



Forestry, Fisheries and the Environment
Science and Innovation
Trade, Industry and Competition



PAGE– South Africa Sustainability Report



International
Labour
Organization



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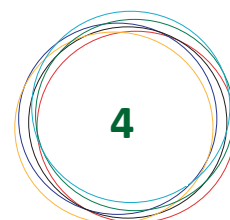
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ACRONYMS AND ABBREVIATIONS

AfDB	African Development Bank
CAPI	Computer Assisted Personal Interviewing
CEM-NWU	Centre for Environmental Management – North West University
CO₂	Carbon Dioxide
COP	Conference of Parties
COSATU	Congress of South African Trade Union
COVID-19	Coronavirus Disease 2019
CSA	Climate Smart Agriculture
CSIR	Council for Scientific & Industrial Research
CTIP-SA	Clean Technology Innovation Programme
DALRRD	Department of Agriculture, Land Reform & Rural Development
DFC	Driving Force for Change
DFFE	Department of Forestry, Fisheries & the Environment
DHET	Department of Higher Education & Training
DPME	Department of Planning, Monitoring & Evaluation
DSI	Department of Science & Innovation
DTIC	Department of Trade, Industry & Competition
EBRD	European Bank for Reconstruction & Development
EDD	Economic Development Department
ERRP	Economic Reconstruction and Recovery Plan
GAIN	Green Jobs Assessment Institutions Network
GDP	Gross Domestic Product
GEF	Global Environment Facility
GEISA	Green Economy Inventory for South Africa
GEITA	Green Economy Industry Trade & Analysis
GELA	Green Economy Learning Assessment
GEP	Green Economy Progress
GEPMF	Green Economy Progress Measurement Framework
GET	Green Economy Transition
GHG	Greenhouse Gas
GJAM	Green Jobs Assessment Models
IGE	Inclusive Green Economy
ILO	International Labour Organization
ITC-ILO	International Training Centre of the ILO



JETP	Just Energy Transition Partnership
LFS	Labour Force Survey
MIWMP	Municipal Integrated Waste Management Plan
MTSF	Medium Term Strategic Framework
NDC	National Determined Contribution
NEVA	National Employment Vulnerability Assessment
NPC	National Planning Commission
NSC	National Steering Committee
NWMS	National Waste Management Strategy
PAGE	Partnership for Action on Green Economy
PAPI	Paper Assisted Personal Interviewing
PCC	Presidential Climate Commissions
POP	Persistent Organic Pollutant
QLFS	Quarterly Labour Force Survey
SAEON	South African Environmental Observation Network
SAG	Switch Africa Green
SAGEM	South African Green Economy Modelling
SA-LEDS	South Africa's Low Emissions Development Strategy
SANBI	South African National Biodiversity Institute
SARUA	Southern African Regional University Association
SASAS	South African Social Attitudes Survey
SDG	Sustainable Development Goals
SETA's	Sector Education & Training Authorities
SJRP	Sector Jobs Resilience Plan
STATS-SA	Statistics South Africa
TERNET	Tertiary Education & Research Network
UN	United Nations
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNIDO	United Nations Industrial Development Organization
UNITAR	United Nations Institute for Training & Research
WRC	Water Research Council

EXECUTIVE SUMMARY

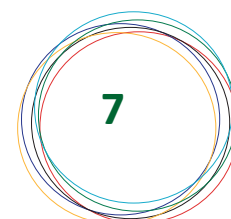
South Africa joined the Partnership for Action on Green Economy (PAGE), in March 2015. The PAGE Programme is an inter-agency United Nations (UN) programme which brings together the expertise of five UN agencies – United Nations Environment Programme (UNEP), International Labour Organization (ILO), United Nations Industrial Development Organization (UNIDO), United Nations Development Programme (UNDP) and United Nations Institute for Training and Research (UNITAR), to support countries and regions to put sustainability at the heart of economic policies and practices.

The expected country outcomes of PAGE South Africa (PAGE-SA) were to:

- i. contribute to better policy coordination and deepen collaboration of green economy policy, planning and implementation processes,
- ii. identify potential and enabling factors for selected green economy sectors and/or industrial segments, with the intent of promoting sector reform, and
- iii. strengthening capabilities through enhanced green economy learning and training, including support for national learning institutions and the development of a green economy knowledge-sharing platform for South Africa.

PAGE South Africa successfully delivered on these outcomes and this Sustainability Report provides a snapshot of the key deliverables and interventions that were implemented by a range of institutions and actors across the South African green economy landscape. Initially, PAGE SA was to conclude by December 2020, but with the onset of the COVID-19 Pandemic, post recovery funds were made available, and PAGE South Africa was extended until September 2022. South Africa was one of the successful applicants to access the post recovery funds, which supported vulnerable groups such as young men and women in the small business sector to green their business operations. Furthermore, the recovery funds allowed for an economic modelling exercise which included supporting capacity development of National Treasury to address circular economy challenges and opportunities in policy refinement and programming.

The PAGE Programme further aimed at identifying new and emerging industry opportunities. Noting, that the pursuit of new and emerging industries, being promoted through a green lens, may happen, once all enabling attributes have been adequately addressed. These range from domestic consumer demand, potential export options, circularity, workforce readiness, manufacturing capabilities, and investment appetite.



The Global PAGE Programme also afforded South Africa with the opportunity to address refinement of green economy skills sets, through the provision of several capacity development interventions. A key intervention, worthy of mention is the PAGE Academy, which was coordinated by the International Training Centre of the International Labour Organization. Several opportunities were also provided through the PAGE Programme to promote a select number of successful case studies emanating from PAGE- South Africa.

One of the key success factors for the achievement of the identified deliverables was the unwavering dedication of the PAGE National Steering Committee (NSC) under the leadership of the DFFE. The NSC met regularly and debated, scrutinized and agreed on the key interventions to be pursued in support of the three main country outcomes while always ensuring strong alignment with national priorities. Subsequent to endorsement by the NSC, national agencies and institutions collaborated with the respective UN agency.

PAGE Donor Partners

The success of PAGE South Africa was made possible through the support of the resource partners such as the European Union; the Ministry for Foreign Affairs of the Government of Finland; the Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety of the Federal Republic of Germany; the Ministry of Environment, Korea; the Ministry of Climate and Environment; Norway, the Government of Sweden; the Swiss Secretariat for Economic Affairs and the United Arab Emirates.



BACKGROUND

The PAGE South Africa Sustainability Plan is based on the following PAGE sustainability criteria:

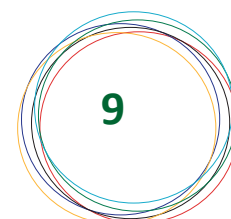
- a) Economic and national development policies being reframed along an Inclusive Green Economy (IGE), Sustainable Development Goals (SDG) and climate action priorities.
- b) Establishment of a national coordination mechanism for IGE.
- c) Development of strategies, plans and policies for implementing IGE across sectors, including within civil society and the private sector, and capacities for policy analysis strengthened.
- d) Funding opportunities identified and embraced by national and international actors and in particular by international finance institutions and domestic financial markets.
- e) IGE elements integrated into training programmes delivered by national institutions.

This Sustainability Report reflects on the journey of the PAGE SA Programme and the key achievements. In addition, it looks at some of the remaining considerations: 1) further actions for achieving sustainability, 2) additional funding opportunities and 3) continued collaboration with and between stakeholders, to continue advancing and inclusive green economy in South Africa.

INTRODUCTION

South Africa joined the PAGE Programme in 2015 to support, and further strengthen the implementation of the Country's vision for a "low-carbon, resource-efficient and pro-employment" development path. South Africa has already made significant strides in adopting green economy strategies with the signing of the tripartite Green Economy Accord in 2011 in which the Government, organised business, organised labour and community constituents agreed to making the New Growth Path green through 12 joint commitments. PAGE outcomes and priority actions support the country's long-term policy vision, the National Development Plan 2030 (adopted in 2011), which commits to an "environmentally sustainable and equitable transition to a low carbon economy." As an additional element in the policy framework, the 9th iteration of the Industrial Policy Action Plan (IPAP 2017/18-19/20) identified climate-compatible industrial development as a key theme, recognizing that energy-efficient production and carbon mitigation efforts and measures, will increasingly have to be applied to all sectors of the economy.

Following the advent of the COVID-19 pandemic in 2020, the United Nations (UN) document "A UN framework for the immediate socio-economic response to COVID-19, identified PAGE as a partnership that will support countries in their economic recovery efforts. By recognizing that: "Support on strategies to green fiscal stimulus packages, the United



Nations Development System will mobilize the Partnership for Action on Green Economy (PAGE) that provides integrated support on green jobs, economic and environmental issues to plan early response and recovery phase of the crisis.”

Prior to the onset of the COVID-19 Pandemic, South Africa was categorized as an upper-Middle Income Country with the most diverse economy on the continent. However, persisting high levels of inequality, unemployment and poverty – commonly referred to as the Triple Challenge continue to threaten the achievement of an inclusive green economy. The socio-economic fragility further exacerbated by the COVID-19 pandemic required practical solutions to foster economic resilience and employment creation as building blocks of a green, inclusive and just economic recovery.

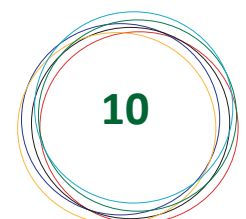
Therefore, for the 2021 extension period of the PAGE Programme in South Africa, Government and UN agencies mobilised additional financial resources, which was made available by the Federal Republic of Germany - a key resource partner to the PAGE Programme. The additional funding was aimed at ensuring the recovery from the COVID-19 pandemic was not at the expense of the environment and the green economy, but on the contrary that the green economy would be central to recovery efforts. PAGE partners in South Africa inclusive of national partners and agencies were fully engaged in the co-development of a proposal for additional support to green recovery in South Africa. The joint collaborative efforts in line with the respective mandates and thematic expertise of national and international partners received unequivocal support from the Office of the Residence Coordinator of the United Nations in South Africa.

National Development Strategies

South Africa has a longstanding commitment to incorporating green economy principles into national policies, both at the macro-economic and sectoral levels. By the time South Africa joined PAGE in 2015, the Country had already put in place a comprehensive policy framework for transition to a greener economy as mentioned above. PAGE in South Africa was therefore structured around supporting improved collaboration, coordination and implementation of these existing policy frameworks and their associated programmes.

The Medium-Term Strategic Framework for 2014-19 (MTSF), regarded as the action plan to monitor and support the implementing of the country’s long-term development vision, focuses on policy coherence, alignment and coordination. PAGE was well-placed to support several priority areas identified in the MTSF, such as:

- i. planning, piloting and investing in the creation of a framework for implementing the transition to an environmentally sustainable and low-carbon economy in South Africa,



- ii. harnessing research and information management capacity to identify, develop and maintain datasets to generate policy-relevant statistics, indicators and indices.

As indicated, the expected country outcomes of PAGE in South Africa were to:

- i. contribute to better policy coordination and deepen collaboration of green economy policy, planning and implementation processes,
- ii. identify potential and enabling factors for selected green economy sectors and/or industrial segments, with the intent of promoting sector reform, and
- iii. strengthening capabilities through enhanced green economy learning and training, including support for national learning institutions and the development of a green economy knowledge-sharing platform for South Africa.

In particular, the MTSF therefore provided several entry points for PAGE's engagement. Since the launch in 2015, PAGE has sought to strengthen the cooperation, coordination and capabilities required to realize the country's vision for its transition to a low-carbon, resource-efficient and pro-employment development path, with a focus on critical issues such as inefficiencies in the water and energy sectors. PAGE's work in South Africa contributes to Sustainable Development Goal 8, however it also transverses goals 4, 9, 10, 12, 13, 15 and 17, as well as, to South Africa's Nationally Determined Contributions focused on mitigation, adaptation and means of implementation.

Effective National Coordination Mechanism

The establishment of the National Steering Committee (NSC) in March 2016, and active engagement of NSC task team members in the PAGE technical working groups ensured ownership of key stakeholders in the planning, implementing and monitoring and evaluation processes of PAGE support. The primary responsibility of the NSC was to provide oversight and management of the performance of PAGE South Africa whilst advancing national policies, strategies and programmes.

The NSC was initially co-chaired by Department of Forestry, Fisheries and the Environment (DFFE)¹ and the Economic Development Department (EDD). Following changes in government administration, EDD as a ministry was integrated into the Department of Trade, Industry and Competition (dtic), which was already part of the NSC. The NSC therefore decided that there was no need to make dtic co-chair of the NSC and the DFFE remained the government focal ministry responsible for coordinating the implementation of PAGE both within the Department, as well as across levels and spheres of Government. This is illustrated in Figure 1.

¹ Formerly Department of Environmental Affairs (DEA)



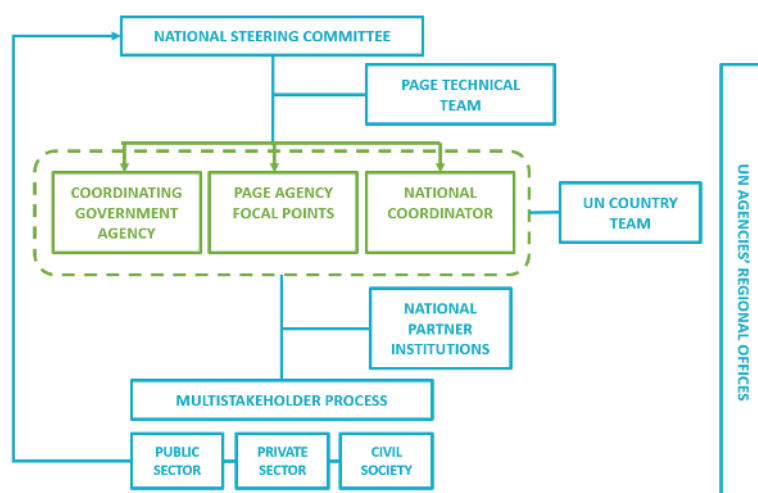


Figure 1.: An illustration of the key stakeholders of the PAGE National Steering Committee.

The Results Framework

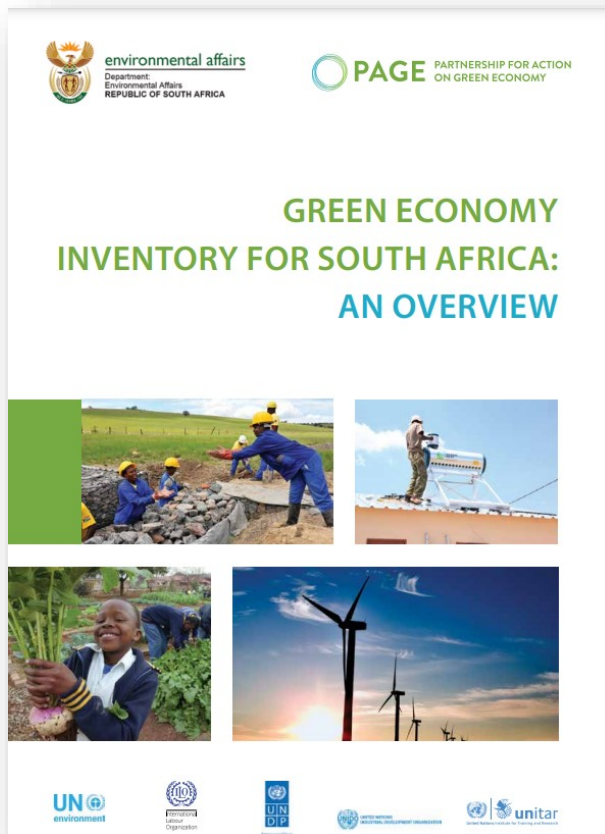
In the design of PAGE South Africa, the overall intended results were described as; *“South Africa is transforming its economy to a sustainable, climate-change resilient, low-carbon and just society which seeks to eradicate poverty, increase social equity and decent jobs, reduce greenhouse gas emissions, strengthen livelihoods and environmental stewardship, reduce income inequality and sustain growth in line with the Sustainable Development Goals.”* Subsequently, three main outcomes were identified and agreed upon between the Government of South Africa and the five UN agencies. The first outcome sought to contribute to better policy coordination and to assist in deepening the collaboration of green economy policy, planning and implementation processes. The second outcome sought to identify potential and enabling factors for selected green economy sectors and/or industrial segments with the intention of promoting sector reform. The third outcome sought to strengthen national capabilities through enhanced green economy learning and training, including the development of a green economy knowledge sharing platform for South Africa.²

The status of these priorities and their related outputs was presented at each NSC meeting wherein UN agencies that were responsible for coordinating the achievement of outputs with national partner institutions, presented their progress towards achieving the results and expenditures of funds allocated to outputs. A narrative account of the status of these three outcomes are presented in the following section.

² See Annex 1 for an overview of the results framework

OUTCOME 1: IMPROVED COLLABORATION AND COORDINATION OF GREEN ECONOMY POLICY, PLANNING AND IMPLEMENTATION PROCESSES

1.1. Green Economy Inventory for South Africa



A first important output was the Green Economy Inventory for South Africa (GEISA), which served to provide a snapshot of green economy initiatives implemented by a wide range of institutions in both the public and private sector. The GEISA sought to establish a knowledge base for improved collaboration and coordination, policy development and implementation.

The GEISA illustrated a widespread and growing activity in the green economy landscape; it identified approximately 1,000 green initiatives across all provinces and in all sectors. Sectoral policies such as in waste management, water, energy, manufacturing and transport have been adopted, and 7 of the 9 provinces in South Africa have

developed provincial green economy strategies. Investment in skills and technology, as well as a reorientation of public investment is seen as central for the achievement of a green economic transformation.

This was a clear signal that South Africa is actively transitioning toward a low-carbon and climate resilient green economy with a range of economic, social and environmental benefits. Insights drawn from the GEISA have been instrumental in understanding how existing green economy actions can be expanded and scaled-up to help realize the SDGs and meet South African's NDCs. The transition should be inclusive, fair and just and aligned with the country's efforts to address poverty, unemployment and inequality and to the integrated approaches which are embodied in the SDGs and the Paris Agreement.

1.1.1 Further Actions Identified for Achieving Sustainability

The GEISA served its original intended purpose on providing a snapshot of the green economy landscape and activities and served to inform subsequent interventions.

The Green Economy Policy Review with focus on Industrial Policy Action Plan complements the work done by GEISA and gives account of the latest green economy initiatives in South Africa and presents opportunities to advance inclusive green growth pathway. This work stream was funded by the European Union through the German Development Agency (GIZ) Green Economy Transformation project.

Major Stakeholders included the Department of Forestry, Fisheries and the Environment (DFFE) as the coordinating ministry with input from other key ministries, and all UN agencies involved in implementing the PAGE Programme with the key coordination by the ILO.



1.2. The Green Economy Progress Measurement Framework

Developing a national framework on green economy indicators allows South Africa to monitor its progress towards an Inclusive Green Economy (IGE) and transition to an environmentally sustainable and low-carbon economy. The intention of the Green Economy Progress (GEP) measurement framework is to track progress on a country level and to facilitate cross-country or cross-provincial comparisons of achieved progress. It is also consistent with the 2030 Agenda for Sustainable Development as it includes indicators correlated to the majority of the 17 Sustainable Development Goals.

With the South African Government, through the Departments of Planning, Monitoring and Evaluation (DPME), Department of Forestry, Fisheries and the Environment (DFFE), Statistics South Africa (Stats SA) and the Department of Science and Innovation (DSI), PAGE hosted a validation workshop on the Green Economy Indicator Measurement Framework. The workshop was a culmination of work led by UN Environment Programme (UNEP). This work stream identified relevant indicators for South Africa, based on a global catalogue as well as country level indicators such as the Development Indicators, South Africa's SDG report, outcome 4 and 10, respectively.

Government stakeholders reviewed indicators and determined its relevance and validity and confirmed national data availability. The data sources phrasing of indicators were mainly derived from existing government frameworks such as the South Africa's National Development Plan - Outcome 10, Outcome 4, the Development Indicators Report and South Africa's SDG baseline Report, as key documents. This was to ensure alignment, ownership, legitimacy and the acceptability of the selection process.

1.2.1 Further Actions Identified for Achieving Sustainability

Following consultations between UNEP and the Department of Forestry, Fisheries and the Environment, (DFFE), the Green Economy Progress (GEP) Measurement Framework for South Africa was completed in 2020, with the finalization of the report in December 2020.



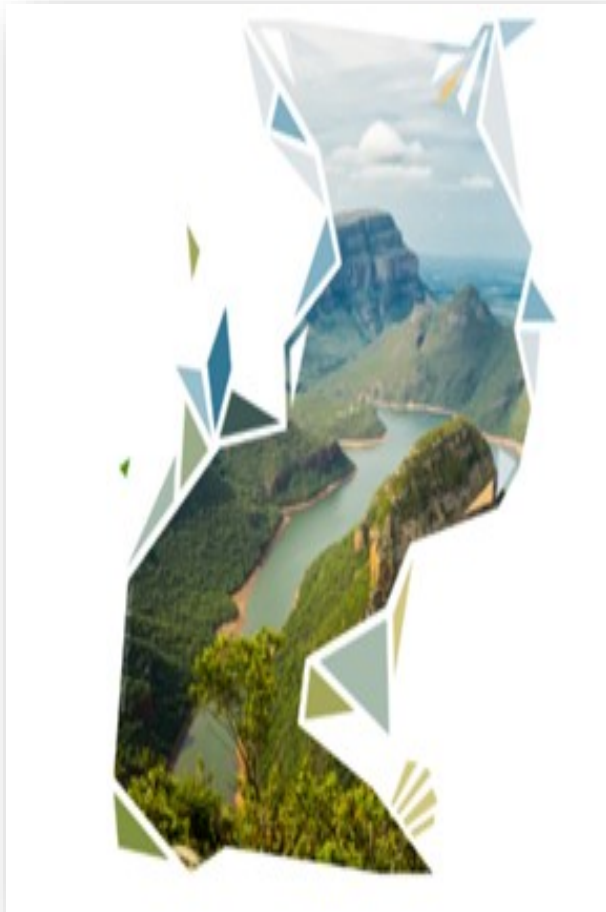


The GEP Measurement Framework captures the many dimensions of an Inclusive Green Economy, and measures the accumulation of natural, human, and social capital as inputs for producing goods and services in an environmentally friendly way.

The intention of the GEP measurement framework (GEPMF) was that once it was endorsed by government, the responsible ministries would be able to integrate and implement the rollout of the GEPMF. However, the approach had to be revisited to ensure that existing baseline datasets were also in place. Thus, a follow up process entailed the proposal of 15 indicators which were aligned to the GEPMF and in existence within the public sector.

The major stakeholders included the Departments of Forestry, Fisheries and the Environment, of Planning, Monitoring and Evaluation, of Statistics South Africa, of Department of Science and Innovation and United Nations Environment Programme.

1.3. A Dialogue Platform for Supporting Green Economy Policy Development and Implementation



PAGE supported several national and sectoral dialogues against priority interventions with the aim of strengthening South Africa's transition towards sustainable energy and energy efficiency. In particular, two discussion papers, developed by leading renewable energy experts with PAGE support, fed into a high-level, multi-stakeholder debate convened under the auspices of the O.R. Tambo Debate Series, organized by the Wits University School of Governance in partnership with United Nations Development Programme (UNDP), DPME and O.R. Tambo Foundation. The debate focused on the theme of renewable energy and industrialization in South Africa, and to the National Development Plan, which commits the country to diversifying its energy mix and expanding renewables. This work has served

to reinforce institutional collaboration and dialogue at the national level for improved green economy analysis and accelerated policy reform in the energy sector.

In this context, PAGE supported the National Planning Commission's (NPC) *2050 Vision and Pathways for a Just Transition to a low carbon, climate resilient economy and society* through the O.R. Tambo Debate Series platform which was a series of policy debates centered on pathways for a just transition on the green economy in South Africa. Key focus groups focused on youth and labour constituents. In collaborating closely with National Planning Commissioner, Tasneem Essop, PAGE has contributed significantly to a consensus-driven and inclusive NPC vision document on *Pathways for a Just Transition to a low carbon, climate resilient economy and society*.

1.3.1 Further Actions Identified for Achieving Sustainability

While recognizing that this is a long-term transition process, South Africa is facing a number of challenges that threaten its green economy transition, including the fear of job losses in the coal mining sector and value chain, which may slow down energy transition programmes wherefore it is critical to ensure universal holistic messaging and alignment to existing and current related initiatives such as the National Employment Vulnerability Assessment (NEVA) and the Sector Jobs Resilience Plans (SJRPs). To address these challenges, PAGE presented the Just Transition framework SJRPs, informed by the NEVA task team set up by the Climate Mitigation Unit of DFFE. The presentation demonstrated the importance of long-term planning and inclusive consultations with organised business and labour in affected sectors to ensure not only the viability of implementing a just transition to a greener and more inclusive economy, but also as a means for implementing collaborative partnerships, which are central in delivering on South Africa's sustainable development visions.

Economic diversification is key in the transition from carbon-intensive sectors to low-carbon development pathways. The NEVA focusses on five value chains critical to the economy, and in no order of priority – coal, metals, petroleum-based transport, agriculture and tourism – and it provides a detailed analysis of the capacity of vulnerable communities, workers and businesses to adjust to climate change-related impacts. In addition, the SJRP indicates where developments warrant a programmatic response, and the needs of vulnerable groups as they seek a viable adjustment.

To ensure that the resulting social burdens are not shifted into vulnerable people and communities, SJRPs were proposed for each of these sectors, ensuring that the shift would be done in a just manner. Sectoral transition plans toward a climate compactible development, in line with the recently cabinet-approved South Africa's Low-Emissions Development Strategy (SA-LEDS) and the South Africa National Adaptation Strategy, would in turn support implementation of South Africa's revised NDC whilst facilitating a just transition and creation of decent and green jobs. South Africa's journey to de-coupling economic growth from greenhouse gas (GHG) emissions whilst noting that achieving economic, social, environmental development goals, is complex and requires inter-sectoral coordination and implementation. Hence the establishment of the Presidential Climate Change Coordination Commission (PCC) in 2020 was highly welcomed and timely.

South Africa has reviewed and edited its Nationally Determined Contribution (NDC) to the Paris Agreement in order to enhance ambition on both mitigation and adaptation, in 2021, prior to the UNFCCC COP26. Furthermore, "A Framework for a Just Transition in South Africa" was officially published by the Presidential Climate Commission which complements other ongoing efforts inclusive of The Just Energy Transition Partnership (JETP).

Major Stakeholders included the Department of Forestry, Fisheries and the Environment (DFFE), of Mineral Resource and Energy, of Social Development, Organised Business, Organised Labour, Community Organisations, UNDP and the ILO.



1.4. Inclusion of Green Jobs Module in the Statistics South Africa Quarterly Labour Force Survey

Inclusion of a Green Jobs module in the South African Quarterly Labour Force Survey (QLFS) was initially proposed in the PAGE work plan in 2017. Including a Green Jobs module in the QLFS would provide an account of environmental sector employment and the number of green jobs created or lost in other sectors on a quarterly basis from both quantitative and qualitative perspectives. PAGE supported StatsSA in developing the methodology to collect data of environmental sector employment and green jobs. Module questions were developed and attached to the regular Labour Force Survey (LFS) to reflect the extent of green economy employment.

1.4.1 Remaining Challenges

Between 2018-2020 several engagements and exchanges between PAGE and Stats SA took place and there is a great interest from StatsSA to test a green jobs module, which was developed with the support of the Labour Statistics Department of the ILO. Although, StatsSA affirmed its commitment on including the Green Jobs module in future QLFS, delays were experienced in implementing this work stream. The delays were due to Stats SA moving from Paper Assisted Personal Interviewing (PAPI) to Computer Assisted Personal Interviewing (CAPI). Upon the migration from PAPI to CAPI StatsSA committed to pilot the Green Jobs module questions in the QLFS.

1.4.2 Further Actions Identified to Achieve Sustainability

Due to the earlier-mentioned delays in implementing this work stream, the NSC decided to re-allocate funds to the Skills for Green Jobs Regional Training Hub for a green jobs assessment. Discussion with Stats SA and the Pretoria based ILO Labour Statistician continues on the introduction of a Green Jobs module in the QLFS. The advent of COVID-19 further delayed the progress. Whilst the commitment from StatsSA has been expressed, the inclusion of green jobs module in the QLFS, remains to be undertaken.

Major Stakeholders include Statistics SA, Departments of Forestry, Fisheries and the Environment (DFFE), of Trade, Industry and Competition (dtic) of Employment and Labour (DEL) and the ILO.

GREEN RECOVERY ACTIVITIES

1.5. Strengthening Waste Management Legislation for a Greener Recovery

The South African Government has structured a waste management hierarchy framework starting with waste prevention, then waste reduction, resource recovery, waste treatment and as a last resort, waste disposal. The approach broadly focuses on preventing waste and diverting waste from landfill by leveraging the concept of circular economy to drive sustainable, inclusive economic growth and development in the waste sector, while reducing the social and environmental impacts of waste. Its implementation plan is designed to facilitate the creation of jobs in the waste sector and increase awareness and compliance around waste. Integrated sustainable solid waste management is increasingly recognized as a key component in the immediate response to the COVID-19 Pandemic as well as, in the transition toward an inclusive green economy and sustainable consumption patterns and practices. Research has shown that harnessing the opportunities of waste as a resource is one of the most effective solutions to minimizing the widespread environmental and human health impacts associated with current poor solid waste management practices.

The revision of the Municipal Integrated Waste Management Planning Guidelines (MIWMP), and related amendments, integrated international best practices on circular economy, and mainstreamed the principles of the National Waste Management Strategy 2020 (NWMS), international best practices learned through the COVID-19 pandemic, and promoted the integration of waste pickers into the formal economy. The recommendations for revisions were complemented by mechanisms to promote the adoption of the MIWMP at the municipal level. The integration of circular economy principles is particularly relevant to PAGE, as this economic approach can support the economic recovery in a manner that is more environmentally sustainable.

The second objective was to provide technical support to the DFFE for its revision of existing model waste by-laws. The proposed revisions to the by-laws would support the integration of international best practices on circular economy, and also mainstreaming of the principles of the NWMS, international best practices from the COVID-19 context, and promotion of the integration of waste pickers into the formal economy within the MIWMP. The revised model waste by-laws provide a regulatory mechanism to support the implementation of the revised MIWMP.

1.5.1 Further Actions Identified to Achieve Sustainability

The MIWMP was validated by national partners. The report documents recommendations for the revisions of IWMP guideline to incorporate (i) mainstreaming of principles of

National Waste Management Strategy 2020, (ii) integration of waste pickers in the municipal waste planning process and (iii) best practices and principles of circular economy, as well as those from the COVID-19 context.

A second report provided technical guidance to the DFFE for its revision of existing model waste by-laws. The report analysis of the model by-laws was to ensure that the model by-laws were inclusive of circular economy imperatives, to identify limitations of the model by-laws including conflicting by-laws and/or by-laws that conflict with the national legislation and provide recommendations on the revision of the model by-law.

The Guidelines for the development of integrated waste management plans” was reviewed to include recommendations and findings from both reports with the aim to support South Africa’s uptake of circular economy imperatives aligned to the broader objectives of the 2020 National Waste Management Strategy.

Major Stakeholders included the Departments of Forestry, Fisheries and the Environment (DFFE), of Science and Innovation (DSI), the CSIR, municipalities and UNEP.

1.6. Online Dialogues as Part of Green Recovery Support

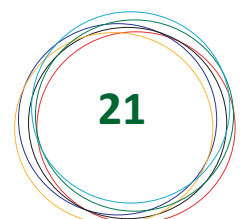
Many calls for green stimulus packages to overcome the socio-economic impacts of the COVID-19 Pandemic, were made globally, by key environmental groups, international think tanks and governments, with the expectation that these would stimulate economic activity and create jobs, while at the same time ensuring environmental stewardship.

South Africa issued its Economic Reconstruction and Recovery Plan (ERRP) on October 15th, 2020³. Its three phases are 1) to engage and preserve, 2) to recover and reform, and 3) to reconstruct and transform. Priority interventions included employment orientated strategic localisation, tourism recovery, gender equality and economic inclusion of women and youth, and large-scale public employment interventions.

Skills development is seen as one of many key enablers for the successful implementation of the plan. The ERRP refers to a number of structural reforms necessary to support economic reconstruction and recovery including addressing the weak job-creating capacity of the economy and boosting education and skills development as well as lowering barriers to entry to make it easier for business to start, grow and compete.

As part of advancing a green recovery, post the COVID-19 Pandemic, the GIZ Green Economy Transformation (GET) project in collaboration with the International Training Centre of the ILO (ITCILO), DFFE, UNEP and ILO hosted five virtual dialogue session between April and June 2021 called “Green jobs for a better future”. These dialogues explored avenues for creating employment opportunities for young people through green jobs as an important element of a Just Transition and the country’s post COVID-19 recovery. The

³ https://www.gov.za/sites/default/files/gcis_document/202010/south-african-economic-reconstruction-and-recovery-plan.pdf



dialogues provided a platform amongst social partners to appreciate increasing the number of jobs that promote a healthy environment and also offer opportunities for young people in a green economy and provided policy makers with actionable points to build a green economy with business and employment opportunities for young people.

1.6.1 Further Actions Identified to Achieve Sustainability

During the virtual green jobs dialogue series which, one of the issues identified by young people themselves was their lack of technical and managerial capacities to take full advantage of the entrepreneurship opportunities in the green economy.

Subsequently, the training programme “Green Business Acumen South Africa” was designed and delivered in November 2021 to support early-stage entrepreneurship skills and competencies amongst green entrepreneurs so that South Africa can further develop its green economy and create decent jobs for youth. The programme further leveraged support from the impact and outreach of the 2021 DFFE Driving Force for Change (DFC) Challenge, broadening the scope and deepening the content of the training element of the DFC Initiative.

The “Green Business Guideline for Small, Medium and Micro Enterprises, Start-ups and Entrepreneurs South Africa” was produced as an outcome of the training programme and aimed to consolidate some of these efforts by providing essential guidance to young entrepreneurs on how to green their products, services and processes and how to effectively position themselves in the green economy. The Guide assist entrepreneurs to complete their green business plan, and includes the components of a standard business plan (marketing, financial planning, human resources, etc.) as well components directly related to the sustainability aspects of the company (life cycle approach, cleaner production and resource efficiency and circular economy).

Major Stakeholders included the Departments of Forestry, Fisheries and the Environment (DFFE), of Science and Innovation (DSI), Organized Labour, Organized Business and the ILO.

1.7. Youth Barometer

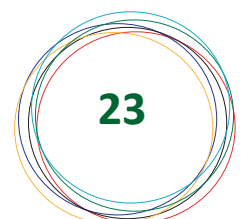
Building on previous PAGE cooperation (October 2018), namely the *National Planning Commission Pathways for a Just Transition Process*, a Youth Roundtable was hosted through the O.R. Tambo Debate Series. Chaired by the National Planning Commissioner, the key expressions in the Roundtable were that both more and wider youth inclusivity is required in the Just Transition process, and that high-level policy development should be genuinely participatory and be ‘taken to the people’.

The work stream was aimed at supporting the work of the Government of South Africa on climate change, just transition and youth employment creation, by serving as an information and consultation bridge between the youth constituency and the DFFE. The Youth Barometer is a direct response hereto. with a focus on guiding its implementation with a

bottom-up perspective by highlighting youth voices, as youth is by far the largest group associated with unemployment and lack of employability competencies and skills in South Africa.

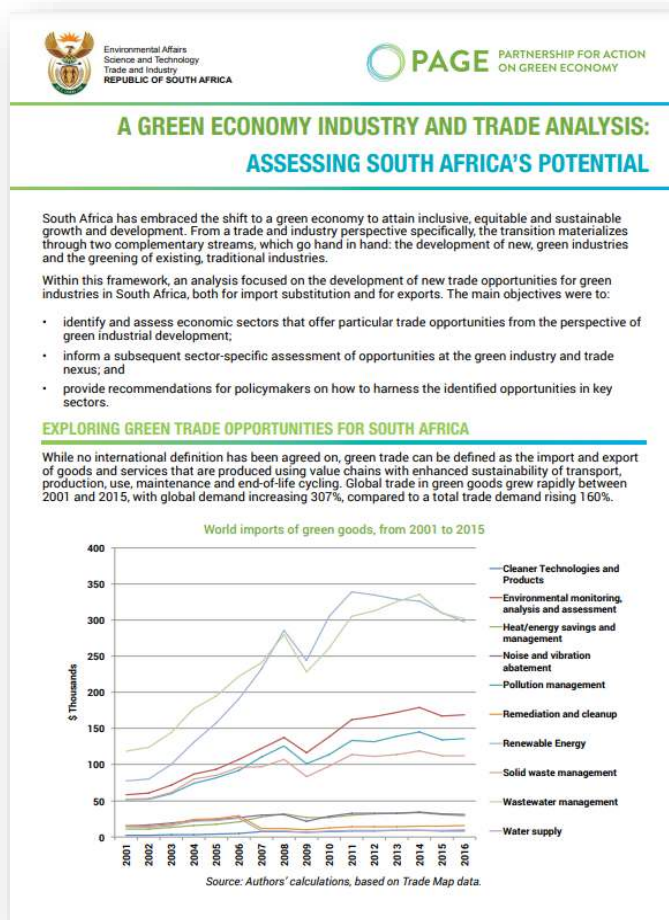
The barometer focused on the South Africa definition of youth and target the group of 15-34 years of age, and have a sub-group for youth between 15-24 years of age, which is the UN definition of youth. Policy recommendations would adopt a sectoral focus, but it is recognized that SDG7/Energy, is central to COVID-19 economic recovery for its role as a major input to any economy, and central in the just transition process associated with a shift from coal to a transition to a low carbon economy. Ultimately, the outcome of the youth barometer indicated the need for further insight into education, communication, outreach and awareness on Climate Change, Green Economy and the Sustainable Development Goals.

Major Stakeholders included the DFFE: Presidential Climate Commission and United Nations Framework Convention on Climate Change (UNFCCC) Focal Point responsible for NDC enhancement; identified youth groups and organisations and the UNDP.



OUTCOME 2: POTENTIAL AND ENABLING FACTORS FOR SELECTED GREEN ECONOMY SECTORS/INDUSTRIAL SEGMENTS EXPLORED IN-DEPTH, INFORMING PROPOSALS FOR SECTOR REFORM PROMOTION

2.1. Green Economy Industry and Trade Analysis



To support the development of green industry, PAGE collaborated with national partners to produce the [Green Economy Industry and Trade Analysis \(GEITA\)](#). The GEITA study offered a comprehensive analysis of South Africa's green industry and trade position, and identified and analysed four priority sectors that have high potential for green trade promotion. The priority sectors identified were small-scale embedded generation systems, water technology, the biogas-to-transport value chain and bio-composite economic sectors as green technologies that offer particular trade opportunities from the perspective of green industrial development. PAGE's work has subsequently informed a sector-specific assessment of opportunities at the nexus of

green industry and trade and provided recommendations for policymakers on how to further harness these opportunities.

Biomaterials was one of the sectors which was identified as a promising green trade and industrial opportunity for the country. Biomaterials offer the chance to position the country within a rapidly developing technological space that has the potential to create new markets for agricultural and waste by-products, close competitiveness gaps in the local plastics

market, and move large-scale manufacturing industries like packaging away from their reliance on petrochemicals.

Based on this preliminary research, a Draft Action Plan and Implementation Strategy, focusing on biomaterials, was developed in 2017/2018 by United Nations Environment Programme (UNEP) and United Nations Industrial Development Organization (UNIDO). Due to the lack of knowledge about the sector, the design of the Draft Action Plan and Implementation Strategy followed a problem-solving approach which focused on supply-side factors of the South African industry. The analysis focused on understanding what would be required to develop the local industry. It investigated avenues to address three core problems associated with the development of biomaterials in South Africa: i) the availability of feedstock; ii) the commercialisation of emerging technologies; and iii) the competitiveness of the industry, skills availability, and export market opportunities.

2.1.1 Remaining Challenges

Studies found that the most fundamental problem facing the development of biomaterials manufacturing on an industrial scale is the uncertainty within the market for feedstock. A full value chain analysis needs to be undertaken including a focus on skills required, enterprise development and market opportunities. Studies and respondents diverge substantially on the state of feedstock for biomaterials. Other respondents claim there is enough available feedstock, but that it is highly fragmented and difficult to access. In some cases, high potential feedstock, such as sugarcane bagasse, is used for other purposes, such as energy generation. This creates uncertainties about the willingness of companies to sell their feedstock, and on the effective price that would need to be paid to access that feedstock. It must be noted that a key challenge which was identified, was on feedstock security to ensure continuous supply for manufacturing at an industrial scale. Although, there have been differing views with regard to extent of feed stock availability.

Understanding the appropriateness of feedstock is equally complex, with waste in particular requiring careful handling and sorting to be viable for further production. These complexities undermine the development of offtake options for existing feedstock, and in so doing prevent the development of new, innovative feedstock types such as cactus pear or algae. Inadequate feedstock systems risk leading to the South African biomaterials market becoming increasingly reliant on the import of intermediate bio-chemicals for plastics production. At the same time, understanding the existing and upcoming markets and how to seize the opportunities associated with them remains largely unexplored. The development of existing and potential markets and associated marketing strategies is critical to drive the growth of biomaterials in South Africa. This is important to ensure sufficient demand, at least domestically, for biomaterials and bridge the gap between supply and

demand. The development of the bio composite feasibility study was aimed at addressing issues related to both supply and demand of biomaterials.

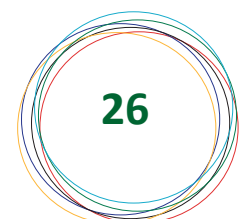
2.1.2. Further Actions Identified for Achieving Sustainability

Following the completion of the market demand strategy, which explored the potential of biomaterials through an entire value chain analysis and more comprehensively as the development of the local biomaterials industry requires multiple interventions at multiple levels. The research complemented the initial high-level case study as well as the supply-side focused action plan and implementation strategy. From a supply perspective, structuring interventions along the value chain to assure weakness in one part (technology, inputs, production) does not act as a barrier for the development of existing strengths is critical. On the demand side, similarly, understanding the linkages between the different stages of the value chain will inform where the key demand drivers (and possible bottlenecks) exist, both locally and globally. Identifying the lead companies (or entities) capable of driving the demand for biomaterials is instrumental to establish pressure points which would create positive value at each step throughout the value chain. This will bring a critical understanding of possible customers and their characteristics, drivers and requirements.

Apart from the existing initiatives in the country, UNIDO has been developing a second phase of the Clean Technology Innovation Programme in South Africa (GCIP-SA) funded by (Global Environment Facility (GEF). It incorporates a chemicals and waste component that includes the development of the biomaterial sector that will help country in the long run to reduce emissions of Persistent Organic Pollutants (POPs), mercury and other pollutants associated with the production and burning of plastics and other fossil fuel-based products.

In addition, in July 2019, the Government of Japan and UNIDO signed a funding agreement for a US\$1.8 million project to support a transition from conventional plastics to sustainable alternatives in South Africa. UNIDO and the Council for Scientific and Industrial Research (CSIR) will collaborate to strengthen the capacity of local industry to manufacture alternative materials. As such, work which was undertaken through the PAGE Programme certainly complemented ongoing work on biomaterials by the various key role players, in expanding the biomaterial industry in South Africa.

In 2021, a Biomaterial Market Demand Study was validated by national partners who discussed the work stream on stimulating demand for environmentally degradable bioplastics in South Africa. This is an avenue that offers a potential decarbonization option for the petrochemicals value chain. The Market Demand Study contributes to the Plastic Master Plan, under development by the Department of Trade, Industry and Competition, which lays out an overall strategy for the plastics industry.

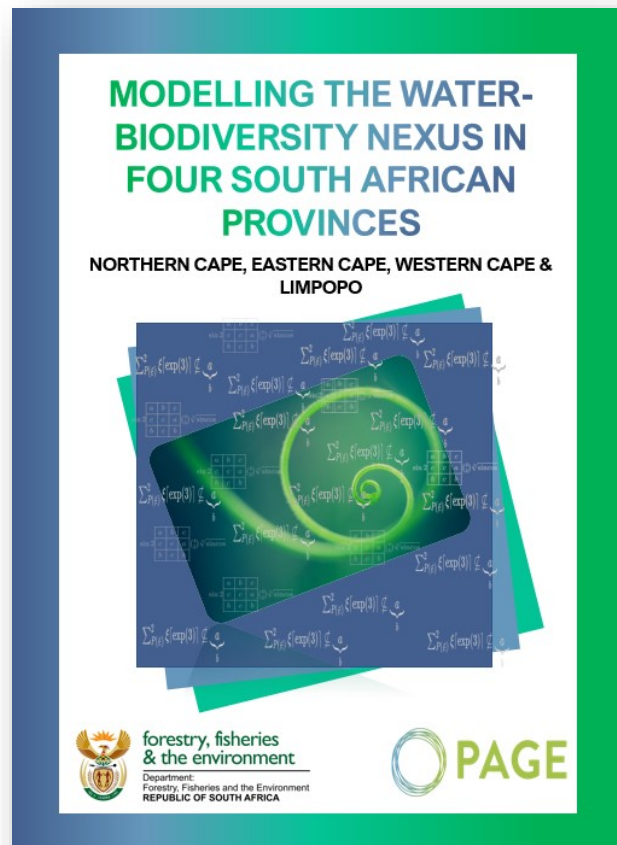


Major Stakeholders included the Departments of Trade, Industry and Competition (dtic), of Forestry, Fisheries and the Environment (DFFE), of Science and Innovation (DSI), Private Sector, UNEP and UNIDO

2.2. Measuring the Nexus between Water and Biodiversity in Four Provinces

South Africa is experiencing an ongoing water crisis, with demand increasingly exceeding supply. South Africa is a water-scarce country due to its geographical location and limited and unreliable rainfall patterns across the country. This presents an opportunity to re-examine policies that can address water supply, treatment, reuse and leakages.

To support this, PAGE in collaboration with DFFE sought to update the previously-developed South Africa Green Economy Modelling (SAGEM) report, which used system dynamics modelling to assess the impacts of green investments in select economic sectors. In particular, the update included modelling of the water-biodiversity nexus, with a sub-national focus on the provinces (Northern Cape, Western Cape, Eastern Cape and Limpopo) worst affected by the water crisis, such as the high lying areas on the central plateau. This work began with a preliminary stakeholder workshop that identified several policy processes, such as the Master Water Plan from Department of Water and Sanitation.



2.2.1 Remaining Challenges

Despite significant data collection efforts, certain provincial data gaps persist. The gaps in data mainly concern information about the development of water demand and supply over time, agriculture growing seasons, irrigation systems and crop irrigation requirements, wastewater treatment and Nitrogen loadings from various sources. To overcome constraints related to these data gaps, assumptions based on international data were used. The assumptions used were similar across the four provincial models. The replacement of assumptions made with provincial data would contribute to improving the customization of the models to the respective provinces, which leads to reduced uncertainty and in turn higher accuracy of model projections.

2.2.2. Further Actions Identified for Achieving Sustainability

Post engagement with four of the nine provinces, the modeling exercise provided potential insights into differing rainfall patterns and the implications on the agricultural sector. The publication also reflected on the implications of extensive chemical fertilizer use and concluded on potential short to medium term recommendations for policy redress and practical action, for consideration.

Major Stakeholders included the Department Forestry, Fisheries and the Environment (DFFE), of Human Settlements, Water & Sanitation, provincial Departments of Eastern Cape, Western Cape, Northern Cape and Limpopo, key social partners and organizations such as the Water Research Commission (WRC), South African National Biodiversity Institute (SANBI), South African Environmental Observation Network (SAEON) and the United Nations Environment Programme (UNEP).



GREEN RECOVERY ACTIVITIES

2.3. PAGE Support to Existing and Emerging Green Enterprises to Contribute to Green Economic Recovery in South Africa

In 2020, South African government published its [Economic Reconstruction and Recovery Plan](#). The plan recognises green economy interventions as a critical factor in not only addressing the country's persistent triple challenge of inequality, poverty and unemployment, but also in offering a sustainable solution to driving economic recovery and ultimate competitiveness. One of the obstacles identified is the challenge that young women and men face in obtaining the necessary business development support to translate innovative ideas into bankable and comprehensive proposals that could be presented for financial support thus turning concepts into green business ventures.



Photo: Indalo Inclusive

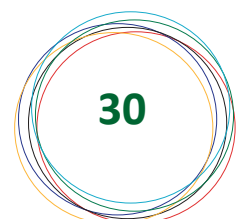
This work stream aimed at a green and inclusive recovery through the support to innovative, green and growth-oriented entrepreneurs. The Green Enterprises support through PAGE focused on three broad categories which provided technical support to sustain and upscale the DFFE Driving Force for Change (DFC) and the Imvelisi African Enviropreneurs (Imvelisi) programmes run by the DSI, as well as support to Business Development Services. Imvelisi is an impactful ideation and early-stage business development platform that is bridging the gap that exists in the country's green economy by developing young eco-innovators and their ideas through an innovative Enviropreneurs Programme. Imvelisi Enviropreneurs Programme equips aspiring young entrepreneurs with knowledge, skills, tools and resources

to develop their ideas into actual businesses. The DFC initiative is a youth support initiative that provided financial and non-financial support in the in areas of adaptation to climate change, waste management and biodiversity and ecosystem services, manufacturing, eco-tourism with the view to contributing to achieving South Africa's Nationally Determined Contributions (NDC) and the Sustainable Development Goals (SDGs).

These high-profile and highly visible initiatives were already being piloted and therefore presented an opportunity for PAGE to provide support to amplify, scale up and advance the emerging green economy gains, achieved thus far. PAGE supported and contributed to the growth of green solutions and ventures to mitigate the socio-economic impact of the pandemic, but also to stimulate innovation for a greener and more just economic recovery. A total of thirteen beneficiaries completed the training and further refined their respective business planning to better prepare these small businesses in advancing their green business agenda and ensure that their business operations have minimal impact on the environment, in the medium to long term.

A key area of support, in addition to the successful confirmation of post COVID recovery funding for identified activities, UNEP in partnership with Cambridge Econometrics undertook E3ME modelling exercise on South Africa's Economic Reconstruction and Recovery Plan. The Report provides 3 potential economic recovery scenarios which were premised on the extent of decarbonisation activities, including increased renewable energy generation vs existing dependence on coal-based energy generation. Further, the scenarios also provided potential timelines for achieving increased levels of carbon emission reduction which was indirectly proportional to shorter timelines. Training was also provided to public sector officials. More specifically, officials from the National Treasury were further trained and also received access to the software application, in order to inform future planning through economic modelling. The National Treasury has also developed two policy briefs, in this regard.

Major Stakeholders included the Departments of Forestry, Fisheries and the Environment (DFFE), of Science and Innovation (DSI), National Treasury, Green Matter, the ILO and UNIDO.



OUTCOME 3: STRENGTHENED CAPABILITIES THROUGH ENHANCED GREEN ECONOMY LEARNING INCLUDING TRAINING COURSES AND KNOWLEDGE SHARING PLATFORMS

3.1. Green Economy Learning Assessment



To build educational institutional capacity to promote the green economy, PAGE focused on identifying green economy learning needs and addressing them through innovative, tailored learning solutions. Following the completion of the [Green Economy Learning Assessment](#) (GELA) for South Africa, PAGE supported the Centre for Environmental Management at North-West University (CEM-NWU) to develop a green economy e-learning course, aimed at government officials at all levels of civil administration.

The objective was to raise awareness and develop knowledge and capacities to include a green economy focus in government policies and programmes, including at provincial and municipal level.

The course is also aimed at the private sector, trade unions and civil society. The intake for the first sponsored edition of the Green Economy e-course was limited to 30 participants of which 24 completed the course (16 women and 8 men).

3.1.1. Further Actions Identified for Achieving Sustainability

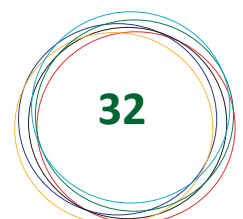
CEM-NWU provided joint methodological and technical support for the scale-up of e-learning course in South Africa. In order to ensure the uptake and sustainability of the e-learning course in the medium to long term, the course has been incorporated into the CEM portfolio of environmental management short courses and is being offered twice a year. As was the case with the first delivery, the size of participant groups are limited to 30, to ensure adequate facilitation arrangements. The target audience for future deliveries are both policymakers, as well as project administrators in government as well as front line implementation staff. The course fee for 2022 was set at R6825, which was approximately at half price when compared to other CEM courses.

To ensure the uptake and sustainability of the e-learning course in the medium to long term, the following actions have been undertaken.

- 1) Inclusion of modules in two Masters programmes at the NWU;
- 2) NWU collaboration with other learning institutes, such as School of Governance, University of Venda; and
- 3) NWU to integrate the training into other projects such as face to face training of unemployed young people in the North-West (part of Youth Environmental Services Programme from DFFE).

NWU is expected to fulfil its sustainability plan commitments as articulated in the e-learning course final report presented after completion of the pilot programme. Engagements with University of Fort Hare and NWU were undertaken in exploring roll out of the course as an elective on Students doing Honours in Economics.

Major Stakeholders included the Departments of Higher Education and Training (DHET), of Forestry, Fisheries and the Environment (DFFE), of Science and Innovation (DSI), Southern African Regional Universities Association (SARUA), Tertiary Education & Research Network (TENET), Sector Education and Training Authorities (SETAs), National learning institutions and the United Nations Institute for Training and Research (UNITAR).



3.2 Green Economy Academy

In furthering its engagement with multi-sectoral green economy actors, PAGE held a National Green Economy Academy in 2018, which sought to build the capacity of key stakeholders to support green economy policy implementation and to promote knowledge-sharing among South Africa's nine provinces, eight of which embarked on drafting provincial green economy related strategies, notably in renewable energy. Beyond its specific learning objectives, the academy contributed to enhancing institutional capacities for transformative change towards greener economies at the provincial level, and created a community of champions who may lead action and influence GE imperatives across their networks. Among the follow-up proposed actions, concrete initiatives on developing guidelines for micro-, small- and medium-sized enterprises in the renewable energy sector, capacity development in provincial-level public procurement, and the consolidation of an action network to facilitate knowledge exchange, were direct outcomes from the Academy.

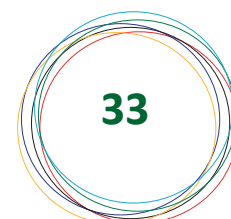
3.2.1. Remaining Challenges

Given that PAGE work mainly targeted government sector departments, this impacted on the limited reach at provincial and local government levels. Gaps have been identified at both provincial and local government institutional levels, with reference to human resource capacity in pursuing a green economy in concrete programmes and action plans, although the situation varies greatly from province to province and from municipality to municipality. Whilst many provinces have embarked on developing green economy strategies, much still needs to be done in terms of implementation of green economy activities.

3.2.2. Further Actions Identified for Achieving Sustainability

It is recommended that a Green Economy Academy at local government level should focus on building capacity of local trainers and embedding it in local institutions to ensure sustainability in South Africa. Such capacity development should also continue to target all spheres of government, private sector, labour movements and civil society organisations as the green economy continues to grow and become increasingly important for sustainable development in South Africa.

Major Stakeholders included the Department of Forestry, Fisheries and the Environment and Provincial counterparts, a select number of civil society and private sector representatives under the guidance of the International Training Centre for the International Labour Organisation (ITC-ILO).



3.3. Training on Trade and Climate Smart Agriculture Developed and Piloted with Extension Officers



Climate Smart Agriculture (CSA) is now widely promoted and accepted as the best approach for addressing both the causes and effects of climate change. CSA was identified as one of the key areas that could contribute towards the greening of the South African economy. Since agriculture is both a contributor to and victim of climate change, efforts to

green the economy through this sector must address both aspects. CSA is a farming approach that could help the South African agricultural sector to diversify its farming practices and reduce the looming risks and improve food security of its citizens whilst creating green jobs for smallholder women farmers who are currently in the periphery of the economy. Climate-resilient sectoral plans have the potential to create green jobs and directly address the plight of those most impacted by climate change, the rural poor women, youth, indigenous peoples, and vulnerable marginalized groups.

Climate change is negatively impacting the agricultural sector in South Africa, with water resources becoming increasingly scarce, while a growing number of people depend on agriculture for, income and employment. With a focus on food security, there is a great need for smallholder farmers to increase the efficiency of current agricultural practices and introduce innovative agricultural practices to increase yields, strengthen agricultural value chains, and ensure access to markets. CSA can be described as agricultural practices, approaches and systems that sustainably and reliably increase food production and the ability of farmers to earn a living while protecting and restoring the environment.

The interventions pursued were designed to reinforce and complement other support programmes on the green economy, such as SWITCH Africa Green (SAG). Furthermore, the GEISA conducted at the outset of PAGE SA found that agriculture and energy are some of the most important sectors for action on green economy and with the highest potential to create jobs in the country.

The need for further training and capacity development, especially in technical and vocational education and training (TVET) has been identified as a supply measure to support

the shift to more sustainable agricultural production as vocational graduates often do not have the required skills and competencies to support the green economy. To address this gap and to complement the 'Actionable Guidelines for the Implementation of Climate Smart Agriculture in South Africa', UN Environment Programme's Environment and Trade Hub and UNITAR developed and piloting a training on CSA and trade opportunities stemming from the transition to more sustainable agricultural practices.

Subsequent to the completion of the Actionable Guidelines for the Implementation of Climate Smart Agriculture in South Africa, PAGE developed a training module on trade which aimed at addressing sustainable supply chains for trade suitable for both extension workers and provincial policy makers in the Department of Agriculture, Land Reform and Rural Development (DALRRD). The training intervention was delivered to extension officers and policy makers, with the intention to strengthen understanding and capacity to plan and implement climate smart practices and policies. Opportunities for the institutionalization of knowledge/training provision after activity's end, was addressed briefly. However, it will likely be an elective, not a mandatory module. The workshop on Green Economy and Trade followed a combined approach of didactic methodologies designed to meet the learning needs of the target audience. The training comprised of presentations (delivered by practitioners in the field), discussions, exercises, sector-specific case studies, discussions and development of a national-level trade policy measure in a group setting.

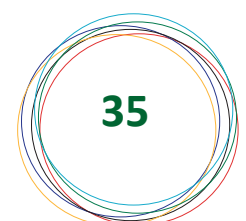
Major Stakeholders included the Departments of Trade, Industry and Competition (dtic), of Agriculture, Land Reform and Rural Development (DALRRD), of Forestry, Fisheries and the Environment (DFFE), Private Sector, GIZ, UNITAR, UNEP and SAG UNEP.

3.4. Skills for Green Jobs Regional Training Hub

The first Africa Green Jobs Assessment Institutions Network ([GAIN](#)) Training Hub was launched by the Government of South Africa, the University of Pretoria and the ILO during the 2019 Ministerial Conference on the Green Economy. The overall purpose for establishing a regional GAIN Training Hub is to ensure readily available capacity for assessing the employment effects of climate and sustainable development policies at an African higher learning institution.

The objective of establishing the GAIN Hub is two-fold;

- 1) institutional capacity development in economic methodologies and models suited to analyse labour market outcomes of climate and environmental policies, and
- 2) evidence-based research and policy advice in developing and low-income countries through South-South Cooperation.



The GAIN network developed a methodological approach and training guidebook to gather statistics, integrate them into the system of national accounts and build Green Jobs Assessment Models (GJAM), at national level. The models allow countries to analyse and plan for social and employment outcomes of climate and sustainable development policies.

The first GAIN capacity development workshop in Africa, was held from 9-13 September 2019 and was focused on climate policies that countries had to submit through the National Determined Contributions (NDCs) in 2020. Policymakers and researchers from six African countries (Mauritius, Ghana, Senegal, South Africa, Rwanda and Zimbabwe) from Ministries of Finance, Ministries of Labour, Ministries in charge of Climate Change, and Social Partners discussed key social, economic, and employment outcomes that climate policies must consider. The World Bank, the European Bank for Reconstruction and Development (EBRD), the African Development Bank (AfDB), UNFCCC, UNDP, GIZ, and ILO Regional and Sub-regional Office collaborated as a collective in ensuring the successful delivery of the training.

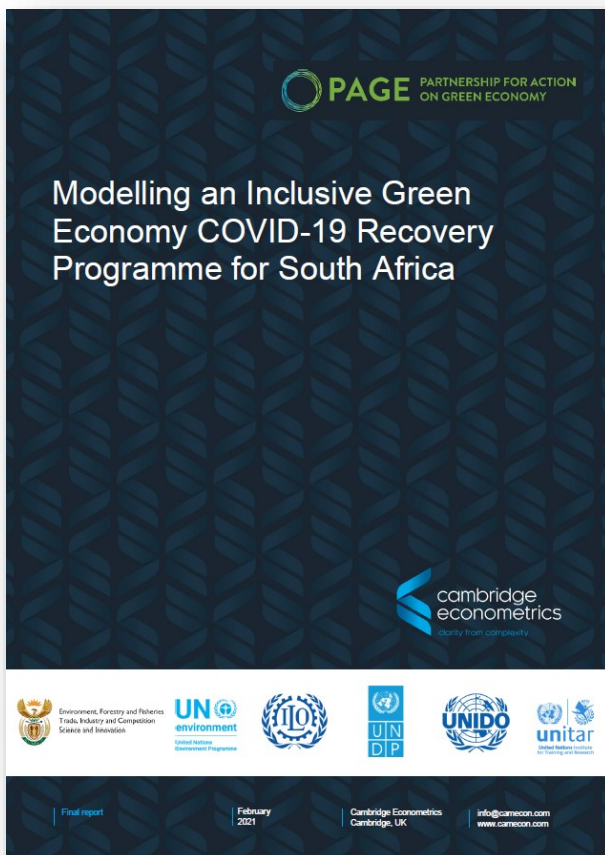
3.4.1. Further Actions Identified for Achieving Sustainability

Following the successful training in institutional capacity building programme on green jobs modelling, PAGE will further explore partnership opportunities with the Training Hub with focus on green jobs assessments and localising the ITC-ILO Green Economy Academy in the future. Further details about the implementation model of these two work streams will continue in direct liaison between the PAGE Global secretariat, ILO and the GAIN Training Hub. A second training provided by GAIN Hub focused on capacity building of South African Government in the Green Jobs Assessment Model (E3ME) for COVID-19-recovery planning and beyond. The training was conducted in collaboration with Cambridge Econometrics (see next section).

Major Stakeholders included earlier-mentioned key ministries, Countries, University of Pretoria GAIN Training Hub and the ILO.

GREEN RECOVERY ACTIVITIES

3.5. Capacity Development of South African Government in the Green Jobs Assessment Model (E3ME) for COVID-19 Recovery Planning



This work stream built on scenario modelling of green recovery and was implemented with the National Treasury as the key national partner. The aim of the training was to transfer skills necessary to apply the model for further uptake by the National Treasury.

Further, to ensure Government officials were fully capacitated to use the model as a tool for future policy planning in the field of economic development, employment and labour market, green economy and adaptation to climate change. The programme trained policy makers and senior officials (economists and statisticians) in the Government of South Africa, notably Treasury, Department for Employment and Labour, DFFE and the Presidential Climate Commission (PCC).

The goal of this work stream was to develop the capacities of national partners in a macro economic model to

assess social and employment impacts of alternative COVID-19 recovery plans and beyond. Exposure to the training and use of the modelling software can assist the South African Government to assess the employment and labour market impacts and thereby, better plan for social and employment outcomes of COVID-19 recovery and any future climate and environmental policies. The Green Jobs Assessment Model E3ME, imparted to public sector officials will assist in analysis of public sector policies' impact on key development indicators such as employment, Gross Domestic Product (GDP), skills, gender, income distribution, inequality, Carbon Dioxide (CO₂) emissions and biodiversity.

3.6. PAGE Ministerial Conference and Cape Town Action Pathways Towards 2030

South Africa hosted the 3rd Ministerial Conference on the 10-11 January 2019, in Cape Town, South Africa. The Conference was a major success both through the mobilisation of key actors, and the substance and relevance of issues addressed by ministers and high-level participants.

The Conference reaffirmed the value of joint programming and praised the PAGE approach considering the ongoing UN reform which require UN agencies to coordinate better to ensure synergies, complementarity and efficiency at country-level operations.

The Conference resulted in a draft outcome document labelled *Cape Town Action Pathways Towards 2030* highlighting the following 5 action items that all PAGE agencies are expected to act upon:

- 1) Reinvigorating our economies as inclusive green economies,
- 2) Anchoring green strategies and policies in long-term development frameworks,
- 3) Focusing on economic, social and political inclusion,
- 4) Creating the future of work we want, and
- 5) Strengthening partnerships and multilateralism.

PAGE South Africa has reflected against the key outcomes and has made considerable progress in adapting and operationalizing them.



OUTCOME 4: COMMUNICATION, OUTREACH, AND KNOWLEDGE SHARING

4.1. Communication and Outreach to National Policymakers and the Public

A PAGE South Africa Communication Tools pack was developed, this includes development a video documentary and infographic of green economy landscape in South Africa and selected PAGE success stories illustrating impact of PAGE support in the following areas, i) coordination of green economy policy, planning and implementation, ii) selected green economy sectors, and iii) capacity building on green economy learning. Plans to review the current PAGE South Africa story and integrate the green recovery work are currently underway.

4.2. South-South and Triangular Cooperation and Learning on IGE

South Africa graduated from PAGE and is now known as a PAGE Alumni country. South Africa is committed to share its experience in successfully implementing PAGE. This will be done in the context of South-South cooperation. During the Global Academy on Green Economy countries including Argentina, Kazakhstan, Senegal, Guyana and Mauritius expressed an interest for a peer-peer learning exchange. The areas of collaboration and inter-country exchange were ranging from successful interventions to support green industry development, the promotion of green jobs and sustainability planning. The 2019 Global Academy on Green Economy was the first platform to further elaborate on PAGE Countries and South-South Cooperation. PAGE South Africa proposed for a structured alumni engagement platform for cross pollination amongst PAGE countries, and sharing experience with countries, which recently joined the programme.

PAGE South Africa has engaged in peer-to-peer learning exchanges with other PAGE countries. A successful bilateral exchange took place between South Africa and Argentina, during which one of South Africa's leading trade union confederations, the Congress of South African Trade Union (COSATU), shared best practices on just transition to inclusive green economy. This exchange was captured in the recent PAGE publication "*Argentina: elaboration of a strategy of Promotion of Green Employment*", underscoring the value of South-South collaboration and exchange when working towards an inclusive green economy, by different geographical regions.

5. CONCLUSION

South Africa graduated out of the Global PAGE Programme in October 2022. The Global PAGE Programme was initially planned to operate from 2013 – 2020, however, due to the global COVID-19 Pandemic, PAGE funding partners and the partner agencies jointly supported the extension of the Global PAGE Programme, beyond 2020. In addition, to this provision, additional finances became available to increase the reach in terms of the number of countries to be supported through the Programme. Subsequently the Programme for South Africa was extended by two years.

The PAGE-SA Sustainability Report provides key insights into the initiatives which were supported in advancing the transition to an inclusive low carbon economy. The PAGE-SA also served to forge closer working relations between sector ministries, build capacity, add to the green economy knowledge base, and support policy-related imperatives for new and/or emerging industries.

An outstanding achievement worthy of praise is certainly the Green Jobs Assessment Model for post-COVID-19 recovery planning. The Report which was facilitated through PAGE-SA and undertaken by Cambridge Econometrics, applied the Energy-Environment-Economy Global Economic Model (E3ME). The Model takes into consideration energy use, economic activity, environmental challenges and carbon emissions, in assessing short and long-term impacts to the economy, relative to climate change policies, at the country level. The Model provided scenarios for South Africa, which is mapped against the 2021 Economic Reconstruction and Recovery Plan (ERRP). The ERRP is a post-COVID-19 recovery plan for the Country.

The work of the Just Energy Transition Partnership (JETP) and the supporting Investment Plan (IP), aligns well with Scenario C of the E3ME Modeling Report, which supports the advancement of Renewable Energy (RE) generation for South Africa, if South Africa is to meet its voluntary targets as indicated in its Nationally Determined Contribution (NDC). Gaining momentum in the manufacturing sector for RE related components may provide South Africa with both competitive and comparative advantages on the African continent.

In addition, areas of work related to growing green jobs, currently witnesses the advancement of sectors, such as green hydrogen production for both domestic and export markets, and identifies South Africa as a first mover, due to key levers.

The PAGE-SA Programme also focused on support to SMMEs through the additional financial resources which were made available through the post-COVID-19 recovery funds. The initiative supported a total of 16 SMME's through capacity building, business plan development and personal mentoring. Post the completion of the initiative, the DFFE in partnership with the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) – Green Economy Transformation (GET) Programme also supported the SMME work of PAGE through the development of a Guideline: Green Business Guideline for SMME's, Start-ups

and Entrepreneurs. Several information sessions were undertaken by the DFFE to promote green enterprise development for start-ups, entrepreneurs and SMME's.

It is equally imperative to ensure that ongoing support (i.e., enabling environment, skills development and ongoing dialogue) and incentives are in place to support SMMEs and responsible business conduct. In this regard the Department of Small Business Development (DSBD) as a lead Ministry is the key stakeholder in advancing green enterprise development for SMME's

In view of a contracting Gross Domestic Product (GDP) and projected outlook in terms of significant economic recovery for South Africa, achieving positive growth of 1,4% is projected by 2025 as indicated by the economic outlook of the National Treasury. A similar economic outlook has been indicated by the Organisation for Economic Co-operation and Development (OECD). Therefore, South Africa requires significant investment to re-ignite economic activity for the short, medium and long-term respectively.

Other factors which require focus, and which impact the current sluggish economy are: reducing unemployment levels, energy security, reduced labor action, an enabling policy environment, and political will/stability, more specifically with reference to the 2024 National Elections.

South Africa is the only participating country to have hosted the PAGE Ministerial Conference, in 2019. Several thematic session papers were prepared to inform discussions at the Conference. The subsequent analysis of the session papers outline several significant issues for South Africa and other emerging economies. More specifically vulnerability to impacts of climate change due to extreme weather events (i.e., droughts, floods, fires, etc) and socio-economic challenges of poverty, and high levels of unemployment, combined, these are known as transitional risks. These transitional risks further impact the extent of direct foreign investment, transition finance for hard to abate sectors and reduces its comparative and competitive advantage which are informed by a sluggish economy.

Key for South Africa is resource efficiency in pursuit of a low carbon and inclusive economy and making inroads in advancing post-COVID-economic recovery, is equally important.

The PAGE-SA Programme has drawn to a close and leaves behind significant levers which inform the transition to an inclusive low carbon economy.

