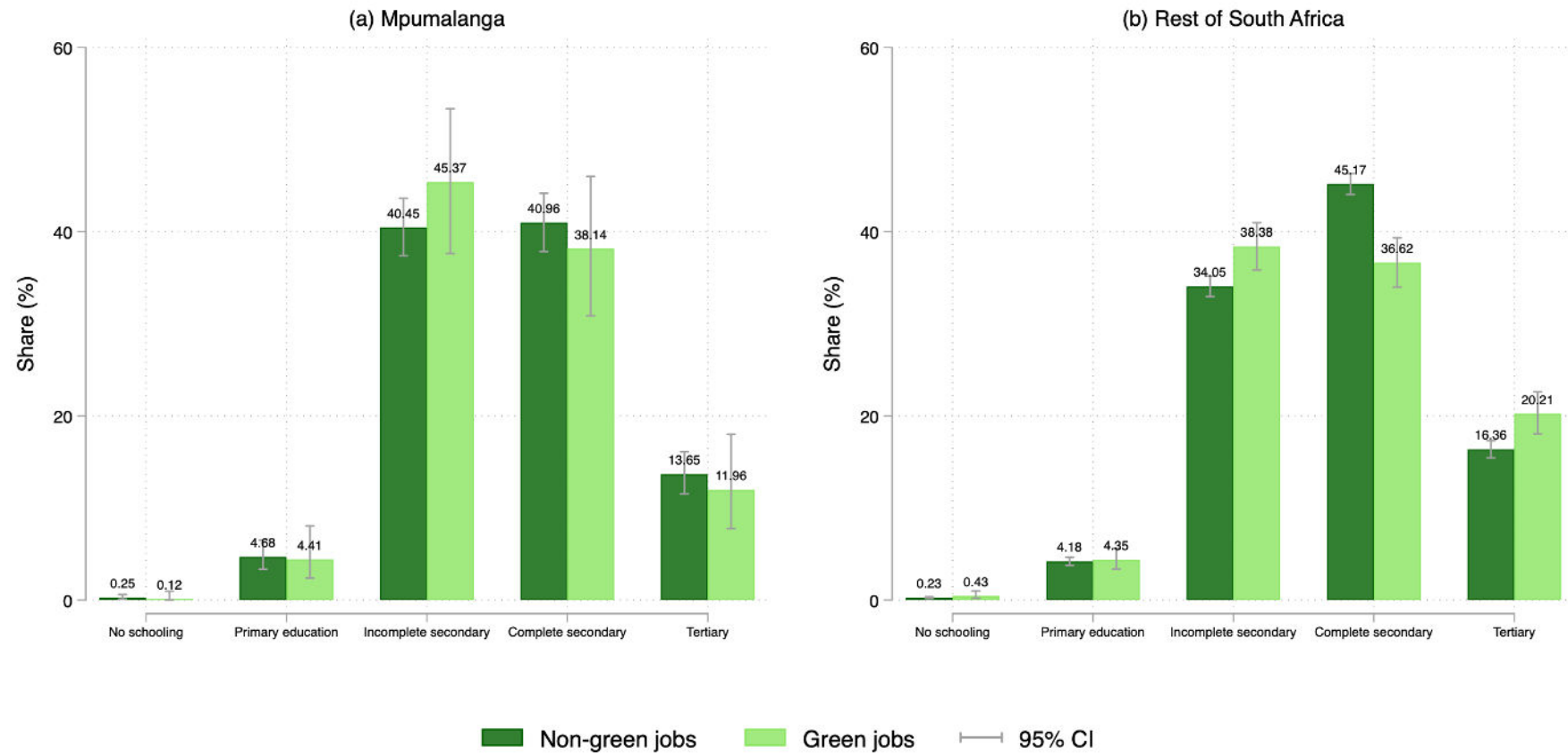
opportunities in green jobs presented by the green transition actively support African employment, to prevent the transition from further marginalising African people.

Furthermore, a greater proportion of green jobs were found in the informal sector than is the case for non-green jobs. This difference is predominantly accounted for by the share of private household employment among non-green jobs. Finally, most job quality differentials between green and non-green jobs in Mpumalanga disappeared in the rest of South Africa. Where significant differences between green jobs and non-green jobs existed, they generally favoured green jobs – i.e., greater proportions of employees in green jobs were employed based on a written contract, as well as a greater share of green job employees having employer pension contributions.

Interestingly, in the South African case, the modal education level for green jobs was lower than that for non-green jobs (see Figure 4).

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Figure 4: Distribution of education levels for green jobs vs non-green jobs in Mpumalanga and South Africa



Source: Authors' calculations from Stats SA (2023a; 2023b; 2023c; 2024); DHET (2021)

For South Africa, the share of green jobs requiring tertiary education was significantly higher than the share of non-green jobs requiring tertiary education. In both Mpumalanga and South Africa more broadly, the modal level of education for those individuals employed in green occupations was an incomplete secondary education. In contrast, the modal education level attained by employees in non-green jobs was a complete secondary education. This suggests that there is likely to be a larger skills gap present for green jobs than for non-green jobs. Differences in the share of employees with different educational attainment levels were only significant in the case of the broader South African economy.

In contrast, the distribution over education levels in the Mpumalanga economy generally did not differ between green and non-green jobs. Although these results seem to stand in comparison to the literature, Consoli et al. (2016) suggest that future green occupations that arise due to the greening of the economy are likely to rely more heavily on on-the-job training, and that formal education does not serve as a specifically distinctive trait characterising new and emerging green occupations. Thus, it is conceivable that green occupations in the South African context have been less stringent in their formal education requirements, but have instead focused on practical on-the-job training for workers employed in green occupations. Moreover, this may suggest that policies to address skills gaps for green jobs need not necessarily be focussed on formal education interventions, but could consider alternative pathways that leverage existing skills attained by the youth through vocational training or prior work experience.

Table 6 presents the share of employment in green jobs by gender and industry, further unpacking the gender disparity identified in Table 5. Overall, there were no significant differences in the patterns of green employment across industries by gender. Where significant differences in point estimates occurred between men and women, these were often accompanied by large standard errors and wide confidence intervals, indicating that small sample sizes do not allow for robust inference. Notwithstanding this, there are some potentially interesting points to note from this table. First, it seems that within the Mpumalanga province, a greater proportion of female youth than male youth were employed in green jobs within manufacturing, wholesale and retail trade, transport, and financial and business services, while more male youth were employed in green jobs in construction and electricity, gas and water supply. A fascinating result was the highly gendered difference in the rest of South Africa's electricity, gas, and water supply sector, where 65.4 percent of male youth in this sector were employed in green jobs compared to just 5.3 percent of their female counterparts.

This result may simply be due to the occupational structure of the electricity, gas and water supply sector. It is possible that those green occupations most chosen by female youth are relatively less common in the electricity, gas and water supply sector than in other sectors, hence driving down the proportion of female youth employed in green jobs within this sector. Regardless of the underlying reason for this difference, this result remains interesting, as it suggests that male youth may have a potential advantage in employment transition opportunities in the event of a shift away from coal power in South Africa.

Table 6: Share of green occupation employment by gender and industry

	Male Youth		Female Youth	
	Mpumalanga a	Rest of South Africa	Mpumalanga a	Rest of South Africa
N	252 657	3 060 933	175 802	2 272 596
Agriculture, hunting, forestry and fishing	0.009 [-0.007; 0.025]	0.010 [0.003; 0.016]	0.000 -	0.008 [-0.002; 0.018]
Mining and quarrying	0.085 [-0.006; 0.176]	0.096 [0.049; 0.143]	0.000 -	0.219 [0.114; 0.324]
Manufacturing	0.131 [0.051; 0.21]	0.101 [0.078; 0.125]	0.221 [0.032; 0.41]	0.114 [0.075; 0.154]
Electricity, gas and water supply	0.295 [0.15; 0.439]	0.654 [0.469; 0.84]	0.157 [-0.148; 0.463]	0.053 [-0.053; 0.16]
Construction	0.503 [0.388; 0.617]	0.370 [0.333; 0.406]	0.368 [0.095; 0.64]	0.273 [0.187; 0.359]
Wholesale and retail trade	0.044 [0.016; 0.072]	0.077 [0.063; 0.09]	0.124 [0.067; 0.181]	0.059 [0.046; 0.072]
Transport, storage and communication	0.021 [-0.021; 0.063]	0.027 [0.012; 0.042]	0.361 [-0.199; 0.921]	0.120 [0.057; 0.184]
Financial and business services	0.031 [0.001; 0.061]	0.112 [0.09; 0.133]	0.143 [0.041; 0.245]	0.113 [0.088; 0.138]
Community, social and personal services	0.135 [0.002; 0.268]	0.125 [0.1; 0.15]	0.150 [0.069; 0.232]	0.084 [0.07; 0.098]
Private households	0.000 -	0.004 [-0.004; 0.012]	0.000 -	0.000 -
Other	0.000 -	0.000 -	0.000 -	0.000 -
Total	0.135 [0.109; 0.16]	0.127 [0.119; 0.135]	0.114 [0.085; 0.143]	0.081 [0.074; 0.088]

Source: Authors' calculations from Statistics South Africa (2023a; 2023b; 2023c; 2024); DHET (2021)

Notes: 1. Industries defined according to 1-digit SIC industry codes. 2. All estimates are weighted and corrected for complex survey design. 3. Figures in square parentheses below estimates represent 95 percent confidence intervals. 4. Youth are defined as those individuals aged 15-34 years.

Although the results presented above suggest some gendered differences in green employment among male and female youth, the remainder of this section adopts a gender-neutral analysis. Concerns about the representativeness of our sample mainly drive this. Disaggregating our analysis to focus only on Mpumalanga youth already threatens the overall representativeness of our results due to the small sample sizes. Subdividing this sample by gender may result in estimates that do not accurately reflect population estimates. As a result, we opted to focus on a gender-neutral analysis for the remainder of the quantitative chapter. This should also help ensure that existing gender biases within employment are not highlighted and further entrenched through this analysis. However, differences in findings by gender will be further explored in subsequent chapters related to the qualitative research.

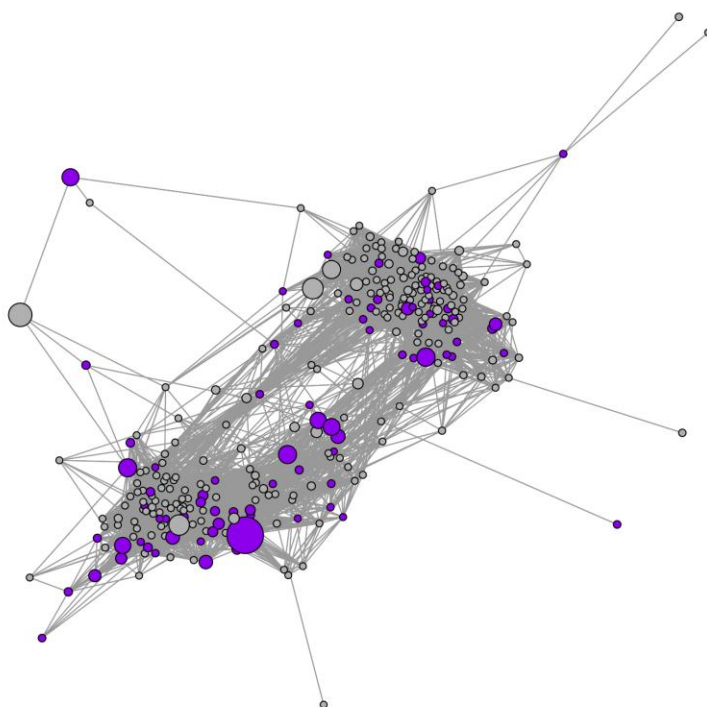
Identifying green job opportunities for employed youth

In this subsection, we aim to identify the most suitable green job opportunities for youth at risk of displacement due to the transition away from coal power in Mpumalanga. To

accomplish this, the research employed the concept of revealed comparative advantage, identifying occupations that were more prevalent among the youth in the Mpumalanga province. Simply put, we calculated the proportion of the youth population employed in each occupation, both for Mpumalanga and South Africa. For example, if the share of Mpumalanga youth population employed in a given occupation exceeds the share of the South African youth population employed in that same occupation, then this occupation is classified as “relatively prevalent” in Mpumalanga. This process creates a set of occupations termed the “Mpumalanga youth employment bundle”, which helps to identify the existing skillset of youth currently employed in Mpumalanga. This is useful, as it provides insight into the skills that may be transferable to green jobs during job displacement.³

In Figure 5, we repurpose our occupation space from Figure 3 to highlight those occupations that comprise the Mpumalanga youth employment bundle. We also resized the nodes to represent the share of Mpumalanga employment in each occupation. In so doing, we created a visual ‘heat-map’ of where Mpumalanga employment was clustered in the occupation space. The result showed a higher concentration of employment in the bottom-left of the occupation space, which was primarily dominated by lower-skilled, production-focused occupations. On the other hand, the top-right corner of the occupation space (which is representative of non-production occupations) is less densely shaded.

Figure 5: Occupation bundle for employed Mpumalanga youth



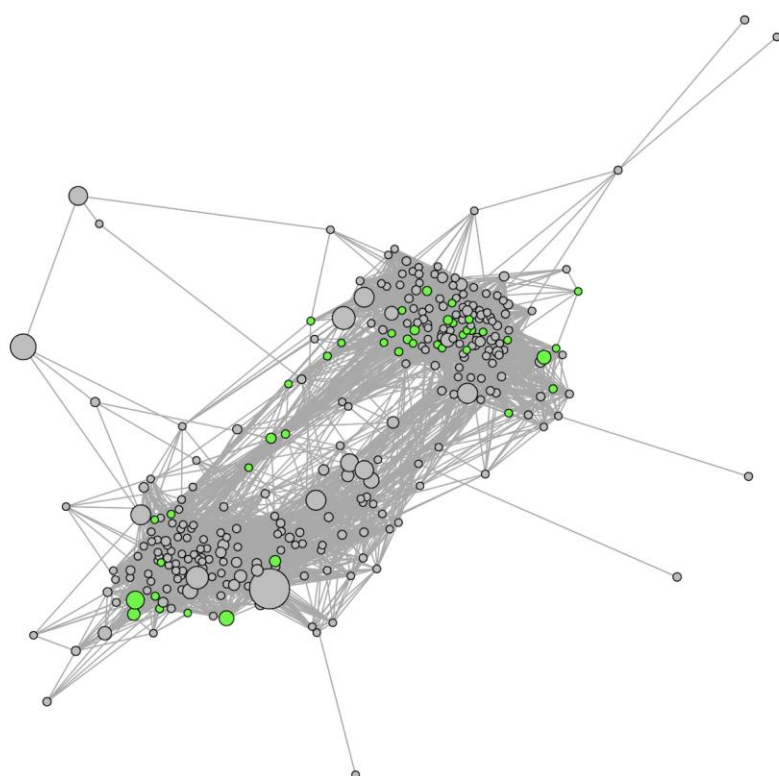
Source: Authors' calculations from Stats SA (2023a; 2023b; 2023c; 2024) and O*NET (2024).

³ Although this methodology speaks to skills that may be transferable, it is possible that youth who are employed in jobs with skills mismatches may have alternative skills that may transfer more easily to other jobs. For the sake of simplicity, we opt to assume that the skills present are restricted to only those that arise from a young person's employment history.

Notes: 1. Nodes are sized according to the share of Mpumalanga employment in the 4-digit occupation represented by a given node. 2. Purple nodes represent ISCO-88 occupation codes identified as part of Mpumalanga's employed youth occupation bundle.

We overlaid the 96 green occupations identified by the OFO onto the occupation space and the results are represented in Figure 6. Nodes were sized according to the relative share of employment in Mpumalanga. Some key insights can be observed when considering Figures 5 and 6 together. The two occupation spaces displayed clusters of highlighted occupations in generally different parts of the diagram. Green jobs were clustered towards the top-right of the occupation space, while the Mpumalanga youth employment bundle was clustered towards the bottom left of the occupation space. The distance between the nexuses of the highlighted nodes suggests that these two types of jobs were relatively dissimilar, requiring, on average, employees to be competent in different tasks. The natural conclusion is that for a wholesale move towards green jobs to occur, a significant amount of reskilling must take place before the bulk of green jobs become accessible to the average Mpumalanga youth.

Figure 6: Green occupations in the occupation space



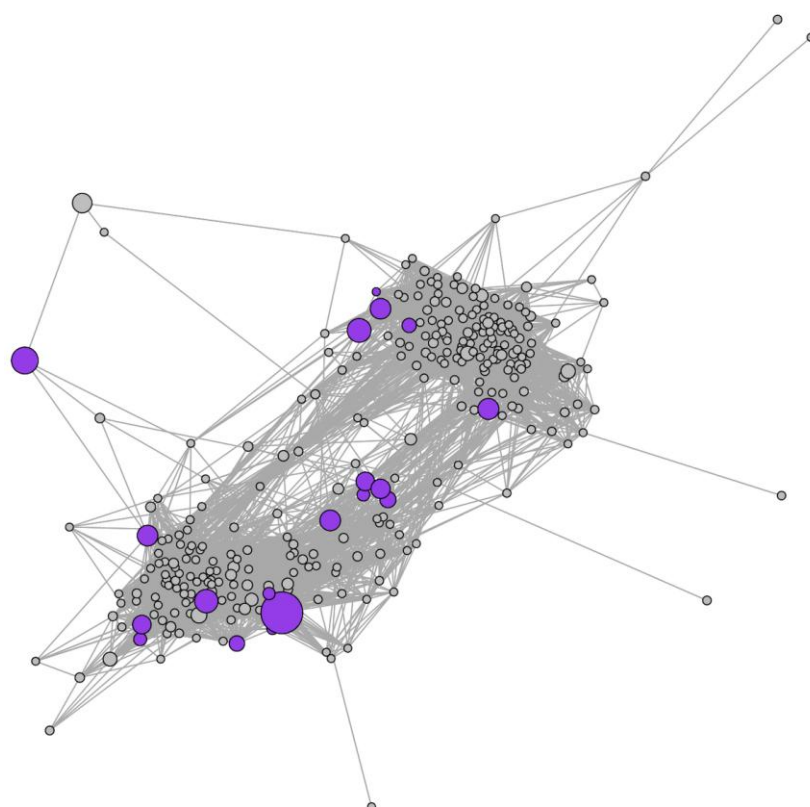
Source: Authors' calculations from Stats SA (2023a; 2023b; 2023c; 2024); O*NET (2024); DHET (2021)

Notes: 1. Nodes are sized according to the share of Mpumalanga employment in the 4-digit occupation represented by a given node. 2. Green nodes represent ISCO-88 occupation codes identified as "green occupations" via the OFO green occupation definition.

Identifying green job opportunities for unemployed youth

We further expanded on our analysis by examining the job opportunities available to unemployed youth in Mpumalanga. The method employed is slightly different, as unemployed individuals cannot be associated with an occupation. Therefore we used data collected which was based on the previous occupation of unemployed youth as a proxy for the skills that currently unemployed individuals may possess. For analysis, we then identified the top 20 previous occupations based on the share of the unemployed youth population in each occupation bundle. These occupations accounted for 72.9 percent of the previously employed youth population in Mpumalanga, which we believe is a reasonable proxy for the types of skills that unemployed youth in Mpumalanga were likely to have. These 20 occupations are highlighted in Figure 7, which indicates a similar pattern to that presented above for employed youth, albeit with a starker concentration of occupations in the bottom-left of the occupation space.

Figure 7: Occupation bundle for unemployed youth in Mpumalanga who have been previously employed



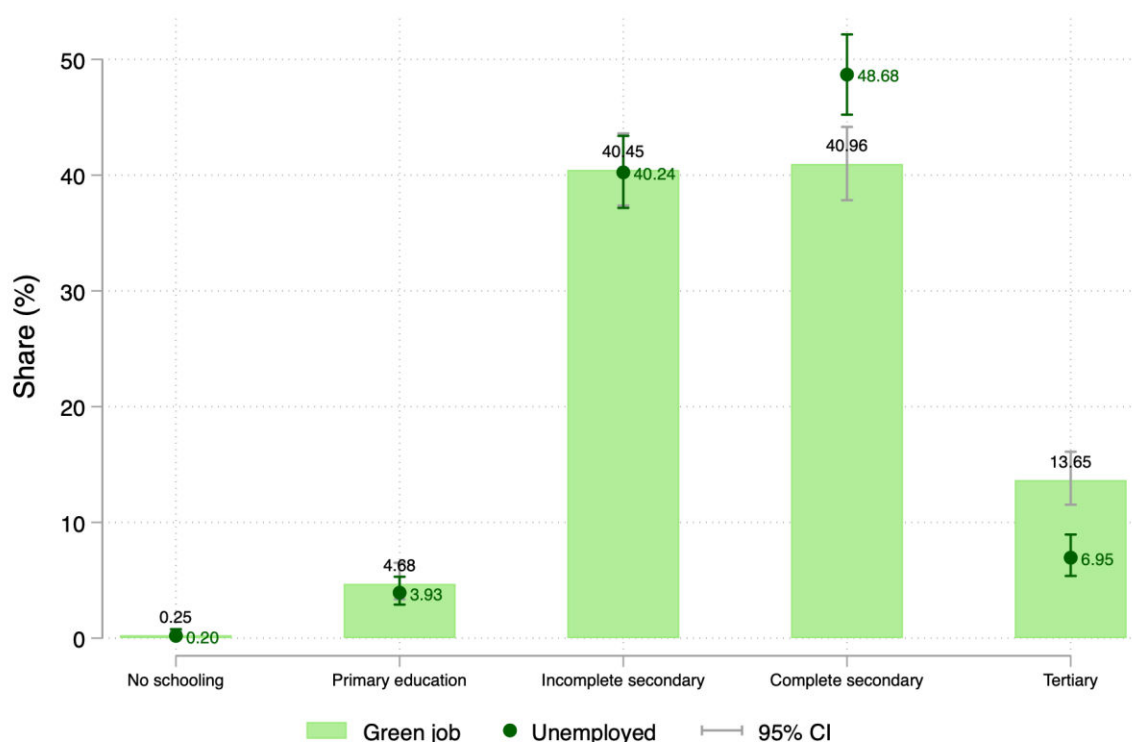
Source: Authors' calculations from Stats SA (2023a; 2023b; 2023c; 2024) and O*NET (2024).

Notes: 1. Nodes are sized according to the share of Mpumalanga employment in the 4-digit occupation represented by a given node. 2. Purple nodes represent ISCO-88 occupation codes identified as part of Mpumalanga's unemployed youth occupation bundle.

In Figure 8, we present the same distribution of educational attainment for youth employed in green jobs as in Figure 4. However, in this case, we overlaid the relative distribution of educational attainment for the unemployed youth in Mpumalanga. Regarding the education required for employment in green jobs in Mpumalanga, there was a relative abundance of

unemployed youth with a complete secondary education, and a relative shortage of unemployed youth with some form of tertiary education. For individuals with less than a completed secondary education, the distribution of educational attainment was consistent with the requirements for employment in green jobs. The concern, however, was that for those youth with a completed secondary education but no tertiary education, the transition to a green economy may further marginalise them and limit their employment options.⁴

Figure 8: Education profile of Mpumalanga youth employed in green jobs compared to unemployed Mpumalanga youth



Source: Authors' calculations from Stats SA (2023a; 2023b; 2023c; 2024); DHET (2021)

Note: 1. Unemployed youth are all categorised as unemployed under the broad definition of unemployment.

How to prioritise green occupations in Mpumalanga

Although the results presented above suggest that there is a substantial skills gap between what youth in Mpumalanga currently possess and what would be required for a transition into green jobs, this does not imply that green jobs are an ineffective pathway for youth to seek alternative employment in the transition away from coal-based power. Indeed, several green occupations are closely related to those in the current youth workforce making them viable options for youth employment opportunities in the context of a just transition.

Using network analytics, we calculated the distance of a green occupation from the existing youth occupation bundles (both for employed and unemployed youth) and ranked these from closest (i.e., most like the average existing skills in the bundle) to furthest (i.e., most

⁴ This result is robust regardless of whether the sample of youth used includes those who have been employed before or those who have never been employed.

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different to the average existing skills in the bundle). Table 7 presents a list of occupations ranked by their proximity to the skill sets of currently employed youth, currently unemployed youth, and the average of these two groups. The table explicitly shows occupations ranked according to their distance from the average of employed and unemployed youth skill bundles in Mpumalanga. It provides a key policy insight into what job opportunities could be leveraged to facilitate smooth labour market movement in the context of the just transition.

Table 7: Ranking green occupations according to employed and unemployed occupation bundles

OFO 6-digit code	OFO occupation title	Rank in employed youth bundle	Rank in unemployed youth bundle	Average rank
2021-642401	Insulation Installer	1	1	1
2021-313202	Waste Materials Plant Operator	2	2	2
2021-313201	Water Plant Operator	3	3	3
2021-311905	Industrial Engineering Technician	9	5	4
2021-213201	Agriculture Consultant	4	14	5
2021-213202	Agricultural Scientist	5	15	6
2021-313301	Chemical Plant Controller	19	4	7
2021-216201	Landscape Architect	7	17	8
2021-216401	Urban and Regional Planner	6	19	9
2021-216101	Architect	8	18	10
2021-314301	Forestry Technician	21	8	11
2021-314201	Agricultural Technician	20	10	12
2021-314302	Forestry Research Technician	22	9	13
2021-311601	Chemical Engineering Technician	16	16	14
2021-311401	Electronic Engineering Technician	23	11	15
2021-311301	Electrical Engineering Technician	25	12	16
2021-311302	Electric Substation Operations Manager	24	13	16
2021-134901	Environmental Manager	17	23	18
2021-143901	Facilities Manager	18	24	19
2021-311702	Metallurgical or Materials Technician	37	6	20
2021-214602	Mining Engineering Technologist	11	33	21
2021-311704	Geophysical Technician	38	7	22
2021-214605	Metallurgist	13	34	23
2021-214601	Mining Engineer	10	37	23
2021-214603	Metallurgical Engineer	14	35	25

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OFO 6-digit code	OFO occupation title	Rank in employed youth bundle	Rank in unemployed youth bundle	Average rank
2021-214604	Metallurgical Engineering Technologist	12	38	26
2021-214607	Petroleum Engineer	15	36	27
2021-211101	Physicist	26	26	28
2021-311202	Surveying or Cartographic Technician	35	20	29
2021-311201	Civil Engineering Technician	34	21	29
2021-311203	Town Planning Technician	36	22	31
2021-213105	Biotechnologist	39	28	32
2021-242215	Fraud Examiner	43	25	33
2021-213301	Conservation Scientist	29	40	34
2021-211402	Geophysicist	40	31	35
2021-213306	Water Quality Analyst	30	41	35
2021-213304	Earth and Soil Scientist	27	44	35
2021-332202	Sales Representative (Building and Plumbing Supplies)	46	27	38
2021-215201	Electronics Engineer	44	29	38
2021-211401	Geologist	41	32	38
2021-213308	Brownfield Redevelopment Specialist	28	45	38
2021-213302	Environmental Scientist	32	42	42
2021-215202	Electronics Engineering Technologist	45	30	43
2021-213307	Park Ranger	33	43	44
2021-213305	Air Quality Analyst	31	46	45
2021-216502	Surveyor	42	39	46
2021-263203	Geographer	47	47	47
2021-263101	Economist	48	48	48

Source: Authors' calculations from Stats SA (2023a; 2023b; 2023c; 2024); O*NET (2024); DHET (2021)

Table 7 shows that certain occupations, such as “Insulation Installer”, “Waste Materials Plant Operator”, and “Water Plant Operator”, were the most related skills held by both employed and unemployed Mpumalanga youth. This suggests that these three occupations may provide a relatively easy transition for displaced youth. As such, policymakers could promote a just transition by promoting industries that substantially use these occupations as a first step. For occupations further down the rankings list, policymakers would need to invest in training programmes to strengthen the capacity of youth in the skills and tasks required for these occupations. This suggests that vocational training programmes would be valuable for medium-term job displacement resulting from the transition to coal power.

All in all, although substantial skills gaps need to be bridged, our research has shown that green jobs offer at least some opportunities for those youth who may be impacted by the transition away from coal power. While these quantitative findings support green jobs as a viable opportunity for youth, it is unclear whether existing attitudes and perceptions around green jobs will support the application of any conclusions presented. Therefore, the following sections of this report unpack findings from a qualitative survey administered to youth in Mpumalanga regarding their attitudes and thoughts on green jobs. The findings presented in this section informed the design of the interview guide given to the youth (Appendix 2). The following qualitative findings serve as a tool to validate or test the strength of the quantitative findings and whether they could provide a viable avenue for policymakers in their plans for a just transition.

4. The meaning and role of work

Meaning of work

According to the International Labour Organisation (ILO) (2016), work is any activity performed by people of any age and sex to produce goods or services for others or their use. This definition includes all types of work, regardless of whether it is done for pay, profit, or personal use.

Work is not universally defined; it is socially constructed and shaped by individual experiences, values, and the social context in which they occur. For most youth, Manuti, Curci and Van der Heijden (2018) indicate that the meaning of work extends beyond economic necessity; it also includes personal well-being, personal development, life balance, and aspirations for a better future.

Findings from the qualitative research affirm the definition provided by Manuti et al. (2018). For a mineworker, it means a better life and an improvement in his situation; for an unemployed male, it means building skills and knowledge; and for an unemployed female, it means owning a business.

The meaning of work to the youth from mining communities in Mpumalanga, as revealed by the findings, was centred on improving life circumstances, achieving financial security, gaining independence, and developing skills. These diverse responses from the youth highlighted that work is not a one-size-fits-all concept; it carries different meanings depending on each person's background and perspective. Young men working in the coal mines indicated that work meant having a better life, flexible working hours, good working conditions, and providing long-term financial support (pension fund). Meanwhile, unemployed youth indicated that work meant self-development, involving the acquisition of new skills and knowledge. For young unemployed women, work focused on owning a business and entrepreneurship, indicating a need to pursue autonomy and flexibility to fulfil social roles, family roles, and responsibilities. These insights underscore that meaningful work for youth fosters their sense of purpose, promotes personal growth, and cultivates a deeper connection to a more significant social or moral cause. Therefore, understanding how youth define and relate to work is crucial for shaping policies and opportunities that align with their aspirations and lived realities.

Role of work

Work plays a crucial role in shaping the identities and aspirations of youth, serving as a cornerstone for achieving financial independence, societal respect, and personal fulfilment. When youth were asked what role work played in their lives in terms of providing meaning, status, respect, and living. For an unemployed female, work means being able to live a "soft life" and enjoy a better quality of life; for a male employed in the mines, it means fulfilling responsibilities and supporting his family financially; and for an unemployed male, it means gaining respect in society through having an income.

Looking at the responses above, the role of work for youth was centred on stability and social contribution. However, for unemployed youth, it was more centred around personal growth and development, as well as gaining societal recognition. The unemployed youths' understanding of the role of work was centred on their priorities. They sought work which solidified their self-efficacy. Magubane (2016) indicated that work is communal and interdependent, tied to fulfilling a "black tax"⁵. These insights emphasise that the meaning and role of work for youth working in the mines is more than a job; it is a pathway to achieving autonomy, respect, and a meaningful life.

These perspectives align with research by the ILO in Mpumalanga (2018), which found that youth view work differently, shaped by their values, expectations of work, and societal expectations. The study highlighted the significance of jobs to youth and their close connection to work goals and social norms.

This emphasises the importance of creating work environments that provide economic rewards, opportunities for personal growth, and avenues for societal contribution. Young people aspire to be homeowners and business owners who can improve their family circumstances by providing a better life for themselves. However, their aspirations are often met with prolonged periods of uncertainty, a phenomenon Ansell, Froerer, and Huijsmans (2022) described as 'waithood'. This term describes the extended transition to adulthood many youths experience, filled with anticipation and ambiguity about whether their goals will materialise.

Many unemployed respondents reported encountering barriers that hindered their ability to achieve their aspirations. These included a lack of education and opportunities, as well as job scarcity. Those who had completed a university education often found it challenging to secure a job. As a result, they resorted to starting informal businesses, such as street vending, hairdressing, or babysitting, to earn an income. Job scarcity and a lack of opportunities affected both the employed and the unemployed, and both groups stated that nepotism was a barrier.

⁵ Black tax is a colloquial term used in South Africa (and some other African countries) to describe the financial support that Black professionals or income earners often provide to their extended families after they start earning an income. It is not an actual government-imposed tax, but rather a socially and culturally defined expectation or obligation. As Mangoma and Wilson-Prangle (2019) note, black tax is "often experienced as a pressure to care financially for people in a broad family or kin network, while at the same time trying to build sustainable wealth".

The employed youth felt stagnant within their professions, while the unemployed believed that nepotism and corruption were major barriers to securing jobs—as one unemployed female respondent cited *“corruption,”* and an employed male explained, *“Eh, you have to have connections to get a job.”*

This reflects structural and systemic problems in the job market. As a result of these challenges, many young people have faced financial hardship, felt a sense of alienation, and in some cases, lost hope in achieving their career goals and aspirations. These barriers can stifle potential and entrench cycles of poverty and disempowerment for young people (Niyimbanira and Madzivhandila 2019; Ansell, Froere, and Huijsmans 2022). Without financial resources and support, young people struggle to access education, training, transportation, and other necessities to pursue their goals.

The impact of climate change on youth aspirations: how environmental shifts affect the ability of the youth to achieve their goals

Climate change is increasingly recognised as an environmental crisis and a significant barrier to the work aspirations of the youth. For instance, Oduniyi (2013) highlights that climate change in Southern Africa has adversely affected agriculture, particularly maize production, due to decreased precipitation and increased temperatures. Such environmental changes threaten basic needs and health, impacting young people’s ability to pursue careers in agriculture and related fields.

This research highlights the threats to youth in Mpumalanga, which are rooted in their livelihoods and health. When young people were asked how climate change impacts their ability to achieve these aspirations, they cited the following:

It affects me, I can’t breathe well sometimes (Unemployed, female).

It affects my chest and eyes (Employed in the mines, male).

It is getting super-hot, the temperatures are no longer the same (Unemployed, female).

Health issues, such as respiratory problems and eye irritation, threaten the well-being of the youth, which can have a ripple effect on the work performance of those employed. For the unemployed, it posed a threat to their livelihoods, as they were unable to engage in farming due to the destruction of their farmland. The continuous reference to farming as a green job by the youth demonstrates a limited understanding of what green jobs mean from a South African perspective, given that the country’s definition of green jobs excludes farming. These lived realities demonstrate that climate change is a significant and multifaceted barrier to youth aspirations, affecting their health, environment, and ability to work or farm. As King (2021) noted, climate change is not just a future risk, but a reality that limits access to opportunities and well-being. In the face of numerous challenges, young people actively sought ways to overcome barriers to achieving their aspirations. They stated that they need financial and emotional support, as well as work opportunities, to overcome obstacles.

Pushing myself, and saving up money (Employed general, Female).

Finding new skills by studying for a short course (Employed, general, Female).

Through getting assistance from the government (Never been employed, Male).

I get some money from home to survive (Never been employed, Female).

The research suggests that climate change has had a significant impact on the aspirations of young people, particularly in communities facing economic hardship and environmental disruption. Many young people reported increasing difficulty in pursuing their goals due to limited financial resources, a challenge exacerbated by climate-related effects such as job losses and reduced agricultural productivity. As a result, there is a growing dependence on family support, which is often insufficient given the broader economic strain. The youth expressed a need for additional assistance, with many identifying government and funding partners as critical sources of support for accessing higher education or starting small businesses. Community and traditional leaders were also seen as essential for providing moral and informal support. In contrast, the donor community was viewed as a potential backer for innovative, climate-resilient ideas and local initiatives. These accounts reflect how climate change is not only transforming the physical and economic landscape but also reshaping the future outlooks of young people and the types of support they consider essential for realising their aspirations.

These findings align with earlier studies that have examined the broader psychosocial and structural factors influencing youth aspirations in South Africa. For instance, Vijay and Fadji (2020) found that emotional closeness to parents and a supportive home environment significantly influence educational ambitions, fostering self-efficacy and resilience among youth. Such emotional and familial support becomes particularly crucial in contexts where climate change and economic stressors threaten to derail educational and career pathways. This study further reflects such dynamics, with many respondents expressing the need for both emotional and financial backing from their families. Access to affordable education remained a recurring concern, especially considering how climate-induced challenges have exacerbated financial instability at the household level.

Moyo (2019) similarly observed that youth in the Royal Bafokeng Nation faced barriers such as a lack of access to career information and limited resources, challenges that parallel those encountered by youth in Mpumalanga's mining communities. The current findings underscore the vital role community leaders can play in bridging these gaps by serving as gatekeepers to resources and offering emotional support. While Moyo (2019) emphasised the value of career guidance and mentorship, the youth in this study revealed an interest in entrepreneurship as a means of achieving economic independence in a changing and uncertain environment. This entrepreneurial inclination reflects both a response to constrained job markets and a proactive effort to reclaim agency in the face of climate-related adversity. Studies by Vijay and Fadji (2020) and Hartas (2016) further affirm that youth aspirations are strongly linked to self-belief and general well-being, both of which are influenced by personal and environmental factors. Overall, the data suggest that youth in affected communities are not passively absorbing the impacts of climate change but are

actively seeking ways to build their futures, balancing personal effort with available support systems across family, community, and institutional domains.

Youth perceptions about climate change and green jobs

Respondents demonstrated awareness of climate change through its impact on their communities. The majority expressed concern about the visible effects of climate change, including extreme weather patterns, reduced agricultural productivity, ozone layer depletion, and deteriorating air quality. One male participant noted, *'The more we pollute the earth... the climate changes,'* reflecting an intuitive, if not technically precise, grasp of the concept. Others described it in more visual or localised terms, such as *'change in weather conditions'*, revealing an indirect awareness shaped by lived experience. Others stated that,

You see how hot it is now? It's not like before. That's climate change, I think
(Employed, Mining Sector, Male).

Climate change? I think it's when the weather is messed up, like when it's cold in summer or too much heat (Unemployed, Female).

The relationship between climate change and green jobs remains a grey area among Mpumalanga youth, with most interviewees struggling to draw a direct connection. While some had heard of green jobs and associated them with renewable energy or electric vehicles, others relied on vague impressions, often equating green work with general environmental care.

Maybe green jobs are those that keep the place clean or planting trees? I'm not sure, really (Employed, General Sector, Male).

Green jobs? Yoh, not really sure. Maybe like cleaning up the environment?
(Employed, General Sector, Female).

A few participants noted that green jobs might be about *'creating clean environments'* or *'taking care of nature'*, indicating a partial grasp shaped by media or community exposure. For many, especially those who were unemployed or worked in extractive sectors, green jobs were unfamiliar or seemed disconnected from their everyday struggles. Even when the youth could identify environmental problems, the idea that employment could emerge from addressing these issues remained largely abstract.

Research findings reveal that many young people hold misconceptions about green jobs, often associating them with traffic signals or automation technologies, for example, one unemployed male described green jobs as being "just like the robot, red, green" at intersections.

Others assumed that green employment was related to work near mines or in the mining industry, presumably due to the impression that ‘green’ referred to the mineral-rich character of certain places or the colour of uniforms used in mining activities. Such interpretations demonstrated a lack of clarity and awareness regarding the ecological or sustainability-related nature of green jobs.

Encouragingly, some respondents closely identified green jobs as environmentally focused roles, mentioning areas such as recycling, renewable energy, sustainable agriculture, and conservation:

I think about the people who work with eco (Employed, Mining Sector, Male).

I think it is agriculture or planting (Employed, General Sector, Female).

These responses closely align with international definitions, highlighting the environmental restoration function of green jobs (Esposto and Annakis 2016; ILO 2018).

Respondents offered three dominant interpretations of green jobs: protective, misconceived, and eco-friendly. For some, green jobs implied protection and life-saving roles. Green was understood metaphorically, tied to safety and well-being, and was linked to occupations such as paramedics, firefighters, or emergency workers. This interpretation reflected the semantic flexibility of the term, even though it diverged from mainstream definitions, which focus on minimising ecological damage (Esposto and Annakis 2016, 220).

Respondents in the study offered a wide range of opinions about what constitutes a green job and the level of skills required. The respondents classified green jobs into two categories, low-skilled and high-skilled. However, there was a common belief that many green jobs are low-skilled and accessible without formal education, which is contradictory to the occupational analysis that highlighted that green jobs require and demand university-level or other post-secondary qualifications, indicating a lack of knowledge about green jobs among Mpumalanga youth.

Several respondents associated green jobs with rubbish collection, recyclables sorting, and general environmental maintenance. Comments like “no qualification” or “fewer skills” were often mentioned in this context. This narrow classification not only reveals a limited understanding of the diversity within the green economy but also highlights the broader issue of low awareness and knowledge about the full spectrum of green job opportunities.

The definition of green jobs varied among respondents due to differences in their employment status. The unemployed youth were not acquainted with technical or specialised green jobs, while those employed in the mining sector were able to relate to these technical jobs. This suggests that skills and job titles currently held by the youth may have a direct bearing on the exploration of green job opportunities, as unemployed youth might feel that such technical jobs were out of their reach. This limited view can inadvertently discourage young people from aspiring to or preparing for careers in emerging green industries, which require higher levels of skill and education. The findings suggest that without targeted information dissemination, education, and skills development initiatives, many of the youth may continue to overlook or misunderstand the transformative potential

of green jobs within South Africa's just transition framework.

A few respondents reflected on high-skilled green jobs, particularly in roles related to renewable energy, sustainable agriculture, or environmental science. These respondents spoke of a need for '*more skills*' and acknowledged a '*skill gap*' that could potentially exclude untrained workers from emerging opportunities:

Green jobs like solar installation or working on electric vehicles, that's where the future is. But not everyone has the training to do that (Employed, Mining Sector, Male).

Most people I know don't qualify for those skilled jobs. They didn't finish school or study engineering (Unemployed, Female).

A thread of concern also emerged around the idea that green jobs might displace traditional employment if current workers are not upskilled. This supports the findings from the occupational analysis, highlighting the need for upskilling to ensure an equitable transition. As evidence suggests, those without a tertiary education may be marginalised and have limited opportunities. At the same time, others saw green jobs as empowering, particularly in community recycling and urban farming, where respondents linked these roles to skill development and personal growth.

There was considerable variation in how respondents viewed the earning potential of green jobs. A substantial number believed that green jobs in the informal sector, such as low-skilled jobs like street cleaning or recycling, offer low pay, and the respondents undervalued such jobs, indicating a lack of interest in them. They described such jobs as unattractive and unhygienic, with some respondents frowning as they described them.

I wouldn't want to be in that kind of job; it looks dirty, and people don't respect you (Unemployed, Female).

You can't feed your family with money from collecting bottles or cleaning drains. That's for people who have nothing else (Employed, Mining Sector, Male).

While the occupational analysis revealed only a few significant differences in skill levels and requirements between green and non-green jobs, the responses from participants suggested that perceptions of green work were shaped more by social and cultural attitudes toward the work itself, rather than its technical content. For many respondents, green jobs were not seen as aspirational or dignified forms of employment. The respondents' sentiments revealed how social stigma and perceived status significantly influenced the valuation of certain occupations, regardless of their actual skill demands or societal importance. Such views revealed a common misconception that green jobs, particularly those associated with waste management and environmental clean-up, are informal, low-paying, and only suitable for individuals with no other economic options.

These perceptions highlighted an existing stigma attached to waste management

professions, which can directly translate into a lack of interest and low uptake of such professions among young people who lack the training to qualify for high-skilled roles. For the transition to be more equitable, such industries should consider investing in technology to automate some of the work deemed ‘dirty’.

These perceptions reflect the different lenses through which policymakers and young people view the green economy. While policy narratives rightly emphasise green jobs as part of a high-growth, innovation-driven future, many of the youth, especially those with limited access to education and training, associate green work with low-status, manual, or dirty occupations. This tension highlights the importance of addressing not just awareness gaps but also structural barriers and job design. A humane and forward-looking approach would involve leveraging technological advancements to automate undesirable tasks, improve working conditions, and reposition green jobs as aspirational roles that offer dignity, stability, and growth, especially for marginalised young people. Inclusive messaging and practical career pathways must go hand in hand with modernising the sector.

Alternatively, there was recognition that specific technical green jobs which were highly skilled, such as solar panel installation and renewable energy engineering could be lucrative. Young people found these jobs attractive and interesting because they believed they offered stable work and remuneration:

I've seen those people working with solar, and I think it pays well, but you must be trained (Employed, General Sector, Female).

The thing with these new green jobs, like solar or wind power, is that they look professional, not like pushing a cart collecting bottles (Unemployed, Male).

Young people's job preferences appear to be strongly influenced by their interpretations of what work should represent, particularly the desire for stability, professionalism, and social mobility. Work was not only viewed as a means of earning a living, but also as a pathway to social recognition and self-worth. Within this framework, green jobs were viewed more positively when associated with technical sophistication, formal training, and visible professionalism, such as roles in solar or wind energy. These types of jobs were perceived to offer higher social status. They were distinguished from other forms of green work, such as waste collection or street-level recycling, which were often viewed as informal, precarious, and lacking in dignity. This dichotomy in perception suggests that youth are more likely to aspire to green jobs when they align with established ideals of respectable employment, those that require training, offer long-term prospects, and are visibly associated with modern technology and infrastructure. As such, promoting green jobs as skilled, professional, and future-oriented roles could play a crucial role in reshaping youth attitudes and increasing uptake in the green economy.

Research indicates a modest wage advantage for those in green sectors, approximately 7 percent higher than their non-green counterparts (Jackman and Moore 2021, 294-295), particularly for more technical jobs. However, the youth stated they are unqualified to take up these technical jobs as they lack the required skills and qualifications.

Despite concerns about pay, many respondents viewed green jobs positively in terms of environmental contribution and safety. They associated such work with preserving community health, improving local cleanliness, and contributing to food security, particularly in sustainable agriculture. These are some of the responses from the youth when asked to describe green jobs:

Green jobs help reduce harm to the environment (Unemployed, Male).

Green jobs are things like renewable energy, like working at a solar plant or even at companies that focus on clean energy. I know there are jobs like that. It's good for the environment (Employed, Mining Sector, Male).

I am thinking of the environment, recycling, and plants (Employed, General Sector, Female).

Green jobs were frequently seen as socially beneficial, and respondents often equated them with structured roles in conservation or disaster relief. According to respondents, green jobs carry moral weight and are perceived as ‘good jobs’ that promote environmental sustainability. However, two female respondents revealed that although they valued the ecological contribution of green jobs like refuse collection, they found the work undesirable due to the stigma and physical demands, suggesting a classed and gendered perception of ‘dirty work’.

Respondents' attitudes toward green jobs varied significantly, influenced by cultural perceptions, local exposure, and existing employment opportunities. While some participants expressed positive attitudes towards green jobs, many viewed green jobs as unstable or unattractive due to stigma or poor working conditions. This primarily referred to waste-related roles, which they considered “dirty” or socially demeaning. Cultural barriers and class-based stigma, particularly in the context of waste management, continued to hinder uptake (Cock 2019; Makgetla 2021). For example, some young people said,

Hayiii, it's, no, I can't deal with the rubbish (Employed, General Sector, Female).

However, others expressed an interest in green jobs, especially in renewable energy or climate-smart agriculture, when such roles aligned with their skills or community values. One part-time male farmworker, for instance, was enthusiastic about environmentally friendly farming. These responses suggest that alignment with lived realities can make green jobs more appealing. As highlighted by Nhamo and Mjimba (2020), for green jobs to be desirable, they must offer more than just environmental benefits; they must be safe, well-paid, and provide long-term career growth.

Despite the identified barriers, respondents offered practical ideas for making green jobs more attractive to young people. A recurring theme was the role of both formal and informal education in raising awareness and building relevant skills. This insight reinforces findings from the occupational analysis, which suggested that formal education alone does not distinctly define new and emerging green occupations. Instead, many green jobs can be accessed and effectively performed through targeted on-the-job training and vocational pathways. These perspectives underscore the importance of diversifying entry points into

green work and designing learning models that reflect the realities and capacities of young people, particularly in under-resourced communities. There was widespread support for integrating environmental education and green career guidance into school curricula. From an informal perspective, there is a need to utilise the existing structure to raise awareness, as respondents believed that early exposure could help shift negative attitudes towards green jobs.

Maybe at schools or community meetings, they can talk more about what these jobs are and how they help the environment (Employed, Mining Sector, Male).

If they can start at school, maybe kids will grow up knowing it's important to work with nature (Unemployed, Male).

There was also strong support for practical training, including internships, workshops, and learnerships, especially if they are free and accessible to rural youth. Financial support, such as bursaries and small business grants, was seen as critical to helping youth enter the green economy, with the role of government being emphasised repeatedly. Respondents called for investment in green industries, public education campaigns, and support for small-scale green initiatives. These calls align with ILO recommendations for promoting green jobs through inclusive and well-structured policy frameworks (ILO 2018). Finally, respondents stressed the need to reframe green jobs, particularly stigmatised roles in waste management, as dignified and essential. Changing public perceptions can play a significant role in encouraging uptake (ILO 2021).

People say recycling is for poor people, but if the pay were good and the work respected, they would do it (Unemployed, Female).

They must give us learnerships that teach green skills, solar, recycling, all of that (Employed, General Sector, Female).

Workshops can help, especially in rural areas. If you train people properly, they'll take pride in their work, even recycling (Employed, Mining Sector, Male).

5. Challenges and opportunities for youth within the green sector

This section examines the accessibility of green jobs for youth, the challenges they encounter, the available opportunities, and the skills necessary to succeed in the green job market. The emerging themes are related to awareness, preparedness, and perceptions of green employment. Respondents revealed a complex landscape characterised by limited access to education and training, gender-based expectations, misconceptions about green careers, and structural barriers, including contract work and economic instability. Despite these challenges, many young people expressed interest and motivation in pursuing green jobs.

Accessibility

While creating green jobs is essential, it is equally important that these jobs are accessible to all. Several significant barriers hinder youth from accessing such employment, including their heightened vulnerability to climate change, insufficient knowledge about green job

opportunities, and unstable job conditions (Mwaura and Glover 2021). A recent global survey found that many young individuals feel unprepared to engage in the green economy, which is vital for addressing the climate crisis (Plan International 2022). Further, they found that only 29 percent of youth aged 15 to 30 believed they possessed the necessary skills for jobs to combat climate change, with young women reporting lower confidence levels than their male counterparts. Our research supports this finding, revealing that many of the youth, particularly women, believed they could not access desirable career paths, such as those in renewable energy engineering. They believed these positions required a strong background in science and perceived the work as challenging due to the demanding work conditions. Some of the female respondents stated that,

It requires more skills, it wants Science, Math, and to know electricity (Female, Unemployed).

The problem is that I wouldn't qualify to be an engineer. It requires you to be educated, if you are not educated, just like me, you won't get the job... (Female, Unemployed).

Low confidence among young women was reported when exploring technical green jobs for employment. They expressed a lack of confidence in taking on such roles. This implies that young women are more vulnerable compared to their male counterparts in seeking such roles, as societal norms and expectations are attached to technical roles, with men being viewed as a better fit. Therefore, young women opted for less technical careers, with some choosing to pursue careers as refuse collectors, highlighting that this option is more accessible for self-employment. They noted that experience is unnecessary for effectively managing waste and emphasised the importance of maintaining a clean environment. This viewpoint aligns with societal norms that attach care work, such as cleaning and maintaining tidy spaces, primarily to women.

Moreover, a significant challenge the youth encountered when pursuing green jobs was the lack of skills for the more technical roles in this sector. As a result, many of the youth found it difficult to pursue and secure employment in green industries, which can lead to long-term unemployment. The lack of skills often discouraged them from seeking opportunities in the green economy and encouraged them to explore other career goals.

Youth expressed concerns that green jobs, while representing new opportunities, often require different skills and higher levels of experience, making them difficult to access without significant upskilling. This challenge was particularly pronounced among young mine workers, some of whom feared job losses during the transition to a greener economy. They recognised the urgent need to acquire new skills to remain employable and adapt to the changing labour market. As a result, they believed that this change will exacerbate the already high unemployment rates, particularly in Mpumalanga, where many young people have limited access to education and skills training. Addressing these concerns is critical in ensuring a just transition.

The biggest issue for the youth was to find roles that matched their interests and skill set, since 'green jobs' are relatively new. Notably, a respondent stated that,

Ehh, it would be difficult, because some of these require you to have qualifications and certificates for that job (Male, Unemployed).

Securing green jobs can be challenging due to a lack of necessary skills and training. As a result, youth struggle to find employment within this sector. The prolonged transition from education to the workforce can be attributed to various factors, notably economic restructuring, financial crises, and changes in social protection systems, all of which need to be addressed in the South African context. According to Schultz, skills and knowledge represent forms of human capital essential for future investments (Aceleanu, Serban, and Burghilea 2015).

Challenges such as skills, experience, and specific job requirements are perceived as barriers that often impede young people from securing jobs in the green sector (Mwaura and Glover, 2021). Specific roles in this field, such as those in renewable energy installation or environmental consulting, usually require prior experience and skills, posing additional challenges for young job seekers or individuals transitioning from other industries (Mwaura and Glover 2021). This reflects some of the responses from respondents when asked whether they believe they will be able to get the jobs they find attractive. Many males who had never been employed doubted their chances of obtaining these roles due to a lack of required experience and skills.

But if I have less information about it, then I cannot get that job (Unemployed, Male).

Although male mine workers selected similar jobs, they felt confident about their prospects, citing their prior experience in engineering and plant technician roles as an advantage.

When you have studied for that job, there are chances that you can get that job (Employed in the Mining sector, Male).

The gap between the skills and knowledge the youth currently possess, and the demands of the green labour market, presents a significant barrier to their successful transition into emerging sectors. Many young people expressed a strong interest in pursuing careers such as wind, solar, and hydro plant technicians or renewable energy engineers. However, they acknowledged that without targeted support and structured learning pathways, these aspirations would remain out of reach. Unemployed youth in Mpumalanga felt underprepared for green jobs and emphasised the need for government-led training and education programmes to bridge this gap. Even employed young mineworkers recognised that their current skillsets, shaped by the coal industry, were misaligned with the technical competencies required in the green economy, leaving them uncertain about their ability to pivot without substantial reskilling support.

Africa's youth unemployment crisis is a complex issue. Many of the continent's growing working-age population cannot find decent work in economies often afflicted by jobless growth (Aceleanu et al. 2015). The minority of youth fortunate enough to find a job are typically underemployed or in poor working conditions with no job security (Aceleanu et al. 2015).

Many previously employed young people highlighted high insecurities around the contract

employment system. They raised concerns about failing to secure new jobs as they have struggled and remained unemployed. This issue was particularly prevalent in the mining sector in Mpumalanga, where the contract employment system dictates that after being employed for a year, individuals must wait for others to be hired before they can have another chance to participate in the programme.

Due to the high unemployment statistics, the youth often found themselves caught in a cycle of searching for jobs with very little support. Respondents noted that securing employment demands significant financial and social resources, which many young people lack, a concern that has been emphasised in this report. Additionally, they expressed a desire for encouragement without facing judgment regarding their unemployment status.

Opportunities for the youth

Green jobs will offer employment and empower youth to shape a future centred on ecological responsibility and social impact (Mwaura and Glover 2021). The research indicated that career development is vital for young South Africans living in Mpumalanga province to encourage youth to engage with the green economy. Research indicates that many youth are becoming increasingly aware of the significance of green job-related skill-building projects in their future careers and are attracted to fields that provide economic stability and environmental benefits. The data collected during the fieldwork reveal that sectors such as solar energy are particularly appealing and require educational support and funding, as they align with global climate goals and offer promising job growth opportunities (Table 8).

Table 8: Young people's preferred sector and type of jobs

<i>Preferred sector</i>	<i>Types of jobs selected</i>
Industrial	Wind plant technician Solar plant technician Hydroelectric plant technician Renewable energy engineer
Environmental	Wildlife office/park warden
Construction	Insulation contractor, installer

There was a strong preference for the industrial sector compared to other sectors, perhaps unsurprising given that 70 percent of our research sample were male. Male respondents were more likely than their female counterparts to select industrial sector occupations like wind and solar plant technicians or renewable energy engineers. In contrast, young women seemed to prefer roles outside this sector. These choices appear to be shaped by gender expectations, flexible working hours, and the pursuit of better life opportunities. This highlighted a noticeable gender gap, suggesting that industrial jobs are still perceived as male-dominated spaces.

Some women associated green jobs like recycling or refuse collection with dirty or demeaning work, yet still viewed these as opportunities to earn an income, especially given the lack of opportunities for women in the industrial sector. While green jobs are gaining

traction among youth, gendered perceptions continue to shape access and aspiration particularly in industrial roles. Women face cultural and structural barriers but still show resilience and adaptability by pursuing roles aligned with their realities, aspirations, and available opportunities.

Extensive research indicates that education significantly influences youth employment outcomes. It enhances the likelihood of securing employment, facilitates access to higher income levels, and enables youth to adapt more readily to the evolving demands of the green jobs labour market. Nevertheless, addressing the issue of youth and green job opportunities requires a comprehensive approach that integrates education, vocational training, and continuous skill development with effective job creation strategies. As most youth perceive their career development through green opportunities within youth-led and skill-building initiatives, such alignment will adequately prepare young individuals to meet the emerging requirements associated with the transition to a green economy.

While short-term unemployment may be a typical facet of an individual's career trajectory, addressing the challenge of long-term youth unemployment must be prioritised globally, including in South Africa. Failure to tackle this issue may result in enduring economic ramifications (Pociovălișteanu, Novo-Corti, Aceleanu, Șerban, and Grecu 2015). Findings from the research indicate that youth in South Africa recognise the importance of aligning green job initiatives and youth employment efforts with the unique dynamics of provincial labour markets. Their perspectives suggest that understanding the distinct economic and employment contexts within each province is key to identifying relevant entry points into the green economy.

Education and access to funding for skill-building opportunities were consistently highlighted as influential factors shaping youth's ability to transition from school to work. These elements appear to play a critical role in how youth perceive their readiness to participate in emerging job markets, including those associated with climate adaptation and sustainable development. The emphasis on practical training and financial support reflects broader concerns about accessibility and equity in workforce preparation, particularly where structural barriers limit opportunities for upward mobility.

Youth unemployment presents distinct challenges that differ from those of other age groups in the pursuit of skills needed to access green jobs. Youth respondents in this research often faced difficulties finding green jobs because employers cut back on investment in skill development and may limit their offerings in terms of on-the-job training programmes. Strategic partnerships between green enterprises and post-secondary education institutions are emerging as an important mechanism for preparing the next generation for the green economy. These collaborations have the potential to shape curricula that are aligned with evolving labour market demands, particularly in sectors driving sustainability. By integrating practical industry knowledge with academic training, such partnerships contribute to building a workforce equipped for green transitions.

The rise of green jobs presents a key opportunity to align South Africa's education and training systems with the demands of a low-carbon economy. In provinces like Mpumalanga, many of the youth currently lack the skills needed to access these roles.

However, the transition offers a chance to develop targeted pathways through basic, higher, and vocational education. Strengthening these connections can better prepare youth for future employment. This shift is not only about environmental goals but also about economic inclusion. Anticipating future skills needs will be crucial. Green jobs can drive both sustainability and opportunity.

6. Conclusion and policy recommendations

South Africa's transition away from coal energy raises concerns about increased joblessness and increasingly precarious livelihoods for youth, particularly in the Mpumalanga province. This research investigated the opportunities for youth through the lens of green jobs and assessed the feasibility of these opportunities in the current South African context.

This research demonstrates that the green transition presents South Africa with an historic opportunity to build a more inclusive and equitable economy. However, success depends on placing youth voices, capacities, and needs at the centre of planning and implementation. Young people in Mpumalanga are not passive recipients of change. They are ready to act as agents of transformation, but require access to resources, training, and institutional support. The quantitative research began by identifying the employment opportunities that most suited the existing skill set of both currently employed and currently unemployed youth in Mpumalanga. Using occupational relatedness as a proxy for transferability of skills, several green jobs were identified as potential opportunities for youth. However, it was noted that green jobs may require substantially different skills from those currently held by Mpumalanga youth, thus decreasing the feasibility of shifts into these occupations.

The qualitative research component aimed to provide further insight into the feasibility of green jobs as an employment solution for youth. Through a semi-structured interview process, 132 youth based in Mpumalanga were interviewed, and their views on green jobs, climate change, and career aspirations were captured. Key findings included that youth generally did not understand what was meant by the term green jobs; that a stigma existed around low-skilled green jobs being dirty; and that high-skilled green jobs, though desirable, were generally unattainable due to a lack of skills, qualifications, and/or social connections. This finding from the qualitative research were similar to those from the quantitative research, highlighting the need for policies relating to skills-based interventions to ensure the success of green jobs as a tool to ensure a just transition.

The findings underscore that a truly just transition must be youth-centred, gender-responsive, and community-driven. By aligning green jobs policy with the lived realities and aspirations of young people, South Africa can ensure that its energy transition generates not only environmental benefits but also meaningful economic opportunities for its most vulnerable populations.

Based on the analysis presented above, the following conclusions are worth noting. As an initial policy intervention, a sensitisation and education of young people as to what green jobs are would be vital. Young people's understanding of green jobs is limited, and campaigns such as public works programmes, community partnerships, or social media campaigns to educate young people about green career opportunities may increase interest

and uptake of these jobs. As an example, those youth in extractive sectors, while aware of the environmental challenges being faced, were unaware of the prospect of possible employment opportunities that could be generated by solving these problems. This speaks to a need to demystify green jobs and enhance young people's understanding of the types of employment opportunities that may be created through the green transition.

Young respondents further indicated that additional government intervention to support green initiatives may assist in building skills and easing the transition into green jobs. Particularly, some respondents highlighted the need for funding opportunities, such as small business grants, that would help support green initiatives in the business environment. Furthermore, young people suggested a government partnership with educational or commercial institutions to support learnerships and apprenticeships that may assist in providing practical skills for green jobs. These learnerships would serve the dual purpose of upskilling or reskilling workers who may need it, as well as exposing young people to green jobs that are perceived as stable and fulfilling.

Finally, it is recommended that the educational system develop and implement specialised curricula in secondary and post-secondary educational institutions that focus on green skills, such as renewable energy, waste management, and environmental technologies, including both technical and soft skills relevant to the green economy. Additionally, it is important to further promote STEM (Science, Technology, Engineering, and Mathematics) education, particularly among young women, to address gender disparities and misconceptions about the requirements for green jobs. Communities should be informed through campaigns to clarify what green jobs entail and the variety of opportunities available, dispelling myths such as the idea that technician roles are only for individuals with advanced science backgrounds or that certain green jobs are restricted to specific genders. Furthermore, it is essential to provide career counselling and mentorship programmes that connect youth with professionals in the green sector. This will help them understand career pathways and the qualifications needed for success in these fields and ease the transition away from coal energy and truly make it a Just Energy Transition.

This research demonstrates that South Africa's green transition represents a critical test for whether the country can simultaneously address climate imperatives and structural inequality. The evidence suggests that with appropriate policy interventions, targeted skills development and genuine youth participation in transition planning, green jobs can serve as a vehicle for both environmental protection and economic inclusion as demonstrated by the recommendations below. However, without deliberate action to address the barriers identified in this study, the transition risks reproducing existing patterns of exclusion. The window for implementing these interventions is narrowing as the transition gains momentum, increasing the need for immediate policy action.

Policy recommendations

1. Launch youth green jobs awareness campaigns - to address knowledge gaps

- Partner with career expos and media outlets to run youth-friendly campaigns on green jobs and climate literacy.
- Government should launch a digital and community-level campaign showcasing local green job stories, with a particular focus on Mpumalanga.

Campaigns will help demystify green jobs, highlight career pathways, and showcase the success stories of young people in green employment.

2. Green entrepreneurship support -to address funding gaps

- Government, through the Department of Small Business Development and the National Youth Development Agency, for example, should establish a ring-fenced fund to support young people in developing youth enterprises.
- Resources should be channelled towards township and rural-based green start-ups, with simplified application processes and mentorship support.

3. Roll out green apprenticeships and learnerships to address the skills mismatch gap.

- In partnership with industry, DHET, the SETAs, and post-secondary education and training institutions should expand offerings in terms of green skills learnership programmes in solar, water, waste, and nature-based restoration.
- Target participation in these programmes towards youth from coal-affected areas, especially women and out-of-school youth.
- Deploy mobile training units and community-based training centres to rural and peri-urban areas.

4. Revise education curricula to include green skills- addressing the absence of green economy pathways in secondary and vocational education.

- The Department of Basic Education should incorporate green job literacy into primary and secondary school education, ensuring appropriate pathways for learners to proceed into employment in green jobs or post-secondary education and training opportunities to prepare young people for employment in green jobs.
- Emphasise short courses, bridging programmes, and hybrid formats.

5. Inclusive access, mentorship, and social support - to address gendered misconceptions and lack of support systems.

- Support local authorities, youth development centres, and community organisations to host quarterly Green Opportunity Dialogues.
- Scale successful models that offer structured mentorship, site visits, and job shadowing.
- Support participation in these opportunities for marginalised groups. This might include, for example, the provision of childcare support in training centres targeting young mothers, or subsidisation of the costs of participation.
- Establish a national Youth-Green Mentor Directory, drawing on support from volunteer professionals.

References

- Aceleanu, M.I., Serban, A.C. and Burghilea, C. 2015. "Greening the youth employment—a chance for sustainable development." *Sustainability*, 7 (3): 2623-2643.
- Alvarez, F. 2024. "Are green jobs different?" *Development Bank of Latin America and the Caribbean*. (CAF)
- Ansell, N., Froerer, P. and Huijsmans, R. 2022. "Youth's aspirations in an uncertain world: Taking control of the future?" *Sociological Research Online*, 27 (4): 795-802.
<https://journals.sagepub.com/doi/full/10.1177/13607804221133116>
- Bela Balassa. 1965. "Trade Liberalisation and 'Revealed' Comparative Advantage." *The Manchester School* 33, no. 2 (1965): 99–123. <https://doi.org/10.1111/j.1467-9957.1965.tb00050.x>.
- Bhorat, H., Kupeta, T., Martin, L. and Steenkamp, F. 2024. *Just transition and the labour market in South Africa. Measuring individual and household coal economy dependence*. Research Report: Oxford Martin Programme on the Future of Development.
- Bulmer, E.R., Pela, K., Eberhard-Ruiz, A. and Montoya, J. 2021. *Global perspective on coal jobs and managing labour transition out of coal*. World Bank, Washington, DC.
<https://www.worldbank.org/en/topic/extractiveindustries/publication/global-perspective-on-coal-jobs-and-managing-labor-transition-out-of-coal>
- Buthelezi, K and Sikhakhane, S. 2024. "South Africa: SA's youth losing hope in State's ability to help them achieve their dreams." *Daily Maverick*, June 19, 2024. [SA youth losing hope and trust in State](#)
- Cock, J. 2019. Resistance to coal inequalities and the possibilities of a just transition in South Africa. *Development Southern Africa*, 36(6), pp.860-873.
- Consoli, D., Marin, G., Marzucchi, A. and Vona, F. 2016. Do green jobs differ from non-green jobs in terms of skills and human capital? *Research Policy*, 45 (5): 1046-1060.
<https://doi.org/10.1016/j.respol.2016.02.007>
- Department of Environmental Affairs and Tourism. 2008. *A National Framework for Sustainable Development in South Africa*. Available:
https://www.gov.za/sites/default/files/gcis_document/201409/nationalframeworkforsustainabledevelopmenta0.pdf
- Department of Higher Education and Training (DHET). 2013. *Guidelines: Organising Framework for Occupations (OFO) 2013*. [Online]. Available:

<https://www.dhet.gov.za/Publications/OFO%20Guideline%20-%202013.pdf>

Department of Higher Education and Training (DHET). 2021. Complete OFO. [dataset]. Available: <https://www.merseta.org.za/document/ofo-codes-vesion-2021/>

Eberhard, A. and Naude, R. 2017. *The South African renewable energy IPP procurement programme: Review, lessons learned & proposals to reduce transaction costs*. South Africa: University of Cape Town, Graduate School of Business. Available: https://www.gsb.uct.ac.za/files/EberhardNaude_REIPPPReview_2017_1_1.pdf

Eberhard, A., Kolker, J. and Leigland, J. 2014. *South Africa's renewable energy IPP procurement Programme: Success factors and lessons*. World Bank Group, Washington, DC. Available: <http://hdl.handle.net/10986/20039>

Economic Development Department (EDD). 2011. *New Growth Path: Accord 4: Green Economy Accord*. Pretoria: Economic Development Department. Available: https://www.gov.za/sites/default/files/gcis_document/201409/accordgreen2.pdf

Eskom. 2021. Coal in South Africa. Press Release. [Online]. Available: <https://www.eskom.co.za/wp-content/uploads/2021/08/CO-0007-Coal-in-SA-Rev-16.pdf>

Esposto, A. and Annakis, J. 2016. From standard jobs to “green jobs”: A strategy for developing markets. *Corporate Ownership and Control*, 14(1), pp.219-229. <https://pdfs.semanticscholar.org/7bb5/c0ef852c913579541ddea1db1d8ccc16fa9d.pdf>

Hartas, D. 2016. Youth's educational aspirations: Psychosocial factors and the home environment. *Journal of Youth Studies*, 19(9), pp.1145-1163.

Hill, R., Neethling, L. and Oosthuizen, M. 2024. From Coal to Chlorophyll: Identifying Green Job Opportunities for Youth during South Africa's Just Transition. Development Policy Research Unit Working Paper 202406. DPRU, University of Cape Town.

International Labour Organisation. 2016. Employment . Available <https://www.ilo.org/resource/employment-1>

International Labour Organisation. 2018. World Employment Social Outlook: Greening with jobs . Available: https://www.ilo.org/sites/default/files/wcmsp5/groups/public/@dgreports/@dcomm/@publ/documents/publication/wcms_628654.pdf

International Labour Organisation. 2021. What is a green job . Available: <https://www.ilo.org/topics-and-sectors/just-transition-towards-environmentally-sustainable-economies-and-societies/what-green->

[job#:~:text=Green%20jobs%20are%20decent%20jobs,renewable%20energy%20and%20energy%20efficiency.&text=Green%20jobs%20help:energy%20and%20raw%20materials%20efficiency](#)

- Jackman, M. and Moore, W. 2021. Does it pay to be green? An exploratory analysis of wage differentials between green and non-green industries. *Journal of Economics and Development*, 23(3), pp.284-298. <https://www.emerald.com/insight/1859-0020.htm>
- King, N. 2021. Climate change implications for SA's youth. *Expert Report Commissioned by CER*.
- Magubane, N.N. 2016. *Black tax: The emerging middle class reality*. University of Pretoria (South Africa).
- Makgetla, N. and Patel, M. 2021. The coal value chain in South Africa. *Trade & Indust. Pol. Strat. Pretoria*.
- Mangoma, A., and Wilson-Prangley, A. 2019. Black Tax: Understanding the financial transfers of the emerging black middle class. *Development Southern Africa* 36(4): 443-460. <https://doi.org/10.1080/0376835X.2018.1516545>.
- Manuti, A., Curci, A. and Van der Heijden, B. 2018. The meaning of working for youth: the case of the millennials. *International Journal of Training and Development*, 22(4), pp.274-288.
- Mealy, P. and del Rio-Chanona, R.M. and Farmer, J.D. 2018. *What You Do at Work Matters: New Lenses on Labour* (March 18). Available at SSRN: <http://dx.doi.org/10.2139/ssrn.3143064>
- Montt, G., Wiebe, K. S., Harsdorff, M., Simas, M., Bonnet, A. and Wood, R. 2018. Does climate action destroy jobs? An assessment of the employment implications of the 2-degree goal. *International Labour Review*, 157: 519-556. <https://doi.org/10.1111/ilr.12118>
- Moyo, M. 2019. *Youth unemployment in the royal bafokeng nation, South Africa: The interplay of perceptions, lived experiences, aspirations and choices*. University of Johannesburg (South Africa).
- Mwaura, G. and Glover, D. 2021. Green jobs for youth in Africa: Work in progress. *Include Knowledge Platform: Leiden, The Netherlands*.
- National Planning Commission [NPC]. 2012. *National Development Plan 2030: Our future – make it work*. Available: https://www.gov.za/sites/default/files/gcis_document/201409/ndp-2030-our-future-make-it-workr.pdf

- Nel, E., Marais, L. and Mqotyana, Z. 2023. The regional implications of just transition in the world's most coal-dependent economy: The case of Mpumalanga, South Africa. *Frontiers in Sustainable Cities*, 4, p.1059312.
- Nhamo, G. and Mjimba, V. 2020. *Scaling up SDGs implementation: Down the road to fast approaching 2030. In Scaling up SDGs Implementation: Emerging Cases from State, Development and Private Sectors (pp. 3-19)*. Cham: Springer International Publishing.
- Niyimbanira, F. and Madzivhandila, T.S. 2019. "Analysis of socio-demographic factors influencing youth employment status in South Africa: the case of three local municipalities in Mpumalanga Province." *Journal of Public Administration*, 54 (1): 52-62.
- O*NET. 2024. *O*NET OnLine*. [dataset]. Available: <https://www.onetonline.org>.
- Oduniyi, O.S. 2013. *Climate change awareness: a case study of small scale maize farmers in Mpumalanga province, South Africa*. PhD diss., University of South Africa.
- Plan International. 2022. "Youth unprepared for jobs in the 'Green Economy'." *Global survey*. Plan International, August 15, 2022, <https://plan-international.org/news/2022/08/15/young-people-unprepared-jobs-green-economy/>.
- Pociovălișteanu, D.M., Novo-Corti, I., Aceleanu, M.I., Șerban, A.C. and Grecu, E. 2015. "Employment policies for a green economy at the European Union level." *Sustainability*, 7 (7): 9231-9250. <https://doi.org/10.3390/su7079231>.
- Presidency, The. 2020. *The South African Economic Reconstruction and Recovery Plan*. Available: https://www.gov.za/sites/default/files/gcis_document/202010/south-african-economic-reconstruction-and-recovery-plan.pdf
- Presidential Climate Commission (PCC). 2022a. A framework for a just transition in South Africa. Draft for public comment. Pretoria. Presidency. Republic of South Africa.
- Presidential Climate Commission (PCC). 2022b. South Africa's First Nationally Determined Contribution Under the Paris Agreement: Updated September 2021. Presidency. Republic of South Africa.
- Reddy, V. and Fadiji, A.W. 2020. *Learners' educational aspirations in South Africa: The role of the home and the school*. *South African Journal of Education*, 40(2), pp.1-13
- Republic of South Africa. 1996. Constitution of the Republic of South Africa, 1996. Pretoria: Government Printer.
<https://www.justice.gov.za/legislation/constitution/saconstitution-web-eng.pdf>

- Statistics South Africa. 2023a. Quarterly Labour Force Survey 2023: Q1 [dataset]. Version 1. Pretoria: Statistics South Africa [producer], 2023. Cape Town: DataFirst [distributor], 2023. DOI: <https://doi.org/10.25828/afb2-pn20>
- Statistics South Africa. 2023b. Quarterly Labour Force Survey 2023: Q2 [dataset]. Version 1. Pretoria: Statistics South Africa [producer], 2023. Cape Town: DataFirst [distributor], 2023. DOI: <https://doi.org/10.25828/9m9c-9380>
- Statistics South Africa. 2023c. Quarterly Labour Force Survey 2023: Q3 [dataset]. Version 1. Pretoria: Statistics South Africa [producer], 2023. Cape Town: DataFirst [distributor], 2023. DOI: <https://doi.org/10.25828/yx8q-gd28>
- Statistics South Africa. 2024. Quarterly Labour Force Survey 2023: Q4 [dataset]. Version 1. Pretoria: Statistics South Africa [producer], 2024. Cape Town: DataFirst [distributor], 2024. DOI: <https://doi.org/10.25828/2ymv-4y70>
- United Nations Environment Programme (UNEP). 2020. *Green Economy Policy Review of South Africa's Industrial Policy Framework*. Available: <https://wedocs.unep.org/handle/20.500.11822/34421>.
- Valero, A., Li, J., Muller, S., Riom, C., Nguyen-Tien, V. and Draca, M. 2021. *Are 'green' jobs good jobs? How lessons from the experience to-date can inform labour market transitions of the future*. London: Grantham Research Institute on Climate Change and the Environment and Centre for Economic Performance, London School of Economics and Political Science.
- World Bank. 2017. *South Africa Economic Update, January 2017: Private Investment for Jobs*. Washington, D.C: World Bank.
- World Bank. 2023. *Factsheet: Eskom Just Energy Transition Project in South Africa*. Online. Available: <https://www.worldbank.org/en/news/factsheet/2023/06/05/factsheet-eskom-just-energy-transition-project-in-afe-south-africa>

Appendices

Appendix 1: Youth researchers profiles



Name: Siboniso Prince Sikhakhane

Age: 27

Current Professions: Fulltime Researcher, Youth Activist, Writer and Academic Tutor

Degree: BA in Social Science, Honors in Sociology and MA in Sociology

Siboniso is passionate about qualitative and quantitative methods of collecting data to tackle youth's challenges. He is also interested in climate change, youth's lives, youth unemployment, and green jobs.

Testimonial

I live in Sifunindlela, a rural area in Mpumalanga, under the tribal Chief Khumalo. Like many youth in my community, I've witnessed the devastating impact of high unemployment. Without access to formal jobs, many youth remain stuck in "waithood" unable to achieve independence, start families, or contribute meaningfully to society. To survive, some have turned to informal work like street vending and waste picking, while others are drawn into crime as a last resort. This has been a worrying issue that I have shared an opinion piece with my friend Katiso Buthelezi on [DailyMavirk](#), highlighting the extreme lengths youth are willing to go to make ends meet where unemployment is widespread.

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As a youth leader and researcher with Restless Development, I've focused on green jobs in coal-mining communities across Mpumalanga. This experience has opened my eyes to the massive potential of the green economy to tackle both unemployment and climate change. Green jobs are said to offer 10 to 15 million job opportunities, which can alleviate the undying high youth unemployment in South Africa, especially in my community. Not only can green jobs offer work to many South Africans, but also it reduces human pollution and promotes sustainable development, as climate change has brought catastrophe through unprecedented heat, floods, landslides and droughts throughout the country.

I now seek to empower many young South Africans, with this research, I hope to amplify their voices and address the systematic and cultural barriers that prevent them from taking on green jobs, especially young women, by assisting in designing programmes that provide them with the skills and knowledge for green job opportunities. Using some of the research findings on youth unemployment and green jobs, I can advocate for policies that support more inclusive opportunities in sustainable sectors for youth, especially young women. I want to explore green job creation for women further and contribute to policy discussions on sustainability and youth employment in Mpumalanga.



Name: Kwanele Theo Matebese

Age: 26

Current Position: Researcher, Academic Tutor, Writing Consultant

Degree: Bachelor of Arts in Humanities, Honours degree in Sociology, Master of Arts in Sociology (*In Progress*)

Testimonial:

I am a passionate and committed emerging social scientist currently pursuing a Master of Arts in Sociology at the University of Johannesburg. My current research, titled *Navigating the Digital Divide: The Impact of Poor Connectivity on Youth Employment Prospects in Soweto's Orlando East Township*, explores how infrastructural inequalities, particularly limited internet access, undermine the employment prospects of working-class youth in under-resourced urban areas. This study is informed by both academic inquiry and lived experience, as I grew up in Orlando East, a community steeped in political history and symbolic of South Africa's long-standing tradition of youth-led resistance and social change. Inspired by the legacy of previous generations, I believe that youth today hold the same potential to shape society, especially when they are given access to opportunity, education, and meaningful participation. My broader academic path, which includes a Bachelor of Arts in Humanities (with majors in Development Studies and Sociology), an Honours degree in Sociology, and postgraduate training in Social Theory and Research Methodology, has equipped me with the analytical and methodological skills necessary to interrogate structural inequality and advocate for youth empowerment.

Beyond my academic work, I have consistently sought opportunities to contribute to projects that centre on youth's voices, aspirations, and potential for social impact. I have served as a writing consultant, tutor, and research assistant at the University of Johannesburg, and volunteered with Restless Development, where I was exposed to youth-driven initiatives in climate action, sustainability, and civic engagement. While my current postgraduate research does not focus on climate change directly, my broader academic and professional engagement has positioned me to contribute meaningfully to work on environmental issues. My involvement in youth-focused climate initiatives especially through Restless Development, has deepened my awareness of the urgent need to build green economies that do not leave behind communities like my own. Under the leadership of Dr Trevor Ngwane at the Centre for Sociological Research and Practice, I have helped organise seminars and participated in critical dialogues on the Just Transition in South Africa. These experiences have strengthened my conviction that research must be both critical and transformative, and that empowering youth, particularly in historically marginalised communities, is essential to building a just and sustainable society.



Name: Zusiphe Theophilus Mpungose

Age: 26

Current Position: Researcher, Academic Tutor, Writing Consultant

Degree: Bachelor of Arts in Development studies, Honours degree in Sociology, Master of Arts in Industrial Sociology (*In Progress*)

Testimonial:

I am a passionate and goal-orientated sociology student currently pursuing a Master of Arts in Industrial Sociology at the University of Johannesburg. My current research is titled; *“Academics' Perceptions of the Use of Large Language Models (LLMs) in Education: A Case Study of the University of Johannesburg, South Africa”*. I seek to unpack the nuanced impact of 4IR technologies on the quality of education.

Growing up in rural areas of KwaZulu-Natal, I was keenly attuned to inequalities, new rapidly growing developments, and social dynamics that defined our everyday interactions. I found myself drawn to the study of inequality in education, power dynamics, and social change within the forever-changing revolution. I started a quest of discovery that would take me through the corridors of academia and into the core of sociology. I became deeply involved in the study of social stratification and the quality of education because I wanted to shed light on the systems that support injustice, unequal access to education, low-quality knowledge production, and marginalisation. I am fascinated with the potential benefits and challenges associated with the integration of cutting-edge technologies such as LLMs into teaching and learning, which could guide scholars, governments, and policymakers in

determining the direction of education in the future.

By utilising sociological findings to influence policy interventions and grassroots movements, I hope to close the gap between new developments, activism and academia through active scholarship. I am motivated by a strong sense of social justice, quality education and a conviction in the transformational potential of group action, whether I am fighting for equal access to education or confronting structural obstacles to social mobility.



Name: Ayanda Nonhlanhla Masondo

Age: 26

Current position: Researcher and Assistant researcher at UJ

Degree: Bachelor of Arts in Humanities, Honors in Sociology, Masters in Social Impact assessment (in progress)

Testimonial:

As a young woman deeply passionate about the environment and the well-being of communities around me, I have always believed in the power of research to drive meaningful change. My journey has led me to pursue a Master's degree in Social Impact Assessment at the University of Johannesburg, where I am currently conducting a research project exploring the lived experiences of Black African male nurses working in Johannesburg hospitals. This work is not just academic for me, it's personal and purposeful, reflecting my commitment to amplifying underrepresented voices and fostering equity in our healthcare systems.

Faith plays a central role in my life. I live by the phrase "*small girl, big God*", a reminder that even with humble beginnings, I serve a God who makes all things possible. This belief has carried me through many challenges and continues to fuel my ambition to become a researcher who contributes to both academic knowledge and tangible social progress. I am also pursuing a research assistant opportunity at the University of Johannesburg to get me closer to my dream.

Working as an Assistant Researcher at Restless Development has been a transformative experience. In that role, I faced numerous challenges, but each one became an opportunity to grow. I've learned that resilience, hard work, and belief in one's vision can overcome

even the toughest obstacles. More than anything, I've discovered that with determination and the right mindset, anything truly is possible. As I move forward in my career, I remain driven by a deep sense of purpose to create impact, to stand firm in my faith, and to inspire others, especially young women like myself, to dream boldly and serve passionately.



Name: Martha Zanele Muntumuni

Age: 26

Current occupation: Student, Writing Centre consultant, and Development studies Tutor

Degree: BA in Humanities, Honours in Industrial Sociology, and master's in industrial Sociology (In-progress).

Testimonial:

As a sociology student from Orange Farm, a township located 45 km near Johannesburg, engaging with this study deepened my understanding of how broader issues like climate change and green jobs intersect with everyday struggles within our communities. It reminded me that research isn't just about data, it's about listening to real stories, recognizing structural inequalities, and imagining futures where youth are active participants in shaping change. This experience affirmed my passion for social science and the power it holds to amplify unheard voices and influence meaningful transformation.

What stood out to me is that even though youth face so many challenges not having enough information, skills, or support there's a strong desire among youth to be part of the green economy. I saw that the youth in Mpumalanga want to make a difference, whether it's through recycling, waste management, or learning about the green job opportunities.

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However, the youth require support to better access to training, scholarships, and mentorship, especially for young women who often feel left behind.

The study also highlighted how hard it is to find stable work, with many of us stuck in temporary jobs or struggling with unemployment. It's tough, and it can make you feel hopeless. But I believe that if the government, businesses, and communities work together to provide real pathways into green jobs through education, training, and youth-led projects, they can change things for the better.

I am inspired by the idea that green jobs can help us fight climate change and build a future where youth can thrive. I hope that more youth from places like Orange Farm and Mpumalanga will get the chance to learn, grow, and lead in the green economy. With the right support, we can create a sustainable and prosperous future for South Africa.



Name: Sello Maphoso

Age: 30

Current Occupation: Student Teacher, private tutor, Activator, volunteer as finance manager in Rural Child it is Possible (NPO), volunteer as Youth and community development worker, Youth Activist

Qualifications

1. Higher Certificate in Education
2. Higher Certificate in Youth Development and Community Development
3. Bachelor's Degree in Education (Senior and FET Phase)
4. Currently pursuing Bachelor's Degree in Education (Honors)

Testimonial

As an education student at the University of South Africa, residing in Mpumalanga province, nkangala region ,under Dr J. S moroka local municipality in the village called Senotlelo I am passionate about working with youth and sharing ideas to empower ourselves. My experience in the youth development sector with various organizations has equipped me with valuable skills and insights.

My tenure as a young researcher with Restless Development Zimbabwe was a transformative experience that broadened my understanding of green jobs and the challenges associated with them. Working with Restless Development Zimbabwe not only enhanced my knowledge but also empowered me to implement the ideas I learned in my own community. I am committed to teaching youth about green jobs and promoting sustainable practices in my village.

As I will be pursue my Master's degree in Education, in the next coming years I intend to focus on integrating green jobs into the curriculum at lower levels. I believe that the Department of Education can play a vital role in shaping the next generation's understanding of sustainability and environmental responsibility.

"Green jobs are the key to a sustainable future, and integrating them into education can empower youth to drive positive change in their communities."

Working with Restless Development Zimbabwe significantly grew my research skills, particularly in the area of green jobs. Through this experience, I developed a deeper understanding of research methodologies, data analysis, and project implementation. These skills have been invaluable in informing my approach to education and community development.

Appendix 2: Interview guide

Youth and Green Jobs Interview Guide: Young People

Section 0 – Interviewer details

Interviewer name	
Interview date	
Language of interview	
Area of interview	
Start time	

INTRODUCTION

Good day. My name is [interviewer name] and I am a young researcher from Restless Development. Thank you for indicating your willingness to participate in this study, conducted in partnership with the University of Cape Town and the University of Cambridge. In this study, we are hoping to gather information about what work means to you, your hopes and aspirations as they relate to work and employment, as well as what different types of employment mean to you in the current South African context.

Please note that all information gathered throughout the course of this interview will be kept anonymous and will only be used for the purposes of this research project. Demographic characteristics such as age, gender identity, and race are only being collected to ensure alignment with our study objectives and will not be used to individually identify you in our final research report. If at any point you feel uncomfortable and would prefer not to answer a question, or if you would prefer to withdraw from the study, you may do so without any consequences.

We will also need to record this interview purely for the purposes of ensuring we get accurate representation of your answers. This recording will be used purely to ensure the accuracy of our transcription and data capturing process.

Before we continue with the interview, please indicate whether you understand what we have discussed and are comfortable to proceed with this recorded interview?

YES	NO
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If NO:

Thank you for your time. Have a nice day further.

If “YES”, continue as below:

Thank you for confirming your willingness to continue with the interview. We will begin by collecting some demographic information.

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Section A – Screening questionnaire

To ensure that we do not waste your time, we are now going to ask you a few questions to work out whether we need you to answer our full questionnaire.

1. How old are you today?

(Answer in years)

Enumerator note: Alternative phrasing could be “How old were you at your last birthday?”

Numeric answer.

2. What is your gender identity?

1	Male
2	Female
3	Other
4	Prefer not to answer

3. What population group do you identify as?

1	African
2	Coloured
3	Indian/Asian
4	White
5	Other
6	Prefer not to answer

4. Are you currently working?

Prompt: Working may mean working for another person either with or without pay, being self-employed or owning your own business.

1	Yes
2	No
3	Prefer not to answer

5. [If Q4=1] Do you currently work in the mining sector?

Prompt: The mining sector includes all processes and activities involved in and related to the discovery and extraction of naturally occurring minerals from the earth.

1	Yes, in a job directly related to mining
2	Yes, in a job not directly related to mining
3	No
4	Prefer not to answer

At this point, we will screen individuals as follows:

- If age in Q1 is <18 OR >35, END INTERVIEW
- If population group in Q3!=1 [African], END INTERVIEW
- Based on responses to Q2, Q4 and Q5, we will determine whether responses from individuals in that cell are still required, based on our preliminary stratification design.

- o *If YES, CONTINUE*
- o *If NO, END INTERVIEW*

If individuals are flagged to END INTERVIEW

Thank you for your time. We do not need to ask you any further questions. Have a pleasant day further.

If individuals are flagged to CONTINUE

Thank you for answering these questions. We will now continue with the questionnaire to gather some further detail related to our study.

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Section A - Demographics

6. What is the highest level of education you have completed?

1	I have no formal schooling
2	Grade 0/Pre-school
3	Incomplete primary school (Grade 1 to Grade 6)
4	Complete primary school (Grade 7)
5	Incomplete secondary school (Grade 8 to Grade 11, or equivalent)
6	Matric or equivalent
7	Post-matric degree or diploma
8	Postgraduate degree

Freeform answer, to be post-coded into the fields below

7. *[If Q6 = 7 OR 8]* What is/was your field of study?

1	Arts/humanities
2	Science
3	Social science
4	Law
5	Theology
6	Commerce/management
7	Education
8	Medical services (including dentistry)
9	Engineering
10	Administration/clerical
11	Protection
12	Building sciences
13	Technical
14	Computing
15	Veterinary
16	Tourism
17	Beauty/hair/cosmetology
18	Other (specify)

8. Are you currently attending an educational institution?

1	Yes
2	No
3	Prefer not to answer

G. *[If Q8=1]* What level of education are you currently studying towards?

1	National Certificate Vocational 2 (NCV2)
2	National Certificate Vocational 3 (NCV3)
3	National Certificate Vocational 4 (NCV4)
4	N1 (NATED)/NTC1
5	N1 (NATED)/NTC1
6	N1 (NATED)/NTC1

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7	N4 (NATED)
8	N5 (NATED)
G	N6 (NATED)
10	Certificate
11	Diploma
12	Bachelor's degree
13	Honours degree
14	Higher degree (Masters or PhD)
15	Postgraduate diploma
16	Other (specify)

10. How many people rely on your income/would rely on your income if you earned one (excluding yourself)?

Numeric answer.
Answer must be ≥ 0 .

Section B – Economic activity

11. Which of the following activities describes you best?

1	Working in a job where you earn a wage or salary
2	Self-employed/own your own business
3	Helping another family member in their business without pay
4	Full time scholar/student at an educational institution
5	Homemaker (looking after children, others, home)
6	Unemployed, and actively searching for a job
7	Unemployed, but not actively searching for a job
8	Long-term sick/disabled
G	Other (specify)
10	Refused

If Q11=1 OR 2 OR 3

12. In which economic sector does your work or business fall?

1	Agriculture, fishing, forestry
2	Mining and quarrying
3	Manufacturing (e.g., clothing, food)
4	Electricity, gas, water
5	Construction
6	Wholesale/retail
7	Transport, storage and communication
8	Finance, real estate and business services
G	Communication, social and personal services
10	Private households

13. What kind of work do you usually do in your job? Please give us at least two

Freeform answer to be post-coded later

words or phrases describing your work.

14. What is your main task/duty in this job? Please give us at least two words or phrases describing your main tasks/duties?

Freeform answer to be post-coded later

15. Is your job a full-time job?

1	Yes
2	No
3	Prefer not to answer

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16. *[Only if Q11=1]* Which of the following best describes your employment?

1	I am employed on a permanent contract
2	I am employed on a contract with a limited duration/fixed-term contract
3	I am a seasonal worker
4	Other (specify)

If Q11=4 OR G OR 7

17. Have you ever had a job before?

1	Yes
2	No
3	Prefer not to answer

18. *[If Q17=1]* In which economic sector did your last job fall?

1	Agriculture, fishing, forestry
2	Mining and quarrying
3	Manufacturing (e.g., clothing, food)
4	Electricity, gas, water
5	Construction
6	Wholesale/retail
7	Transport, storage and communication
8	Finance, real estate and business services
G	Communication, social and personal services
10	Private households

1G. *[If Q17=1]* What kind of work did you usually do in your last job? Please give

Freeform answer to be post-coded later

us at least two words or phrases describing your work.

20. *[If Q17=1]* What was your main task/duty in your last job? Please give us at least two words or phrases describing your main tasks/duties?

Freeform answer to be post-coded later

21. *[If Q17=1]* Was your last job a full-time job?

1	Yes
2	No
3	Prefer not to answer

22. *[Only if Q11=G OR 7]* How long have you been unemployed?

1	Less than one month
2	Between one and six months
3	Between six months and one year
4	Longer than one year

If Q11=5 OR 8 OR 9 OR 10

END INTERVIEW

Thank you for your time. We do not need to ask you any further questions. Have a pleasant day further.

Section C – Qualitative interview

PART 1: Meaning of work

23. Working in a job can be important in different ways for different people. For

Freeform answer

you, why is working in a job important?

24. When looking for a job, what factors are important to you?

Prompt: For example, it is salary/wage; flexible working hours; proximity to home; the work being something you enjoy; etc.?

Freeform answer

25. In terms of how you see yourself and how others see you, what does it mean

Freeform answer

to be unemployed?

PART 2: Aspirations

26. Where do you see yourself in twelve (12) months' time in terms of your

Freeform answer

work/education/career?

27. Picture yourself at age 45. In this picture, where would you like to see yourself in terms of work/career?

Freeform answer

28. What challenges have you faced or do you think you might face that could

Freeform answer

prevent you from achieving this picture?

29. What have you done to try to overcome these challenges? Or what do you think you may need to do in the future to overcome these challenges?

Freeform answer

30. What support (from family, communities, government, employers, etc.)

Freeform answer

would help you overcome these challenges?

31. Are there any lessons you have learnt from facing these challenges that you could share with others?

Freeform answer

PART 3: Green jobs

Freeform answer

32. What do you think about when you hear the phrase "green jobs"?

33. Can you give us one or two examples of what you understand by "green jobs"?

Freeform answer

Freeform answer

34. Have you ever thought of yourself as being employed in a green job? Why or why not?

35. Have you heard about the "just transition"? What do you understand by it?

Freeform answer

Freeform answer

36. Have you heard about climate change? What do you understand by it?

37. In what ways do you feel climate change has affected you, if at all?

Freeform answer

We are now going to discuss green jobs further. For our purposes, we have defined

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“green jobs” to be jobs, occupations and types of work that contribute to reducing the human impact on the planet, including mitigation of and adaptation to climate change.

38.Can you think of any specific jobs that would fall into this category? If yes,

Freeform answer

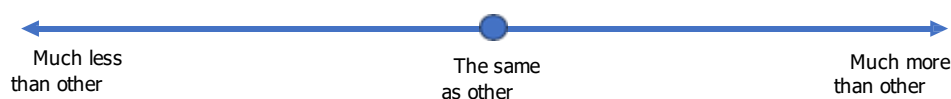
please tell us what they are.

39. Do you think {first identified job in Q38} is a good job? Why or why not?

Freeform answer

We are now going to ask you a number of questions regarding green jobs and how they compare to other jobs. The middle of the scale represents a point that is the same as other jobs.

Example of the sliding scale to be presented to respondents:



40.How do green jobs compare to other jobs in terms of ...

	Question	Measures on sliding scale (left/right)
a.	... pay?	Pay less/Pay more
b.	... skills?	Require fewer skills/Require more skills
c.	... experience required?	Require less experience/Require more experience

d.	... whether you would want to do the job?	I would not want to do this green job/I would want to do this green job
e.	... achieving the picture of yourself at age 45? <i>Enumerator note: If respondent is confused, remind them of the picture at age 45 they visualized in Q27.</i>	Less likely to help achieve this picture/More likely to help achieve this picture
f.	... finding a job?	Easier to find a green job/More difficult to find a green job
g.	... being a stable job?	Less stable/More stable
h.	... how easy it would be for you to start work in a green job?	Easier/Harder
i.	... being a good job?	Less likely to be a good job/More likely to be a good job

41.Do you believe that enough education and training programmes exist to

Freeform answer

support young people in acquiring the necessary skills for green jobs? Why or why not?

42.What could the education system do better to prepare you for employment in green jobs?

Freeform answer

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Here are some examples of green jobs:

- Refuse collector
- Wind, solar or hydroelectric plant technician
- Heat pump, solar, or energy efficiency supplies sales representative
- Insulation contractor and installer
- Renewable energy engineer
- Wildlife officer/park warden

43. Which of these jobs is most attractive to you? Why?

Freeform answer

Freeform answer

40. What makes this job attractive to you?

41. Do you think that you would be able to get a job like this? Why or why not?

Enumerator note: Make sure to probe answers for mention of things like skills requirements; availability of the job in the market; the locality of the job; etc.

Freeform answer

Freeform answer

42. Which of these jobs is most unattractive to you?

43. What makes this job unattractive to you?

Freeform answer

44. Do you think that you would be able to get a job like this? Why or why not?

Enumerator note: Make sure to probe answers for mention of things like skills requirements; availability of the job in the market; the locality of the job; etc.

Freeform answer

4G. What would you recommend policymakers should do to ensure that the

Freeform answer

young people affected by the shift to a sustainable economy are sufficiently supported?

Section D – Close out

Thank you very much for your time. Your responses have been very helpful, and we greatly appreciate you participating in this study. We wish you a pleasant day further.

END INTERVIEW

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