"JWALE KE NAKO YA KOTULO, RE A KUBELETSA"

# FREE STATE GREEN ECONOMY STRATEGY 2014

the detea
the department of economic development, tourism and environmental affairs
FREE STATE PROVINCE

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# FREE STATE GREEN ECONOMY STRATEGY

**Developed by:**

bembani GROUP (PTY) LIMITED

# EXECUTIVE SUMMARY

## Introduction and background

The Free State Province is faced with a number of challenges. Key to these challenges is the high unemployment rate, poverty, low economic growth, as well as degradation of the natural environment. This erosion of social and natural capital creates a need to re-look at the economic activities in alignment with the current global and national trends. This calls for the need to pursue the green economy agenda.

The Free State province has aimed to transit to Green Economy by the year 2030. Each of the four district municipalities and the metro has come up with their vision and a mission statement. The province has drafted long-term and short term building blocks to the Green Economy transition. Resource efficiency, low carbon growth and job creation. The sectors identified for green economy transition include energy and energy efficiency, transport and mobility, water, buildings and built environment.

The South African government has embraced Green Economy as a vehicle for sustainable economic development. Green economy is recognised by the government as one of the key economic drivers in the Medium Term Strategic Framework (MTSF) 2009 – 2014, Outcome 4 (Decent employment through inclusive economic growth), Outcome 10 (Environmental Assets and natural resources that are valued, protected and continually enhanced), in the National Development Plan Vision 2030 (NDP) and in the New Growth Path announced by Cabinet in October 2010. The government sees Green Economy translating to better returns on natural, human and economic capital investments; more green and decent jobs; more energy and material efficiencies in production processes; reduced greenhouse gas emissions; extracting and using fewer natural resources; creating less waste; and reducing pollution and social disparities.

Free State is one of the nine Provinces in South Africa and the third largest in terms of spatial extent with a population of about 2.8 million distributed within four district municipalities and one Metro namely, Xhariep, Lejweleputswa, Fezile Dabi and Thabo Mofutsanyana municipalities and Mangaung Metro. The province contributes about 4.7% to the South African economy with a Gross Domestic Product (GDP) of R65 billion and per capita GDP of R21 753 in 2004.

The Free State Province is faced with a number of challenges. Key to these challenges is the high poverty levels, HIV/AIDS, brain drain, lack of appropriate skills and environmental degradation. In 2005, the province had a high unemployment rate of 31.7% which, although it decreased to 26.5% in 2006, it rose as high as high 35.9% in 2007, then declined but remained as high 32.6%. As of 2011, the national unemployment rate of the province is 29.8%). There is also erosion of social and natural capital creates a need to re-look at the economic activities in alignment with the current global and national trends. This calls for the need to pursue the green economy agenda.

To address these challenges, and following the South Africa's National Government directive that requires all government departments to develop implementation plans and align their programmes with the job creation imperative, the government of the Free State has set their vision to transit to green economy by the year 2045. Each of the four district municipalities and the metro has come up with their vision and a mission statement. The province has drafted long-term and short term building blocks to the green economy transition being resource efficiency; low carbon growth and job creation focussing on agriculture, energy and energy efficiency, infrastructure, transport, water, buildings and built environment sectors.

## Green Economy – Global Context

Green Economy – an economy that meets the demands for higher living standards for a larger global population, while at the same time, adjusts to tightening environmental and natural resource constraints is now accepted as the economic development pathway and a vehicle to sustainable development paradigm. The trend of environmental degradation and wide-spread poverty has changed the course and the nature of how global economies should, and in future, will operate. Resource-intensive growth of the past is systematically being replaced by 'green' growth. Green Economy is characterised by technological progress that boosts not only material and energy efficiency but also labour productivity thereby bridging the technological gap and the productivity gap that has always distinguished the developing economies from the developed. A green and inclusive economy ensures that public policies are used strategically to re-orient the process of economic growth towards such a sustainable pathway, such that, issues of fairness in income distribution and social investment as well as planning for long-run energy and resource efficiency are included in the redefined set of economic policy goals.

## The Free State Green Economy Strategy

This green economy strategy for Free State Province (FSGES) was developed in alignment with the national green economy strategy elaborated in the National Green Economy Framework and Green Economy Accord, as well the Free State Provincial Growth and Development Strategy. The development process was spearheaded by the Department of Economic Development, Tourism and Environmental Affairs (DETEA).

The objective was to develop a green economy strategy to assist the province to:

- Improve environmental quality and economic growth;
- Develop green industries and energy efficiency;
- Expand productive capacity and service delivery;
- Adopt sustainable consumption and production processes;
- Improve policy making, permitting, monitoring and enforcement on Green Economy Initiatives/Programmes; and
- Create decent green jobs and build capacity of relevant personnel from DETEA, municipalities and other relevant stakeholders.

## Strategy Development Process

The FSGES development process was made up of two main components: the desktop component -literature review; and the consultative process. Review of relevant literature established international trends in green economy including global frameworks and perspectives in green economy as well as policy and the legal frameworks that govern a low carbon economy, and contextualized in South Africa perspective.

The consultation process aimed at building the capacity of the stakeholders involved, ensure buy-in and proper alignment. The stakeholder consultation workshops were held at each of the district municipalities in the province. The stakeholders were drawn from the private sector/ business groups and associations; farming groups and associations; civil society organizations; government departments from the three tiers - national, provincial and local authorities/municipalities (metropolitan, district and local municipalities); academia; trade unions; women organizations; regional bodies/organizations; and international organizations.

## Key outcomes and Outputs

- A database of all the stakeholders is developed
- For each of the district municipalities, in terms of green economy transition, also identified are:
  - The key economic and environmental challenges (and threats to natural resources) at community and/or at policy level;
  - Key sectoral challenges; and

* The opportunities that green economy can deliver both in the short and long terms.
  - Sectors with highest potentials for greening the economy are identified and diverse projects and programmes are prioritized that the province can use as a vehicle towards achieving sustainable development in Green Economy transition.
  - A long term human industrial as well as investment development opportunities are provided.
  - Business cases for each sector were also developed.

## The Implementation plan

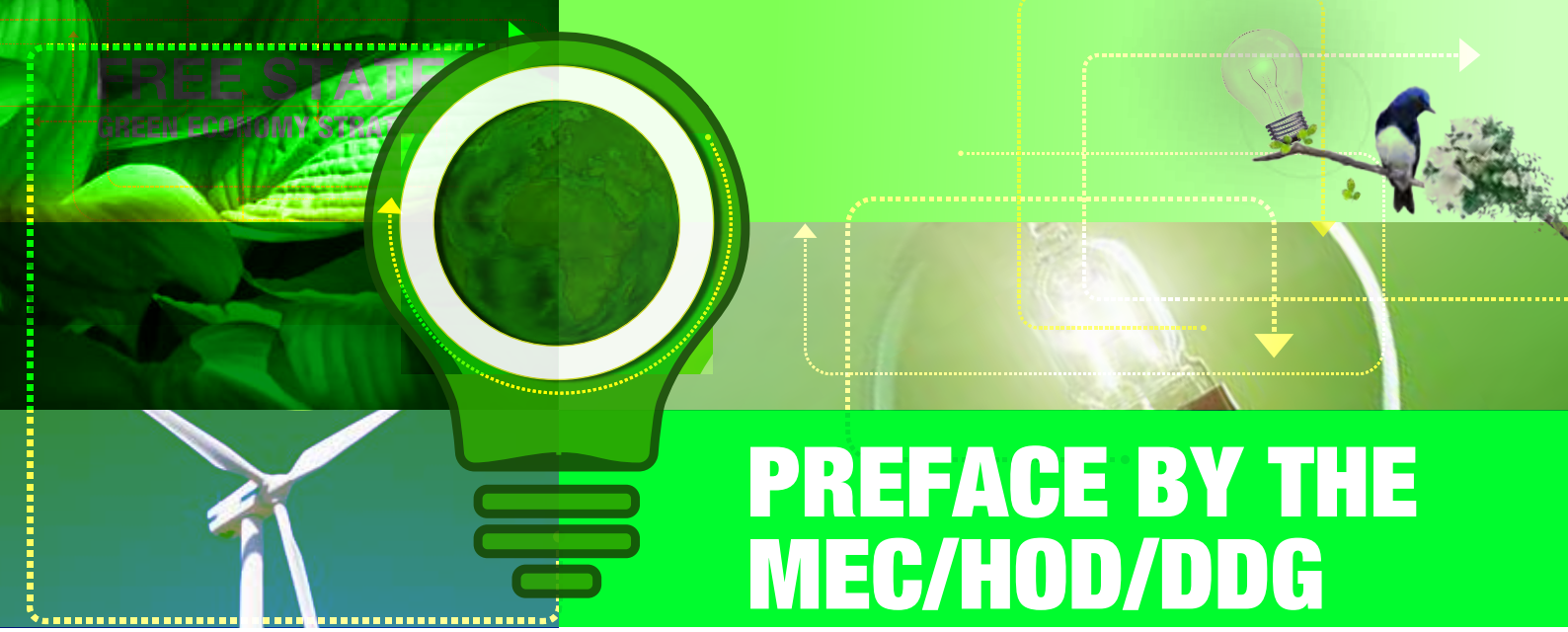
Out of the numerous potential areas of greening the economy, the Free State Province has singled-out five key areas, enumerated and costed projects and programmes that needs to be allocated and/or resource mobilized of commencing the projects. The six broad projects and programmes are within these sectors:

- **Agriculture** - Enhancing agro-processing and aqua culture initiatives
- **Climate Change** - Climate Change and Air Quality Management,
- **Energy** - Renewable Energy and Energy Efficiency,
- **Water**- Water and Waste Water Management,
- **Capacity Building** - Professional training/Practice

The total cost for these projects that can be fast-tracked in the short to mid-term is about R1.2billion.

## Conclusion

The Strategy sets out a set of priority areas for Green Economy in the Free State Province. A number of sub-programmes need to be developed and implemented at municipal levels. The strategy envisages the creation of green jobs in a number of sectors, with Agriculture and Renewable Energy sectors with potentials for great number of jobs.




# PREFACE BY THE MEC/HOD/DDG

Photo/photos

Green Economy has of late gained currency as an economic development and sustainable development paradigm. The South African government has embraced the global thrust which sees Green Economy as a vehicle for sustainable economic development. The government of South Africa's thrust towards green economy is epitomised by the way it has been prominently featuring in the President's State of the Nation Addresses (SONAs) and the Finance Minister's budget speeches. In this regard, all government departments are to develop implementation plans and align their programmes with the job creation imperative. The development of this Green Economy Strategy is Free State Province's response to the green economy paradigm which is not only providing a strong lever for broad-based economic development in many parts of the globe, but is re-orienting the South African national development trajectory.

Green economy is recognised by the government as one of the key economic drivers in the Medium Term Strategic Framework (MTSF) 2009 – 2014; Outcome 4 (Decent employment through inclusive economic growth), and Outcome 10 (Environmental Assets and natural resources that are valued, protected and continually enhanced) as well as in the New Growth Path announced by Cabinet in October 2010. The government sees Green Economy translating to better returns on natural, human and economic capital investments; more green and decent jobs; more energy and material efficiencies in production processes; reduced greenhouse gas emissions; extracting and using fewer natural resources; creating less waste; and reducing pollution and social disparities.

Free State provincial government, in sync with the national government's policy thrust, is committed to unleashing the potential of green economy. In that regard, the province, through the Department of Economic Development, Tourism and Environmental Affairs (DETEA) initiated a process to develop the Free State Green Economy Strategy (FSGES) which will assist the province to:

- Improve environmental quality and economic growth;
- Develop green industries and energy efficiency;
- Expand productive capacity and service delivery;
- Adopt sustainable consumption and production processes;
- Improve policy making, permitting, monitoring and enforcement of green economy initiatives/programmes;
- Create decent green jobs; and
- Build capacity of relevant personnel from DETEA, municipalities and other relevant stakeholders.

This strategy, developed through a combination of desktop studies and stakeholder consultation, will serve as the building blocks for green economic development and the sustainable development of the province. This FSGES was developed in alignment with the national green economy strategy elaborated in the National Green Economy

Accord as well the Free State Provincial Growth and Development Strategy (FSPGDS).

This strategy contains possible focal areas for moving Free State onto a low carbon and green economy pathway, outlining the challenges; opportunities; options; and enabling environment under each focal area. The strategy also has a Green Economy Implementation Plan for the different focal areas of green economy. The FSGES is supposed to usher Free State's economy onto a more sustainable pathway which wherein a far more judicious management of the natural and human capital of this province will unleash public and private capital flows onto a low-carbon, resource-efficient path. The strategy's implementation and achievement of set green economy goals however hinges on consummation of strategic partnerships and collaboration as well as on resource mobilization and this strategy talks to these key precedents for a successful green economy transition.

As a parting shot I say: Together We can shift Free State to a green and low carbon and resource efficient economy.

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Name

Designation

# ABBREVIATIONS AND ACRONYMS

| | |
|---|---|
| ADEP | Aquaculture Development and Enhancement Programme |
| AGECC | Advisory Group on Energy and Climate Change |
| ARC | Agricultural Research Council |
| BST | Bembani Sustainability Training |
| CASP | Comprehensive Agricultural Support Programme |
| CCSA | Coca-Cola South Africa |
| CDM | Clean Development Mechanism |
| CED | Centre for Development and Enterprise |
| CFL | Compact Fluorescent Lamps |
| CIS | Co-operative Incentive Scheme |
| CoP17 | Conference of Parties 17 to UNFCCC |
| CPPP | Community Public Private Partnership Programme |
| CRDP | Comprehensive Rural Development Programme |
| CSI | Corporate Social Investment ` |
| CSIR | Council for Scientific and Industrial Research |
| CSR | Corporate Social Responsibility |
| DANIDA | Danish International Development Agency |
| DBSA | Development Bank of Southern Africa |
| DEA | Department of Environmental Affairs |
| DED | Department of Economic Development |
| DEDEA | Department of Economic Development and Environmental Affairs |
| DETEA | Department of Economic Development, Tourism and Environmental Affairs |
| DOE | Department of Energy |
| DRDLR | Department of Rural Development and Land Reform |

| | |
|---|---|
| DTI | Department of Trade and Industry |
| DWA | Department of Water Affairs |
| EPWP | Expanded Public Works Programme |
| FSC | Forest Stewardship Council |
| FSGES | Free State green Economy Strategy |
| GEF | Global Environmental Facility |
| GEM | Global Environmental Monitoring |
| GHG | Green House Gas |
| HDI | Historically Disadvantaged Individuals |
| HSRC | Human Sciences Research Council |
| IDC | Industrial Development Corporation |
| IDPs | Integrated Development Plans |
| ISP | Incubation Support Programme |
| IUCN | International Union for Conservation of Nature |
| KZN | KwaZulu Natal |
| LED | Local Economic Development; |
| LTMS | Long Term Mitigation Scenarios |
| MDGs | Millennium Development Goals |
| NARYSEC | National Rural Youth Services Corps |
| NDP | National Development Plan |
| NEPAD | New Partnership for Africa Development |
| NERSA | National Energy Regulator of South Africa |
| NFSD | National Framework for Sustainable Development |
| NGO | Non-Governmental Organisations |
| NGP | New Growth Path |
| NPC | National Planning Commission |
| NRF | National Research Foundation |
| NSSD | National Strategy for Sustainable Development and Action Plan |
| NWMS | National Waste Management Strategy |
| PES | Payment for Ecosystem Services |
| PPP | Public Private Partnerships |

| | |
|---|---|
| REDD | Reducing Emissions from Deforestation and forest Degradation |
| REFIT | Renewable Energy Feed In Tariff |
| SALGA | South African Local Government Association |
| SAHRA | South Africa Heritage Resource Agency |
| SARI | South African Renewables Initiative |
| SEDA | Small Enterprises Development Agency |
| SGP | Small Grants Programme |
| SMME | Small, Medium and Micro Enterprises |
| SONA | State of the Nation Address |
| SRP | Social Responsibility Programme |
| SRPP | Social Responsibility Policy and Projects |
| STP | SEDA of the Technology Programme |
| SWH | Solar Water Heaters |
| TCCAF | The Coca-Cola Africa Foundation |
| UNAIDS | Joint United Nations Programme on HIV/AIDS |
| UNDP | United Nations Development Programme |
| UNEP | United Nations Environment Programme |
| UNICEF | United Nations Children's Fund |
| UNESCO | United Nations Educational, Scientific & Cultural Organization |
| UNIDO | United Nations Industrial Development Organization |
| UNHABITAT | United Nations Human Settlements Programme |
| UNSCF | United Nations Strategic Co-operation Framework |
| USAID | United States Agency for International Development |
| WC/WDM | Water Conservation and Water Demand Management |
| WESSA | World and Environment Society of Southern Africa |
| WHO | World Health Organization |
| WRC | Water Research Commission |
| WtE | Waste to Energy |
| WSSD | World Summit on Sustainable Development |
| UNCSD | United Nations Conference on Sustainable Development |

## Acknowledgement

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- *Mr Monde Walaza* — *DETEA, Project Manager*
- *Mr Tshepo Moremi* — *DETEA*

## Disclaimer

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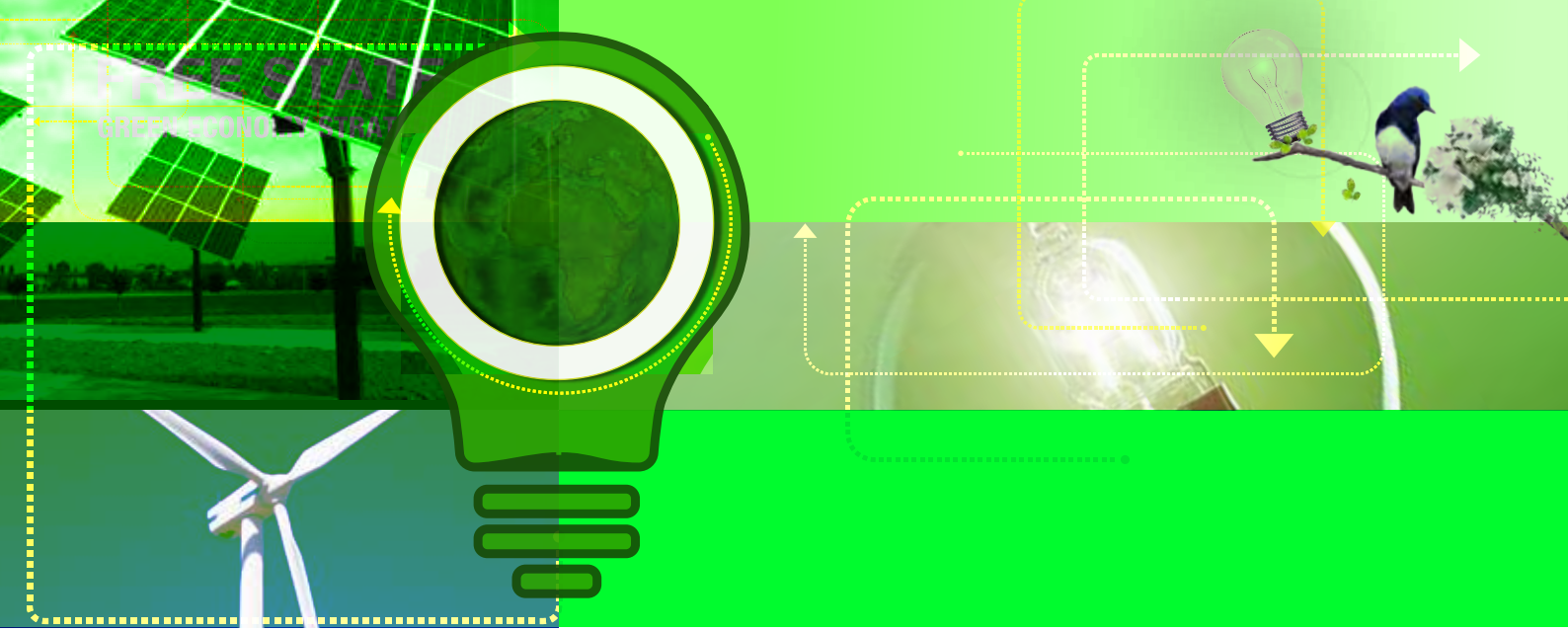
## Statement of Limitation

This Strategy has been developed by Charles Makuwerere, Kibii Komen and Masingita Makamu, and reviewed and edited by Titus Baloyi, representing Bembani Group (Pty) Ltd.

The information contained in this strategy was compiled using materials, information, data and evidence derived from sources believed to be reliable and correct at the time of the strategy development process.

Whilst every endeavour has been made by the authors of the strategy to ensure that information provided is correct and relevant, the report is, of necessity, based on information that could reasonably have been sourced within the time period allocated to the development process and the analytical phases of the project. The report is, furthermore, of necessity, dependant on information provided by the parties involved and/or their representatives.

It should, accordingl y, not be assumed that all possible and applicable findings, information and/or measures are included in this strategy.



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# 1 INTRODUCTION

## 1.1 What is green economy?

First coined 1989 in the United Kingdom's Government publication (UNDESA, 2012[1]), Green economy is an economy that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities (UNEP, 2011). Green economy is seen as a sustainable option because, unlike conventional economy, it is one whose growth in income and employment is driven by investments that 1) reduce carbon emissions and pollution; 2) enhances energy and resource efficiency and; 3) prevent the loss of biodiversity and ecosystem services (EMG, 2011). These investments need to be catalysed and supported by targeted public expenditure, policy reforms and regulation changes to create an enabling environment for a green economy. The EMG Report describes three new engines of productive and efficient growth as: greater efficiency in resource use; stronger environmental protection and; a shift in the composition of consumption away from resource-intensive goods towards less resource-intensive goods and into services (EMG 2011).

According to UNEP (2011), priority areas for green policy-making include: addressing environmental externalities and existing market failures; limiting government spending in areas that deplete natural capital, such as subsidies that stimulate unsustainable production, resulting in the depletion of natural resource stocks and overexploitation; promoting investment and spending in areas that stimulate a green economy, i.e. in areas that (a) promote innovation in new technologies and behaviours that are vital to green markets; (b) expand infrastructure that is required for certain green innovations to flourish; and (c) foster infant green industries; establishing a sound regulatory framework of legislation, institutions and enforcement to channel economic energy into environmentally and socially valuable activity; and the role of international frameworks that regulate economic activity, including the international trading system, in driving a green economy.

The Green Economy refers to two inter-linked developmental outcomes for the South African economy: 1) growing economic activity (which leads to investment, jobs and competitiveness) in the green industry sector; 2) A shift in the economy as a whole towards cleaner industries and sectors with a low environmental impact compared to its socio-economic impact. Green Economy is a growing economic development model based on the knowledge that aims to address the interdependence of economic growth and natural ecosystems and the adverse impact economic activities can have on the environment. Green Economy can create jobs, ensure real sustainable economic growth and prevent environmental pollution, global warming, resource depletion and environmental degradation.

For the purposes of this Strategy, the concepts Green Economy, Green Growth, and Low-Carbon development will be used interchangeable, and will therefore assume same meaning.

## 1.2 Rationale for a green economy

Given the trends of environmental degradation and wide-spread poverty, the nature of economic growth in the coming decades will have to be fundamentally different from the resource-intensive growth of the past. Future growth will need to be assessed more broadly, against the criterion of whether it satisfies demands for higher living standards for a larger global population, while adjusting to tightening environmental and natural resource constraints. Fuelling these engines will require technological progress that boosts not only material and energy efficiency but also labour productivity. For this to happen, two main gaps between developing and developed countries will have to narrow: The technological gap; and the productivity gap. The argument for closing the

1 UN Division for Sustainable Development (UNDESA), 2012. A Guide to the Green Economy

technology and labour productivity gaps as basis for a green and inclusive economy, public policies will need to be used strategically to orient the process of economic growth towards such a sustainable pathway, and issues of fairness in income distribution and social investment as well as planning for long-run energy and resource efficiency need to be included in the redefined set of economic policy goals. This approach requires a systemic shift rather than incremental improvements alone.

## 1.3 The Green Economy Strategy Development Process

The Free State Green Economy Strategy (FSGES) was developed in two phases, namely: the desktop review and the stakeholder consultation. Figure 11 below shows the overall process of the development of this strategy.

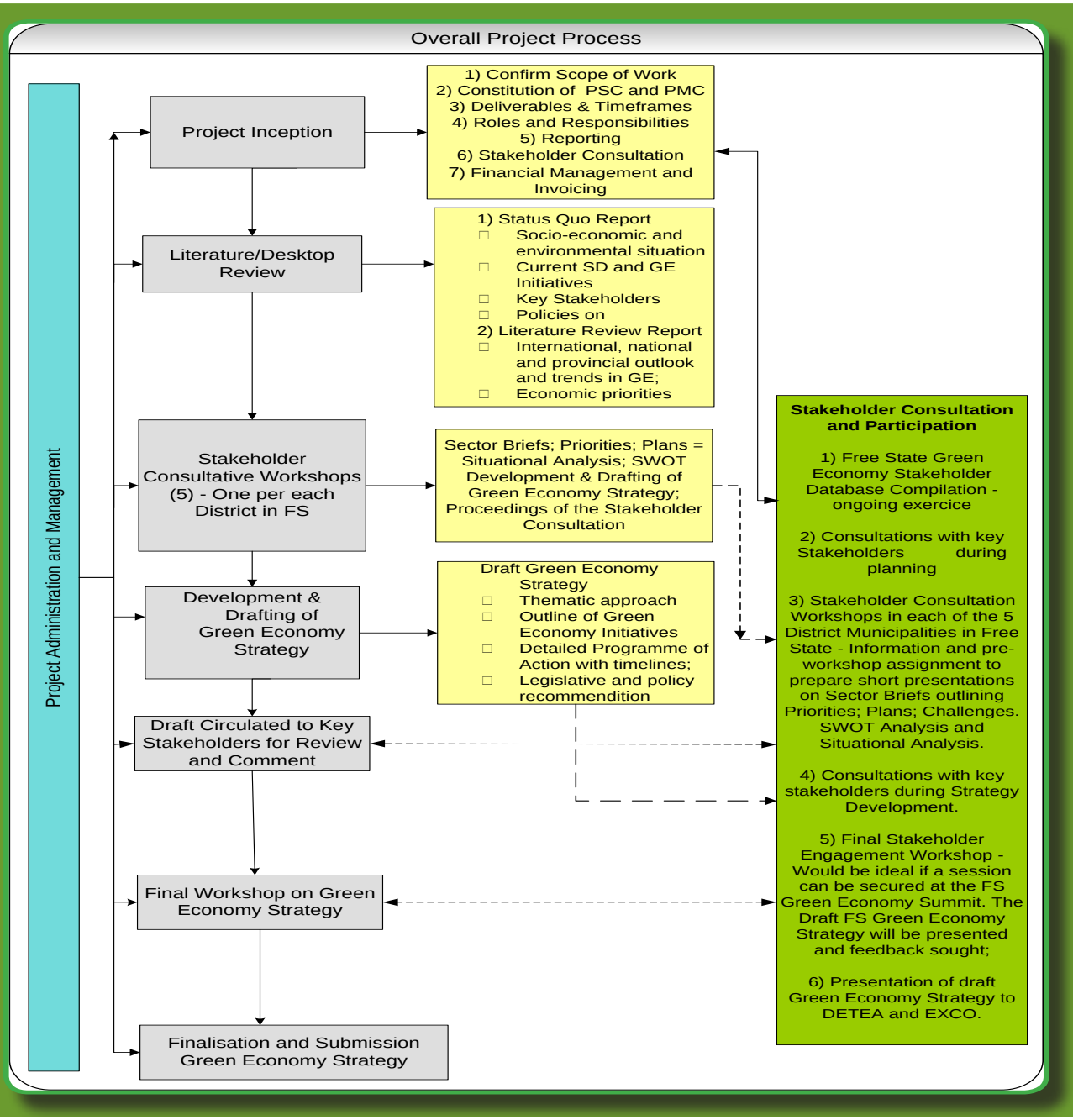



Figure 11: Overview of the Strategy Development Process

Stakeholder consultation played a crucial role in the strategy development process and will be critical for ownership and eventual implementation.

### 1.3.1 Desktop review and reports

The desktop review component was divided into: 1) the inception report; 2) the situational analysis and establishment of the status quo; and 3) literature review.

### 1.3.2 Stakeholder Consultation Process

The development of the FSGES was participatory and consultative. The purpose of consultation was to ensure buy-in and proper alignment with the ultimate objective of building the capacity of the stakeholders. A number of sector-based working groups were established to ensure that substantive issues are duly incorporated into the Strategy. Business cases for each sector were also developed.

### 1.3.3 Stakeholder Consultation

The first step in this process was the development of the database of the potential stakeholders. The second phase was the consultative pro cess. This included, among others, the preparation of materials, invitation of the stakeholders and finally, the facilitation of the workshops.

The stakeholder consultation workshops were held in the metro and district municipalities in the province, namely: Mangaung Metro, Xhariep, Lejweleputswa, Fezile Dabi, and Thabo Mofutsanyana District Municipalities.

Apart from defining vision and mission of green economy transition for each of the district municipalities as well as providing a strategic direction to green economy, the consultative workshops identified:

- The key economic and environmental challenges (and threats to natural resources) at community and/or at policy level;
- Singled-out the key sectoral challenges; and
- The opportunities that green economy can deliver both in the short and long terms.

### 1.3.4 The Facilitation Process

Ahead of the workshops in the districts, the identified stakeholders were drawn from a diverse spectrum (see below). Each stakeholder received the Background Information Document (BID) with pre-workshop assignment in advance. The pre-workshop assignment aimed at determining the status quo by identifying pressing challenges, key opportunities, as well as current Green Economy initiatives (whether they exist or not).

Representatives of the different stakeholder groupings were requested to prepare key summary points based on the objectives of the workshop using the guiding questions of the workshop. The outcomes of this process were documented and used in the finalisation of this Strategy. Workshop proceedings reports were produced after every workshop and contained all key aspects of the proceedings including issues and responses register. These workshops were facilitated by Bembani in collaboration with SALGA and DETEA.

### 1.3.5 Key Stakeholders

The stakeholders involved during the development of this Strategy represented:

- Private sector / business groups and associations;
- Farming groups and associations;

- Civil Society organizations;
- Government departments from the three tiers: national, provincial and local authorities/municipalities (metropolitan, district and local municipalities);
- Academia;
- Trade unions;
- Women organizations;
- Regional bodies/organizations; and
- International organizations.

### 1.3.6 Outcomes of Stakeholder Consultation

The stakeholder consultation process was set out at the beginning of the project. In terms of the proposed and agreed process plan, there was going to be five stakeholder consultation workshops at district or metropolitan level. This was going to be followed by a bigger workshop at a central venue, which would involve all stakeholder groupings.

The district municipalities' consultation processes were merged into two, and despite the incredible support received from SALGA provincial office, the team was not able to constitute a workshop session. As a second option, questionnaires were sent to all the municipalities in the province, but none of them were able to complete and return same.

The only functional stakeholder grouping that was sustained throughout the project was the Project Steering Committee (PSC) which was constituted by all relevant provincial line functions. The PSC assisted in steering the project, and ultimately this Strategy towards the desired direction. The PSC members contributed a great deal, especially with regard to the projects that are contained in the Implementation Plan of this Strategy.

# 2 PROVINCIAL PROFILE

## 2.1 Geographic Location

Free State is one of the nine Provinces in South Africa and the third largest in terms of spatial extent - 129 480km2, which constitutes approximately 10.6% of South Africa's land (FSPG, 2007). Figure 2.1 below shows the location of the province relative to the neighbouring provinces.


Figure 21: The Location of Free State Province

The Free State is divided into four district municipalities (namely, Fezile Dabi District, Lejweleputswa District, Thabo Mofutsanyana District and Xhariep District) and one metropolitan, the Mangaung Metropolitan Municipality and 20 local municipalities.

The major towns and cities of the Free State province are: Bloemfontein, Welkom, Kroonstad, Parys, Sasolburg and Bethlehem. Bloemfontein is the provincial capital and the Central Business District (CBD) of the Mangaung Metropolitan Municipality (MMM). It is the main economic driver of the province, contributing about 25% of the gross regional domestic product (StatsSA, 2012).

### Population

The population of Free State province has grown at about 1.4% between 2001 and 2011 and is reported to be 2 745 590 (2011 Census). This growth is with the population lower than the national average of 2%. Free State is the province with the second lowest total population after Northern Cape Province. Free State only commands 5.3% of the total population (Statistics South Africa, 2012).

Bloemfontein and Sasolburg recorded the highest growth rates and Maluti-a-Phofung has a high proportion of children and youths. A sizable population in the province reside in urban areas compared with the national average of 50%. There is massive rural to urban migration and this has resulted in the growth of the urban population from just over 70% in 2001 to over 76% in 2012 (Statistics South Africa, 2012).

## 2.2 Overview of the Provincial Economy

The province contributes about 4.7% to the South African economy with a Gross Domestic Product (GDP) of R65 billion and per capita GDP of R21 753 in 2004 (Global Insight, 2006). The economy is historically based on mining and agriculture but both sectors have been in decline since the 1990s (Centre for Development and Enterprise, 2005). Electricity and water sectors make marginal contributions to the economy of the province, contributing 1% of the employment in the province. Mangaung Metro and Fezile Dabi are the districts with the highest combined contribution of64.% to the economy (see Table 2.1 below).

Unemployment rate in the Free State province had been recorded to be higher than the national average, and fluctuated between 31.7% in 2005 (Burger and Marinkov, 2005), with a decline to 26.5% in 2006, and increased again to 32.6 in 2011 (Statistics South Africa, 2012).

High poverty levels with the number of people living in poverty increasing from 1 million in 1996 to 1.7 million in 2004 (55.9%) of the total population . Thabo Mafutsanyana has the highest proportion of people living in poverty (68.1%) while in absolute terms, Lejweleputswa and Fezile Dabi have the highest number living in poverty (FSPG, 2007). The Free State average household income of R75 314 falls short of the national average household income of R103 195.

Besides Thabo Mofutsanyana, which has the largest proportion and number of people living in poverty (68.1% or 510 124), more than 56.1% of the population in Lejweleputswa and Fezile Dabi were also living in poverty. However, in real terms, Lejweleputswa has almost double the number of people living in poverty (448 163) compared to Fezile Dabi (289 284). If the poverty figures and proportions for the five municipal districts and the metro for 1996 and 2004 are compared, the following key observations can be made: The real numbers of people living in poverty almost doubled in Lejweleputswa – from just more than 260 000 to almost half a million people during this nine year interval. This district also experienced the largest increase, 21.3%, in its poverty rate – from 34.9% to 56.1%. Thabo Mofutsanyana showed an increase of 21% in its poverty rate and is the district in which a third of the Province's people living in poverty reside. Xhariep, Mangaung, and Fezile Dabi experienced marginal decreases in their share of poor people in the Province between 1996 and 2004. This is largely due to the magnitude of the poverty problem in Thabo Mofutsanyana and Lejweleputswa. The number of people living in poverty in Mangaung, Matjhabeng and Maluti-a-Phofung account for almost 50% of the poor. These municipalities account for 61% of the unemployed. Metsimaholo has the lowest poverty rate (31.6%).

Table 21: Summary of the Free State Economic Activities per District Municipality

| | Mangaung Metro | Xhariep District | Lejweleputswa District | Fezile Dabi District | Thabo Mofutsanyana District |
|---|---|---|---|---|---|
| Area | 6,263 km$^2$ | 34,249km$^2$ | 31,930km$^2$ | 24,190km$^2$ | 33,269 km2 |
| Population | 26.9% | 5% | 24.3% | 17% | 26.8% |
| Contribution to GDP | 32.7% | 2.8% | 20.6% | 32.2% | 11.7% |
| Agriculture | Sunflower, red meat, wool | Livestock, sheep, wheat, potatoes, peanuts, wool | Maize, sunflower, red meat, Peanuts, dairy | Maize, Sorghum, sunflower, dairy, red meat, Peanuts, wool | Sun-flower production, fruit, maize, wheat, potatoes, red meat, dry beans, dairy |
| Agro-processing | | | | | asparagus and cherries |
| Industry | | Winery | | Chemical – Sasolburg, paper manufacturing | Transport and logistics |
| Tourism & eco-tourism | | Gariep Dam, Tussen die Riviere Nature Reserve and the Mynhardt Game Reserve | Allemanskraal Dam, the Goldfields Wine Cellar in Theunissen, the Willem Pretorius Game Reserve and a number of Heritage Sites. | Yachting and rafting - The Vaal River, World Heritage site; the Vredefort Dome and san painting | Golden Gate National Park; Maluti and the Drakensberg mountain ranges; wetlands; river valleys and the plains; The Basuto cultural village in QwaQwa, which offers beautifully made crafts and rock paintings |
| Mining | | Diamonds, gravel and clay | Gold | | |

## 2.3 Level of Development

In terms of human development, the province has a functional literacy rate of about 65% (FSPG, 2007), and as of 2011, up to 9.5% of the population over 20 years have higher education while 27.1% have matric or grade 12 or standard 10 (Statistics South Africa, 2012).

## 2.4 Biophysical Environment

### 2.4.1 Rainfall

In terms of the topography, Free State Province is characterised by escarpments, undulating terrains, plains and pans. Rainfall seems to be influenced by the topography with the highlands to the east of the province receiving higher rainfall than the undulating terrain to the west. Rainfall ranges from 290mm in the semi-arid western part of the province to around 1224mm per annum in the Eastern region (FSPG, 2007).

### 2.4.2 Soils

The two districts with the highest percentage of soils which are highly suitable for agriculture are Lejweleputswa (23.6%) and Fezile Dabi (15.4%). About 1% of the province's soils are not suitable for any agriculture and forestry but only for conservation. Thabo Mafutsanyana and Xhariep have the highest percentage of soils suitable for conservation only (FSPG, 2007).

### 2.4.3 Rivers and waterways

Free State has two primary catchments, the Vaal and the Orange Rivers. The province is drained by five major rivers; the Vaal (northern border), Caledon River (Eastern border with Lesotho), the Riet River, the Modder River and the Orange on the southern border with Eastern Cape (DETEA, 2004). Wetlands are common on the Eastern Plateau and the Drakensburg/Maluti regions and the Seekoeivlei wetland in Memel has been declared a Ramsar site (Department of Environmental Affairs, 2005).

### 2.4.4 Vegetation

The Vegetation of Free State Province is dominated by grasslands. The dry, sandy highveld grasslands occupy the semi-arid western parts of the province including Bloemfontein. The moist, cool Highveld grasslands are found in the central eastern part while the cold highveld grasslands occupy the western side of the Eastern Escarpment (FSPG, 2007).

### 2.4.5 Conservation

The province is endowed with historical and archaeological sites and areas of ecological significance which are worth conserving. Heritage resources in the province include buildings; battlefields; monuments; and sacred sites; museums with up to 12 stone age and historical sites declared as heritage sites by the South Africa Heritage Resource Agency (SAHRA).

The province has a number of biological hot spots with high levels of biodiversity and endemism. For example, the Drakensburg Alpine is one of the eight biological hotspots in the country. In terms of environmental sensitivity, the province is generally considered to have low sensitivity with 94.8% rated at level two or lower.

The province boasts of up to 14 publicly owned nature reserves managed by the Department of Economic Development, Tourism and Environmental Affairs (DETEA). There are plans to establish?? the Maluti-Drakensburg Transfrontier Park, which will link all protected areas between South Africa and Lesotho (FSPG, 2007).

## 2.5 Resource and Development Potentials

The National Spatial Development Perspective (NSDP) rates the Free State as having limited development potential in the national context. Its GDP contribution to the national economy is low and its GDP per Capita is lower than Gauteng, Western Cape and KZN which are the three provinces which are firing the national economy (FSPG, 2007).

Bloemfontein ranks the highest with regards toResearch and Development (R&D) in the province, because of universities in the area whilst Sasolburg, Harrismith and Ladybrand are strong in R&D in agro-industry and manufacturing. Welkom, Theunissen and Koffiefontein are strong in R&D because of engineers in the mining industry.

Mangaung and Metsimaholo (Fezile Dabi District) were the only two municipalities with high potential in respect of innovation and experimentation. Sasolburg (Metsimaholo Municipality) and Bloemfontein (Mangaung Municipality) have high potential for high value differentiated because of the petro-chemical plant at Sasol 1 and fuel, rubber and plastics in Bloemfontein.

Mangaung, Moqhaka and Matjhabeng Municipalities are rated highly in terms of labour-intensive and mass produced goods and Bloemfontein, Sasolburg, Viljoenskroom and Welkom are the beacons in that regard. Free State's manufacturing capacity and value outside fuels and chemicals however remains small when compared with national figures. Mangaung and Metsimaholo municipalities are the only municipalities with a high potential in terms of public service and administration. In that regard, Bloemfontein; Trompsburg; Welkom, Sasolburg, and Phuthaditjhaba have been identified as administrative centres.

Mangaung has high potential for the retail and services sector and settlements with high potential for these sectors include Bloemfontein; Botshabelo, Sasolburg and Welkom. The NSDP meanwhile identifies Bethlehem, Fourisburg, Witsieshoek, Bloemfontein and Welkom as having potential for tourism. The Free State Spatial Development Framework has, amongst others identified the following main tourism areas:

- Eastern Free State – Golden Gate; Maluti-Transfrontier Park; Clarens; the Memel Area
- Northern Free State – Sasolburg area; Vredefort Dome

- Southern Free State – Lake Gariep.
- Natural resource based tourism – focal points include Golden Gate; Maluti; Drakensburg Transfrontier Park area; Vredefort and Gariep Dam.

Places rated as having high tourism development potential include Bloemfontein, Sasolburg, Kroonstad and Welkom with Mangaung being the only municipality rated highly (FSPG, 2007).

In terms of resource potential in the Free State, the following pointers should be considered:

- Climatic constraints such as low annual rainfall and limited soil potential – this also translates into low agricultural potential;
- Mineral resources being depleted (diamond and gold), so low potential for the mining sector;
- Water availability in the Southern Free State (around Gariep and Van der Kloof dams) and in northern Free State in close proximity to the Vaal Dam and the Vaal River.

## 2.6 Provincial Development Priorities

According to the Free State Provincial Growth and Development Strategy, the strategic direction of the province is anchored on four key development priorities, namely:

- Economic Development, employment and investments;
- Human and social development;
- Justice, crime prevention and security; and
- Good governance (FSPG, 2007).

### 2.6.1 Economic Development, Employment and Investments

The province's economy has not been performing well based on its share of national population and national economic growth rate. All Integrated Development Plans (IDPs) in the province identify economic growth and job creation as priorities. The provincial economy continues to be dogged by inequalities, poverty and unequal access to economic opportunities.

The target for this priority is to reduce unemployment by half; provide skills and capacity across all economic sectors; and reduce poverty by half. Possible barriers for the achievement of these targets include the following:

- Lack of appropriate skills;
- Low number of Grade 12 learners passing physical science, mathematics, and computer science;
- Minimal growth coalition  in terms of Public Private Partnerships (PPP);
- Capital constraints;
- Poor institutional support for business;
- Negative environmental impacts of the petro-chemical industry in Metsimaholo;
- Poor road infrastructure;
- High?? crime levels;
- Lack of basic infrastructure and the maintenance of basic infrastructure; and
- HIV and AIDS.

### 2.6.2 Human and Social Development

This development priority is meant to address backlogs in basic infrastructure, social infrastructure, and basic skills levels. All Integrated Development Plans (IDPs) in the province identify human and social development as key priorities. The targets for this province in terms of this development priority are as follows:

- Achieve universal primary education – improve functional literacy rate from 65.3% to 85%;
- Promote gender equality and empower women;
- Reduce child mortality – to less than 65 per 1000;
- Improve maternal health – reduce maternal mortality from 150 to 100 per 100 000 live births;
- Combat HIV and AIDS, and other diseases;
- Provide shelter for all in the province;
- Reduce the number of households living in poverty by 5%; and
- Ensure environmental sustainability.

# 3 GREEN ECONOMY STRATEGY DEVELOPMENT IMPETUS AND BEST PRACTICES

## 3.1 National Perspective

At the national level, the Department of Environmental Affairs has been a major driver of the Green Economy agenda. A number of strategic documents, policies and strategies have been developed to give impetus to green economy at all levels of government, as well as the private sector. This section provides a synopsis of the developments within the space.

### 3.1.1 National Framework for Responding to Economic Crisis

The National Framework for responding to the global economic crisis of 2008-9 recognises green economy as a cardinal feature of the framework for South Africa's response to the international economic crisis. The policy document notes the need to emphasise opportunities to green the economy.

### 3.1.2 National Climate Change Response Strategy

The thrust of the green economy (low carbon, resource efficient and socially inclusive growth) is in sync with the National Climate Change Response Strategy. South Africa's strategy towards green economy dovetails into its Long Term Mitigation Scenarios (LTMS) which has adopted mitigation strategies that focus on accelerated energy efficiency across all sectors, ambitious low carbon technology research and development, new clean energy sources and behavioural change, as well as regulatory mechanisms and economic instruments. Green economy has come to be regarded as a strategy to transition to a low carbon and green growth trajectory through mitigation and adaptation strategies.

### 3.1.3 The New Growth Path

The New Growth Path (NGP) was a response forged by the government, labour and business as a response to the global economic meltdown of 2008-9. The global economic meltdown saw a 3% drop in GDP from 2008 to 2009 and large scale loss of jobs. The NGP also came against a context of inequality, high levels of youth (16-30 years) unemployment (40%) and relatively low incomes (Department of Economic Development, 2010).

The NGP is geared towards creating decent work, reducing inequality and defeating poverty. It provides a vision for achieving a more developed, democratic, cohesive and equitable economy and society over the medium term, in the context of sustained growth (Department of Economic Development, 2010). It combines macro-economic and micro-economic interventions.

The NGP seeks to identify job creation opportunities and target the limited capital and capacity at activities that maximise the creation of decent work opportunities. NGP targets creating 5 million new jobs by 2020.

The NGP, apart from creating jobs, has measures such as skills enhancement, enterprise development, addressing excessive income gaps, progressive taxation, support for the social wage, and strengthening education and health.

The NGP is also influencing the green economy landscape in that it identifies Green Economy as one of the 5 key job drivers and one of the six focus areas for employment creation. The New Growth Path targets 300 000 new jobs by 2020 by Green Economy, rising to 400 000 by 2030 – the renewable energy sector presents opportunities for investment and employment in manufacturing new technologies as well as in construction (Department of Economic Development, 2010).

Some of the core actions for job creation in the green economy include the following:

- Identify options for renewable energy generation, with appropriate regulatory changes;
- Development of green industrial support package with IDC as champion and special measures for SMEs and Co-ops;
- Codes for buildings to reduce energy use and waste;
- Targeted skills development;
- Public works to drive environmental programmes, including recycling and community cleaning;
- Technology and fiscal policies to support diffusion of green technologies for households and enterprises.

### 3.1.4 Green Economy Accord

One of the key influences on the national Green Economy landscape is the Green Economy Accord. The Green Economy Accord was signed by government and its social partners (organised labour and business) on the 17th of November 2011. The parties to the Accord committed to protecting the environment and taking advantage of the opportunities presented by technological changes required to combat climate change and greening the planet, and making sure that unavoidable costs are shared fairly across society. The Accord is geared towards employment creation, industrialisation and sustainable development. Parties to the Accord agreed to create at least 300 000 jobs by 2020 in the Green Economy. Jobs are projected to be created in green industries, climate change mitigation and in the transition to a low carbon economy (Department of Economic Development, 2011).

According to the Department of Economic Development (2011), parties agreed to the following commitments:

- Rollout of one million solar water heating systems by 2014/15 – to assist in climate change mitigation and has potential to generate employment in the manufacturing and installation of the units.
- Increasing Investments in the green economy, including the Industrial Development Corporation (IDC), private investors and retirement funds – IDC has set aside R22 billion over 5 years for green projects.
- Procurement of renewable energy as part of the energy generation plan – government to seek commitment for the supply of 3725MW of renewable energy by 2016. All parties committed to support the locals sourcing and manufacturing of components of renewable energy.
- Promotion of bio-fuels for vehicles – government has published mandatory blending regulations that set targets of 2% bio-ethanol and 5% bio-diesel standards.
- Launching of clean coal initiatives to reduce emissions from the use of coal based technologies. For example the Underground Coal Gasification initiative that Eskom is piloting at Majuba Power Station.
- Promoting energy efficiency across the economy – multiple benefits from the energy efficiency drive: business competitiveness; strengthening energy security; creating jobs; reducing the country's energy intensity; transition to a lower carbon economy; and improving environmental quality.
- Retrofitting of domestic, industrial and commercial buildings to promote energy efficiency.
- Waste recycling.
- Reducing carbon emissions on the roads, including through improved mass transport system and a shift to rail for freight transport. Transnet to invest up to R63 billion in the freight rail system in the next 5 years.
- Electrification of poor communities and reduction of fossil-fuel open fire cooking and heating;

- Economic development in the green economy through promotion of localisation, youth employment, co-operatives and skills development;
- Co-operation around the United Nations COP17 and its follow-up.

The Accord went a long way to entrench green economy in the national psyche, particularly among the key economic players in the country.

### 3.1.5 National Strategy for Sustainable Development and Action Plan

The National Strategy for Sustainable Development and Action Plan (NSSD 1) are key features of the national green economy landscape.

The approval by cabinet of the NFSD in 2008 heralded a new era of effective stewardship of South Africa's natural, social and economic resources. The NFSD laid the foundation for the development of the NSSD 1 2011-2014 which was approved by cabinet on the 23rd of November 2011. The NSSD1 has links with the National Development Plan, The New Growth Path and the Industrial Policy.

NSSD1 notes that South Africa has attributes of both an industrialised country and a developing country. The country is characterised by widespread poverty, high levels of functional illiteracy, inequality and unemployment; an economy that is highly industrialised and thus energy intensive and a natural resource base that is under severe pressure. NSSD1 goes further to acknowledge that "…South Africa is on an unsustainable development path" (Department of Environmental Affairs, 2011:11).

One of the strategic priorities of the NSSD1 is "Towards a green economy". The NSSD expressed concern about the ecological sustainability of the SA economy. The thrust of the "Towards a green economy" priority is to shift towards a resource efficient, low-carbon and pro-employment growth path. Other strategic priorities which have a bearing and impact on Green Economy are "Sustaining our Ecosystems and Using Natural Resources Efficiently" and "Responding Effectively to Climate Change" (Department of Environmental Affairs, 2011).

### 3.1.6 National Development Plan - Vision 2030

The National Development Plan (NDP), launched by the Planning Commission in 2012, has two main goals; to eliminate poverty and to sharply reduce inequality by 2030. The plan posits that "South Africa needs an economy that is more inclusive, more dynamic and in which the fruits of growth are shared more equitably" (National Planning Commission, 2011:10). The plan aims to create an economy that will create more jobs and it proposes to create 11 million jobs by 2030 (National Planning Commission, 2011).

The NDP has a number of key imperatives which are in sync with Green Economy. The following directly talk to Green Economy:

- Expanding infrastructure – this includes creating up to 20 000MW of new energy capacity (renewable energy).
- Transitioning to a low carbon economy – this prioritises the sustainable use of water resources and lower carbon emissions. The plan advocates for a carbon budgeting approach which stipulates carbon reduction targets, raise energy efficiency. The plan set a target of 5 million solar water heaters by 2030.
- Transforming urban and rural spaces – this imperative includes prioritising an inclusive and integrated rural economy. Agro-processing and irrigated agriculture have key roles in the envisaged rural economy.

From the foregoing discussion, it is apparent that the NDP is a key feature of the national green economy landscape and it is set to accentuate green economy into the future.

### 3.1.7 National Green Economy Focus Areas and Programmes

According to the NSSD 1 A green economy implies the decoupling of resource use and environmental impacts from economic growth (Department of Environmental Affairs, 2011:23). This implies moving towards a stable, steady-state economy

"supplemented by conditions that ensure distributional equity, establish sustainable levels of resource throughput and emissions, and provide for the protection of critical natural capital" (Jackson, 2009). The transitioning to a Green Economy in South Africa features a number of key thematic/focus areas and programmes. Table below shows some of the focus areas and programmes for the Transition to a Green Economy in South Africa.

Table 31: Focus Areas and Related Programmes for Transitioning to Green Economy in South Africa

| Focus Area | Examples of Related Programmes |
|---|---|
| Resource conservation and management | National payment for ecosystem services (PES) programme:<br>• Compensates land users for the environmental services they generate.<br>• Protection of ecosystem services is essential for economic growth and job creation;<br>• PES compensates landowners for ecosystem services such as water and carbon sequestration.<br>• PES benefits include conservation, sustainability and poverty alleviation;<br>• Up scaling, expansion and improvement of the current 'working for' programmes:<br>• Expanding scope of programmes and ensure existing programmes are fully functional<br>• Need for emphasis on skills development and enterprise creation.<br>• Infrastructure resilience and ecosystems<br>• Offset programmes<br>• Wildlife management |
| Sustainable Waste Management Practices | Waste beneficiation<br>• Zero Waste Community Programme for households<br>• Waste collection and recycling industry is a major industry and a large contributor to employment creation.<br>• Several waste collection and recycling pilot projects are being rolled out and may be scaled up and replicated for the effective implementation of the National Waste Management Strategy.<br>• Recycling industry is a significant industry in South Africa in terms of volumes.<br>• A community based waste management programme targeting 500 000 households – supplies bins, initiate packaging call back programme; facilitate establishment of co-operatives or small businesses; facilitate establishment of recycling mini-factories and buy back centres. |
| Water Management | Water harvesting - rural livelihood resilience through rainwater harvesting;<br>• Providing water through rainwater harvesting to support food security and build resilience in cases of droughts.<br>• This will involve the construction of reservoirs, landscaping to improve infiltration and water retention, provision of gutters and tanks etc.<br>Alternative technology for effluent management in small towns;<br>• Advanced waste stabilisation pond system – biogas capture and utilisation – carbon neutral effluent management;<br>• Offers a number of positives – job creation, lower running costs, possible income from trading carbon offsets; nutrient rich effluent for use in horticulture projects; improved water quality downstream of the plant.<br>• Three possible beneficiation streams – recovery of water for recycling; recovery of nutrients, harnessing of energy.<br>Strengthen demand side management through comprehensive municipal metering systems:<br>• Seeks to achieve comprehensive water metering;<br>• May involve retrofitting of water efficient devices, mandatory installation of specified fittings; training of local artisans; universal metering for all stand level connections.<br>Reduce water losses in agriculture, municipalities and mining;<br>• This involves water conservation and water demand management (WC/WDM).<br>• Interventions would include replacing aging water distribution infrastructure, raising awareness, mobilise funding of WC/WDM interventions; |
| Environmental Sustainability | • Research, awareness, training, skills development and knowledge management<br>• Greening and legacy projects: major events and tourism; |

| Focus Area | Examples of Related Programmes |
|---|---|
| Green Buildings and the built environment | Greening private and public buildings<br>• Government leadership programme in greening public buildings – provides scope for setting an example and developing norms and standards. Has economic advantages of lowering the cost of water and electricity;<br>• Sustainable Infrastructure and Ecosystem Integration<br>• Green resource management programme and the scaling up of ecosystem integration initiatives into the built environment.<br>• Increased afforestation and green roofing – have significant positive environmental impacts. Green roofs have become mandatory in Germany because of their capacity to retain water.<br>• Spatial Development Frameworks<br>• This is aimed at having a holistic approach to green implementation as a compartmentalised approach will not have a meaningful impact on resource consumption and environmental harm.<br>• This would take the form of macro-planning processes which would critically review existing economic and infrastructure development.<br>• Aim to make the best use of available resources to transition to a more sustainable economy.<br>• Main outcome – prerequisites for interventions in the local and regional built environment lead to greater environmental sustainability. |
| Sustainable transport and infrastructure | • Promoting non-motorised transport in South African metros in support of BRT;<br>• 75% of South Africans depend on public transport but most of the infrastructure is geared towards car users.<br>• Promoting non-motorised transport provides an opportunity for a new era of efficiency and sustainability for the transport sector.<br>• BRT and the Integrated Rapid Public Transport Network initiatives are currently in 12 cities and metropolitan municipalities, including Mangaung.<br>• BRT and IRPTN related projects include the densification and infilling along the trunk corridors; transit oriented development around stations, and transport demand management initiatives.<br>• Non-motorised transport projects would include urban design, infrastructure and vehicle components, such a cycling, pedi-cabs and walking.<br>• Job creation opportunities in the construction and localisation of component manufacturing.<br>• Increased public transport – reduces social wage, increase productivity and safety and reduces GHG emissions. |
| Clean energy and energy efficiency | Expand off grid options in rural and urban:<br>• Small hydro energy, biogas, roof mounted solar photovoltaic modules and clean stoves.<br>• Programme to take advantage of government housing programmes such a houses for informal settlements;<br>• Targets for the initiative are clean stoves, power to schools not on the grid, solar indoor heating, street lighting and traffic lights.<br>• Benefits include demand side management which would reduce pressure on the grid; better ambient air quality (and better health) for beneficiaries; improved safety due to improved safety.<br>REFIT optimisation for large scale renewable and localisation:<br>• The government's White Paper on Renewable Energy Policy supported the establishment of renewable energy technologies and targeted the provision of 10 000GWh of electricity for renewable resources by 2013;<br>• New Growth Path – identified potential for large scale job creation in the development of a wind and solar energy sector.<br>• Aims to create an enabling environment for up scaling renewable energy investments through finance, research and development, marketing opportunities.<br>Scaled up roll out of solar water geysers:<br>• Transition to renewable energy (government target is 10 000GWh by 2013) and also alleviates poverty through an improvement of quality of life;<br>• According to the National Solar Water Heater Strategy and Implementation Plan, 6.3 million low income households do not have geysers and 400 000 burst (could be replaced with solar water heaters);<br>• Three metropolitan municipalities (Cape Town, Durban and Port Elizabeth) are already rolling out interventions that are above 100 000.<br>• Large scale roll-out will be tied with local manufacturing and job creation will come from the manufacturing of the solar units, installation, plumbing and maintenance. |

| Focus Area | Examples of Related Programmes |
|---|---|
| Agriculture, Food Production and Forestry | Integrated sustainable agricultural production systems:<br>• Current agricultural system is extractive and input dependent;<br>• High levels of environmental degradation;<br>• Need for sustainable agriculture which is less dependent on inputs and which increases resilience, poverty alleviation, production, job creation; and<br>• Integrated agriculture could contribute towards the New Growth Path goal of 140 000 additional agricultural jobs by 2020. |
| Sustainable Consumption and Production | • Industry Specific Production Methods;<br>• Industry Production Technology Changes. |

Adapted from Department of Environmental Affairs (2011) and DBSA (2011)

The New Growth Plan, launched in November 2010, builds on plans to restructure the economy to ensure more inclusive and sustainable growth – and sets a target of creating five million new jobs by 2020. The road map to do this is provided by the Industrial Policy Action Plan, which proposes multi-sectoral interventions across agriculture, mining, manufacturing, tourism and other high-level services to create substantial employment (The New Growth Plan 2010). Green Industries o Revision of building standards, which will require higher levels of energy efficiency and mandatory installation of solar water heaters in new buildings, was completed. The SABS finalised enabling standards for solar water heaters; wind energy turbines; energy-efficient lighting, appliances and products; electric batteries and alternative fuel vehicles; and co-generation of electricity and biofuels. Significant progress with the development of the renewable energy feed in tariff (REFIT) rules was requested. The intra-departmental South African Renewables Initiative (SARI) will leverage international climate finance, to supplement domestic funding sources, for renewable energy production linked to domestic manufacturing.

The proposed interventions under the National Development Plan aim to eliminate poverty and reduce inequality by 2030 by expanding economic opportunity for all through: Investing in and improving infrastructure, as well as supporting industries such as mining and agriculture; diversifying exports; strengthening links to faster-growing economies; enacting reforms to lower the cost of doing business; reducing constraints to growth in various sectors; moving to more efficient and climate-friendly production systems; and encouraging entrepreneurship and innovation (National Development Plan, 2012).

## 3.2 International Perspective

Globally, Green Economy is driven by the United Nations Environment Programme (UNEP). A number of countries, including South Africa, have also adopted and pioneered the Green Economy Agenda. Below is a synopsis of initiatives at an international level.

### 3.2.1 UNEP – Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication

This publication sets the tone and stage for low-carbon economy in a global arena. It seeks to provide the business case for Green Economy and offers both public and private sectors means for contributing towards low-carbon economy.

It provides a synopsis of the current economic development focus, as well as associated short-comings or hindrances towards sustainability.

### 3.2.2 UN Environmental Management Group – Working Towards Balanced and Inclusive Green Economy

This publication provides a platform for all UN agencies to provide their own definitions and perspectives on Green Economy. The primary purpose of this report was to provide a framework for all UN agencies to assist member countries on their transition towards green economy.

Amongst the key issues that the publication addresses, is how green economy can assist member countries in addressing the Millennium Development Goals (MDGs). The report addresses green economy in the same vein as poverty eradication.

### 3.2.3 Green Economy Briefing Papers

UNEP has prepared a number of briefing papers to assist member states in their transition towards green economy. Again, the briefing papers create a clear link between green economy and poverty eradication.

### 3.2.4 Why a Green Economy Matters for the Least Developed Countries

This is a publication of co-ordinated efforts of UNEP, the United Nations Conference on Trade and Development (UNCTAD), and the Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States (UN-OHRLLS).

The publication looks at mechanisms on how green economy can assist in poverty eradication. It covers legislative and policy frameworks, as well as implementation.

### 3.2.5 UNEP – Measuring Progress Towards a Green Economy

This report follows the life-long adage "what gets measured gets done". It provides a framework for measuring progress towards green economy. This is achieved, first by creating and harmonizing indicators. It provides hope that a transition to green economy will provide significant number of jobs in both developed and least developed countries of the world.

### 3.2.6 Green Jobs: Towards Decent Work in a Sustainable, Low-Carbon World

This is a joint initiative of UNEP and International Labour Organization (ILO). It provides evidence for existing green jobs and estimate future green jobs in key green economy sectors.

Published in 2011, the publication provides a definition for the green jobs, which is seen as any work in the agricultural, manufacturing, R&D, administrative, and service activities that substantially contribute towards preserving or restoring environmental quality.

### 3.2.7 Green Economy in the Blue World

This is a joint initiative of UNEP, Food and Agriculture Organization (FAO), IMO, UNDP, UNDESA, International Union for the Conservation of Nature (IUCN), World Fish Center, and GRID-Arendal. It looks at how sectors linked to the marine and coastal environment can contribute towards a low-carbon economy.

### 3.2.8 Adapting for a Green Economy: Companies, Communities and Climate Change

This is a private sector led initiative of the World Resources Institute, Oxfam and UNEP. It is based on a survey of business leaders who are geared towards adapting to the impacts of climate change.

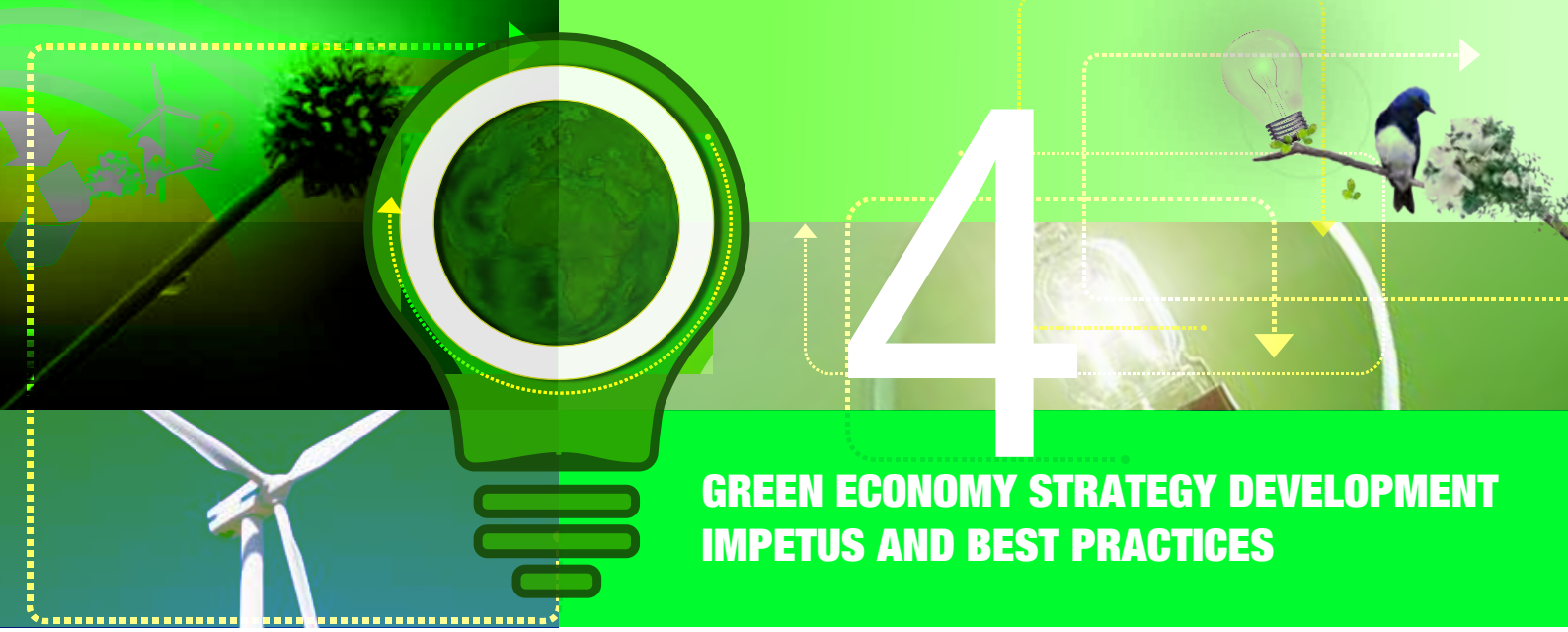
The underlying theme is that the community and social impacts associated with climate change are major business risks, and need to be addressed within the realm of other risks that business deal with on a daily basis. It helps, and will help companies that need to address the business risks of climate change.

### 3.2.9 National Strategies on Green Economy

Over and above the international initiatives on the foregoing sub-sections, the following countries have initiated their national strategies to address the Green Economy challenges and opportunities:

- Barbados – Green Economy: Scoping Study Synthesis Report;
- South Africa - Green Economy Accord (see paragraph 3.1.4);
- Ethiopia – Ethiopia's Climate-Resilient Green Economy;
- United Kingdom – Enabling the Transition to a Green Economy: Government and business working together;
- Jordan – Towards a Green Economy in Jordan by UNEP;
- Nepal – Environments of the Poor in the context of Climate Change and the Green Economy;
- France – National Sustainable Development Strategy: Towards a Green and Fair Economy;
- Carriacou and Petite Martinique – Road Map on Building a Green Economy for Sustainable Development;
- Canada – A Green Economy for Canada by the Canadian Institute for Environmental Law and Policy;

The above initiatives at country level provide an overview of what others have or are doing within the Green Economy space. It should be pointed out that there is no one size fits all, and that each country will have its unique drivers and issues to address.



# 4 GREEN ECONOMY STRATEGY DEVELOPMENT IMPETUS AND BEST PRACTICES

The transition of the Free State Province to low carbon economy will require the assessment of the current state (status quo) vis-à-vis the desired state. This will provide a set of steps, measures and other interventions and resources necessary to move the province to the desired level. This could require policy decisions and formulation of enforcement or implementation frameworks.

These are discussed per sector or theme hereunder.

## 4.1 Local and sustainable consumption

The Strategy and its precedent work did not look at the amount of food and goods that are consumed at the province, but rather at production capabilities and sources. Sustainable consumption dictates that people consume locally produced food and use locally sourced or produced goods.

Local production and consumption will assist the province in minimizing the environmental footprints associated with food and goods importation, and create green jobs for the local people.

There is enough evidence that the province can be self-sufficient, and is in a position to produce enough agricultural products for the export markets.

## 4.2 Green procurement

Procurement of goods and services by governments and other state-owned enterprises represents a large proportion of total public spending.

Free State Province can focus on how their existing spending is being used, for example through sustainable public procurement in addition to funding to stimulate the green industry.

Like many incentive mechanisms, government demand for green goods and services can provide businesses with a high-volume and long-term buyer. This is a market signal that allows firms within Free State Province to make longer-term investments in innovation, and allows producers to realise economies of scale, which can help to lower costs. In turn, this can lead to a wider commercialisation of green goods and services and thereby promote sustainable consumption.

By committing to purchase goods that meet certain criteria for sustainability, FS government can therefore represent a powerful force of market demand whilst demonstrating their commitment to sustainable development.

One of the biggest hurdles facing other governments around the world, and which is not unique to Free State, in terms of sustainable public procurement, is that environmentally and socially preferable goods and services can have higher up-front costs than less sustainable alternatives.

There are a number of strategies to reduce these costs that can be considered in FS, including:

1. Focusing on goods and services, which promise lower overall costs in the short-to-medium term once their efficiency gains in running costs are taken into account;
2. Considering long-term leasing of items such as electronic equipment, vehicles and furniture, which transfer the costs of maintenance, repair, upgrading and replacement back to the suppliers;
3. Transforming tenders for individual products into tenders for integrated services; and
4. Exploring cooperative contracts and central purchasing platforms, through which the purchases of a number of agencies can be collectively negotiated to obtain sizable bulk discounts.

## 4.3 Sustainable transport

Transport is fundamental to the economy of Free State Province

### 4.3.1 Challenges

The main challenges for the transport sector in Free State Province include high consumption of liquid fossil fuels, growing carbon dioxide emissions and loss of biodiversity, as well as growing traffic congestion in some of Free State urban areas like Bloemfontein. These patterns of transportation, based mainly on petrol and diesel-fuelled motor vehicles, generate serious social, environmental and economic damage and are highly unsustainable.

### 4.3.2 Opportunities

The transport sector in Free State can take the advantage of the opportunities offered by green economy transition. Green transport sector contribute to green economic growth, job creation and poverty reduction. Investment in green solutions such as public transport networks that are accessible, reliable and affordable can help alleviate poverty in a number of ways, e.g. by providing people with the means to reach employment opportunities, education and healthcare.

### 4.3.3 Options

Green investments options in the transport sector exist at several levels. A holistic strategy would include interventions to Shift and Improve transport, meaning:

- *Avoiding* or reducing the number of journeys taken;
- *Shifting* to more environmentally efficient forms of transport; and
- *Improving* vehicle and fuel technology to reduce adverse environmental effects such as pollution and resource depletion.
- Enacting the Avoid, Shift and Improve strategy requires:
- Adequate investment in the research, development, production and operation and management of infrastructure (such as tracks for buses and rail, pavements and cycle routes and park-and-ride facilities);
- Greener vehicles and transport modes (including bicycles, public transport vehicles and low emission vehicles);
- Cleaner fuels;
- Telecommunication technology to substitute conventional transport; and
    - Technologies to enact green transport (e.g. Global Positioning Systems (GPS), Intelligent Transport Systems, green logistics, etc.).

### 4.3.4 Enabling Conditions

The key enabling conditions for green transport include:

- Policies, specifically land use planning, to promote compact or mass transit corridor-based cities and conservation-based transportation infrastructure. Planning could reduce the need or distance to travel by bringing closer together the people and the activities that they need to access.
- Regulation introducing for example fuel and vehicle standards. Regulation could be used to restrict the use of certain motorised vehicles but could also influence the types of vehicles used and the standards that they should adhere to (both in terms of vehicle performance and road regulations).
- The provision of information and awareness raising to promote behavioural change in the form of modal choice (e.g. on the health and safety benefits of active travel such as cycling and walking). Information could increase peoples' awareness of alternative means of transport, leading to a modal shift.
- A shift in financing priorities towards public and non-motorised transport, coupled with strong economic incentives (via taxes and charges) to promote sustainable transport patterns and behaviour and to ensure green modes are commercially feasible and economically attractive; and
- Development and application of green transport technology.

## 4.4 Renewable Energy and Energy Efficiency

### 4.4.1 Challenges

The global community and national governments are faced with four major challenges with respect to the energy sector: energy security; combating climate change; reducing pollution and public-health hazards; and addressing energy poverty.

These challenges are exacerbated by the expected growth in the Free State demand for energy, as population and incomes rise. Expanding access to energy is a central challenge for Free State especially to cover the rural areas.

### 4.4.2 Opportunities

Renewable energy contributes to the twin challenges of responding to a growing demand for energy services, while reducing the negative impacts associated with current production and use. Increasing investments in renewable energy, as part of a green economy strategy, can contribute to reducing health and environmental impacts from energy production and use, while ensuring the basis for long-term economic growth. Such an integrated strategy can increase provincial and national energy security and reduce carbon emissions while providing new employment opportunities that may more than compensate for jobs that disappear due to the reduced use of other sources of energy (e.g. fossil fuels).

### 4.4.3 Options

Renewable energy could effectively contribute to improving access to energy. Three broad options are available for expanding access to renewable energy:

- Existing centralised grids can be expanded to non-served areas, potentially based on new renewable sources of energy;
- Decentralised mini-grids can be installed to link a community to a small generating plant; and
- Off-grid access can be facilitated by producing electricity for a single point of demand.

The optimal mix of these options for Free State is determined by the availability of energy resources, the regulatory and policy environment, the institutional and technical capacity, geographic considerations, and relative costs (AGECC, 2010). In remote locations, renewable off-grid and mini-grid options tend to be more cost effective than expanding existing electricity grids. Free State province is rich is these renewable energy e.g. small hydro, mini-wind, bio-energy, and the increasingly popular solar household systems (SHSs). Free State Province has a huge potential to alleviate rural energy poverty and even to displace costly diesel-based power generation.

### 4.4.4 Enabling Conditions

The main enabling conditions for the expansion of renewable energy in FS include:

- The definition of an energy policy framework;
- Use of fiscal policy to reduce risks and improve returns associated with renewable energy investments;
- Implementation of financing incentives for renewable energy projects;
- Improvement of electricity infrastructure and regulations to better integrate renewable energy in the current energy mix; and
- The implementation of technology transfer and skills programs.

The creation of the enabling conditions listed above would remove major “roadblocks” for a managed phasing-out of emissions from fossil fuel sources by changing the current incentive framework that does not support the development and deployment of renewable energy technologies. Coordinated action would be needed to support the various stages of the development and diffusion of renewable energy technologies, on both supply and demand sides. Green economy interventions would create a level playing field for the further growth of renewable energy. The phasing out of subsidies for fossil fuels and the pricing in of health and environmental externalities from fossil-fuel combustion could speed up the transformation of the energy sector, though attention needs to be paid to impacts on low-income groups.

## 4.5 Water efficiency

### 4.5.1 Challenges

Water is a basic necessity for sustaining life which still goes undelivered to many of the world’s poor (WHO/UNICEF, 2010; UNICEF, 2004). The existing inadequacies in provision of water and sanitation services generate considerable social costs and economic inefficiencies, in fact, when sanitation services are inadequate, the costs of water-borne diseases are high. Continuing current practices can lead to a massive and unsustainable gap between global supply and demand for water withdrawal.

### 4.5.2 Opportunities

Access to clean water and adequate sanitation services is critical to the future of each and every household. Water is clearly fundamental to food production and providing ecosystem services, and is vital for industrial production and energy generation. Investments in the water sector can lead to a decrease in water demand and an increase in water supply and can improve access to clean water and adequate sanitation services, whilst at the same time creating jobs and enabling the green economy transition in other economic sectors.

### 4.5.3 Options

Many investments can be made in the water sector to improve efficiency of use, and increase supply and water quality. As the world’s population increases, more water will be needed for household and industrial purposes with the consequence that in many areas subject to water scarcity, either more food will have to be imported, or more food produced with less water. Investments in water efficiency could

thus save costs and support local economic development, and increase resilience to climate change. Declines in supply could be avoided by investing in biodiversity and ecosystem services. It is estimated that ecosystem health and function will decline, negatively impacting world's water river systems and aquifers (the UN World Water Development Report 2010). In particular, investments in smaller, local water-supply systems (e.g., smaller storage systems that are built by and serve local communities) can prevent degradation of water ecosystems and are likely to yield greater returns (Schreiner et al., 2010). Finally, a minimum amount of investment in sanitation and drinking water supply would expedite a transition to a green economy and support poverty reduction.

### 4.5.4 Enabling Conditions

Several enabling conditions need to be in place to support the transition to a greener water sector. Effective governance is generally perceived to be a key factor to improve water management (Global Water Partnership, 2009). The improvement of institutional capacity and the minimisation of corruption would also greatly contribute to the effective functioning of investments in the sector. Several synergies could be created when better governance is coupled with market-based instruments. These instruments include:

- Payments for Ecosystem Services (PES). Payments for Ecosystem Services schemes are becoming common in Latin America and the Caribbean region. In Ecuador, Quito's water utility and electric power company pays local people to conserve the watersheds from which this company draws its water (Echavarría 2002; Southgate and Wunder 2007).
- Consumer-driven accreditation and certification schemes. These schemes create an opportunity for consumers to identify products that have been produced sustainably and pay a premium for access to them. One of the better-known examples is the labelling scheme developed by the Forest Stewardship Council (FSC).
- Arrangements that send a scarcity signal including the development of offset schemes, the trading of pollution permits and the trading of access rights to water. There are many variants of such schemes, but all work by using a market mechanism to reward people who are prepared to cease or reduce a water-affecting activity, thus allowing others to take up the same activity and thereby ensuring an overall controlled impact on the environment.

## 4.6 Agriculture

### 4.6.1 Current status of the sector

Shifting to green agriculture is capable of reducing poverty as well as nourishing a growing and more demanding world population at higher nutritional levels. Many opportunities exist for promoting green agriculture. They include increased awareness by governments, donor interest in supporting agriculture development in low income countries, growing interest of private investors in sustainable agriculture and increasing consumer demand for sustainably produced food.

Free State Province is rich in agriculture and is known to be South Africa's bread basket. Agricultural practices include the growing of crops such maize, wheat, sorghum, potatoes, sunflower, vegetables, dry beans, fruits, peanuts and cherries. Apart from crops, Free State supply dairy products, red meat and wool.

Agriculture[2] being the principal sector in Free State economy contributes about 4.8% to the economic growth of Free State and represents about 14% of the total agricultural sector nationally. The province is poised to be a leader in biofuels production with a number of ethanol plants under construction.

Agriculture dominates the Free State landscape, with cultivated land covering 32 000 km$^2$ and natural veld and grazing 87 000 km$^2$ of the province. Field crops yield almost two thirds of the gross agricultural income of the province. Animal products contribute a further 30%, with the balance generated by horticulture. The Comprehensive Agricultural Support Programme (CASP) seeks to support smallholder farmers – both subsistence and commercial – as well as the beneficiaries of land-reform programmes. To this end, the Free State received R102.9 million in 2011 from national government.

2 http://www.fdc.co.za/index.php?option=com_content&view=article&id=79&Itemid=89

Known as the "bread basket" of South Africa, about 90% of the province is under cultivation for crop production. It produces about 45% of the country's sunflower crop, 34% of the total maize crop, 37% of wheat, 53% of sorghum, 33% of potatoes, and almost all of its cherries (90%). Red meat and dairy are also important products and game hunting is a fast-growing industry.

The following table summarizes the key agricultural commodities in the different districts in the province.

Table 61: Summary of Agricultural Produce per District Municipality

| Commodity | Main Producing Area |
|---|---|
| Maize | Lejweleputswa, Fezile Dabi, Thabo Mofutsanyana |
| Wheat | Xhariep, Thabo Mofutsanyana |
| Sorghum | Fezile Dabi |
| Potatoes | Xhariep, Thabo Mofutsanyana |
| Sunflower | Lejweleputswa, Fezile Dabi, Thabo Mofutsanyana |
| Red meat | Xhariep, Mangaung, Lejweleputswa, Thabo Mofutsanyana, Fezile Dabi |
| Vegetables | Xhariep, Mangaung, Lejweleputswa |
| Dry beans | Thabo Mofutsanyana |
| Fruits | Thabo Mofutsanyana |
| Peanuts | Xhariep, Lejweleputswa, Fezile Dabi |
| Wool | Xhariep, Mangaung, Thabo Mofutsanyana |
| Dairy | Lejweleputswa, Fezile Dabi, Thabo Mofutsanyana |
| Cherries | Ficksburg Region |

Source: Free State Agriculture

### 4.6.2 Challenges

Challenges facing the agricultural sector include food security, population growth, and food competition from the biofuels. Unsustainable agricultural practices generate substantial pressure on the environment and pose challenges to land and water and exacerbated climate change. To ease these pressures, Free State agriculture sector needs to lessen its reliance on fossil fuels, water and other inputs.

### 4.6.3 Opportunities

Areas that offer great green economy potential within the agriculture sector that the Free State can delve into include: enhancing plant productivity through intercropping; investment in R&D and agribusinesses; strengthening the supply chains for green products and farm inputs, farm mechanisation and improving soil and water management and diversifying crops and livestock. Activities related to each of these broad areas are:

- Intercropping certain species of legumes and grasses with maize will increase maize yields significantly. This is because Legumes, grass and maize have symbiotic relationships which works better for the maize. Aroma produced by legumes planted on the perimeter of a field pushes maize pests, while aromas produced by the grasses pull insects to lay eggs on them rather than on the maize. Maize is the main crop in three districts: Lejweleputswa, Fezile Dabi, Thabo Mofutsanyana,
- Investing in the development, deployment and diffusion resource-efficient technologies and agricultural inputs, farming practices and seed and livestock varieties will counter and mitigate the environmental externalities that are often associated with the green revolution. Investments in developing new markets (i) create new and high return employment opportunities; (ii) shorten the field-to-market supply chains, and thus offer better prices to farmers; and (iii) help maintain the price premiums.

- Appropriate mechanisation of small and medium farms significantly increase agricultural productivity and help green farming practices. With regard to post harvest storage, small investments in simple technologies such as metal silos and sealed packaging bring about multiple economic benefits.
- Strategies to boost crop production include growing and integrating soil nitrogen fixing fodder and green manure crops such as pea, ferns and cloves or rice straw, no tillage and planting new seeds in crop residues, using waste biomass or bio char and organic and mineral fertilisers.

### 4.6.4 Enabling Conditions

The transition to a greener agriculture sector in Free State requires a supportive policy environment and enabling conditions that would level the playing field between conventional and green agricultural practices. Environmental and economic performance in agriculture is most likely to be improved by employing a mix of policies. A greater use of regulations and taxes that impose penalties for pollution would allow full accounting for externality costs. Economic incentives can be used to reward green practices. When direct regulation is not possible, tradable permits and quotas could be used to reduce pollution from greenhouse gases and water-borne nutrients. In general, a green economy strategy would see a gradual decoupling of governmental subsidies for farmers (producers) from crop production in favour of incentives to encourage farmers' efforts and investments in adopting green agriculture practices.

## 4.7 Waste minimization

Waste is a challenge both in urban and rural Free State. The land-fills are filling up and agricultural waste as well as invasive alien plants is infiltrating the ecosystems and destroying biodiversity.

### 4.7.1 Challenges

The waste sector is facing three sets of challenges:

- Increasing growth in the quantity and complexity of waste streams associated with rising incomes and economic growth;
- increasing risk of damage to human health and ecosystems; and
- The sector's contribution to climate change.

### 4.7.2 Opportunities

The long-term vision for the waste sector in FS should be to establish a circular economy in which the use of materials and generation of waste are minimised, any unavoidable waste recycled or remanufactured, and any remaining waste treated in a way that causes least damage to the environment and human health or even creating additional value by recovering energy from waste.

The opportunities for greening the waste sector come from three inter-related sources:

- Growth of the waste market, driven by demand for waste services and recycled products;
- Increased scarcity of natural resources and the consequent rise in commodity prices, which influence the demand for recycled products and waste to energy (WtE); and
- The emergence of new waste-management technologies.

These developments have opened up significant opportunities for greening the waste sector.

### 4.7.3 Options

Three central components in the waste minimisation hierarchy are the 3Rs: Reduce, Re-use and Recycle. Investments opportunities exist for each of these three areas of intervention to effectively support the greening of the waste sector. More specifically, green investments in FS can be directed to:

- Avoiding waste generation through sustainable community practices;
- Minimising the generation of waste;
- Recovery of materials and energy from waste and re-manufacture and recycle waste into usable products, where waste is inevitable; and
- Treatment of any remaining unusable waste in an environmentally friendly or in the least damaging way.

In FS, investments could also be allocated to formalise the currently highly informal waste sector with the aim to improve the application of environmental guidance and labour protection measures.

### 4.7.4 Enabling Conditions

Mobilising increased investment in greening the waste sector on a large scale requires several enabling conditions. These include:

- *Financing*. Investing in greening the waste sector requires substantial financial resources for both capital expenditures and operation. Such resources may be sourced from: private investments, international funding (e.g., from certified emission reduction), cost recovery from users, and other innovative financing mechanisms (e.g., micro-credit for small enterprises, or hybrid financing model combining debt and equity).
- *Incentives*. Economic incentives and disincentives (such as taxes and recycling credits) serve to motivate consumers and businesses to reduce waste generation and dispose of waste responsibly, thereby contributing to increased demand for greening the waste sector.
- *Policy and regulatory measures*. The most common types of policy and regulatory measures include: (1) regulated targets for minimisation, reuse, recycling, and required targets for virgin materials displacement in production inputs; (2) regulation relevant to the waste management market, i.e. permitting/licensing requirements for waste handling, storage, treatment and final disposal; and (3) land-use policies and planning.
- *Institutional arrangements*. In many other economies, command and control policies may not be as effective as economic instruments due to institutional capacity. Additionally, investments in the waste technologies have sometimes failed to reap benefits because of weak institutions.

## 4.8 Tourism

Tourism is one of the main sources of foreign-exchange income in many developing and middle income countries. With South Africa boasting the largest tourism[3] industry in the continent and with the developed transport and communications infrastructure, it comes as no surprise that the country continues to record increasing number of foreign tourist arrivals annually. According to Business Monitor International' Tourism Business Environment rating for Middle East and Africa, South Africa ranks second after Egypt but higher than the likes of Turkey and UAE. The country ranks number 3 under regional rankings.

The Free State province, known for its warm hospitality is fast becoming a tourist destination and has some of the well-known attractions like the Vaal Dam, Golden Gate Highlands National Park and the Gariep Dam as well as a number of large holiday resorts. Some of the tourist destinations in the province include areas like Bloemfontein, Clarens, Kroonstad, Parys and Welkom. It is estimated that the sector contributes about 3% to the province's economy representing about 5% of South Africa's tourism market.

Greening tourism yields broad economic social and environmental benefits through employment creation, providing livelihood support and it also provides enabling conditions for sustainable development.
http://www.fdc.co.za/index.php?option=com_content&view=article&id=79&Itemid=89

### 4.8.1 Challenges

Tourism can have positive or negative socioeconomic and environmental impacts depending on how it is planned, developed and managed. However, the industry faces a multitude of significant sustainability challenges related to: water consumption; loss of biological diversity; and energy and GHG emissions; waste management; management of cultural heritage.

### 4.8.2 Green investment opportunities in the tourism industry in FS

Numerous green economy opportunities in the tourism industry exist for both private and public sector. Opportunities include environmental sustainability, local development and creation of new, green jobs.

- Environmental conservation (natural attractions, mountains, rivers, biodiversity, natural barriers and endemic species);
- Infrastructure (roads, airports, national parks, private reserves, hospitality installations and other sites and facilities);
- Technology improvements (cleaner production, sustainable management). Thereby, investment in sustainable tourism offers a wide range of opportunities to reduce environmental pressures while at the same time generating significant returns; and
- Education and capacity building (labour force skills, including the greening of the skills base.

### 4.8.3 Enabling Conditions

Several enabling conditions are needed to overcome existing challenges in the following areas, including:

- FS government in partnership with the private sector, civil society, academic institutions and other stakeholders interested in green economy as well as international institutions, can collaborate with the industry to integrate sustainability into policies and management practices as well as contribute to the promotion of internationally recognized standards for sustainable tourism.
- There is also need to hold a multi-stakeholder participatory process to ensure that environmental and social issues are mainstreamed in tourism master plans or strategies.
- Furthermore, assessment of carrying capacity and social fabric could be used to take into account the impact of tourism at destination.
- The greening of the tourism sector can be advanced through the use of instruments such as fiscal policies, public investment and pricing mechanisms for different goods. Tax concessions and subsidies for example can be used to encourage green investments and facilities.

## 4.9 Green industries and manufacturing

Manufactured products are a key component of human consumption, whether as finished or semi-finished goods. During the 20th century, the growth of manufacturing was phenomenal and manufacturing has been a major driver of overall economic growth in developing countries.

The Free State economy has been very reliant on primary sectors such as agriculture and mining, but it is now increasingly growing its manufacturing sector, which accounts for about 14% of the provincial gross domestic product (GDP). The most important manufacturing subsectors, besides chemicals, are food and beverages, textiles, furniture, agro-processing, jewellery and engineering industries. Some 14% of the province's manufacturing is classified as being in high technology industries – the highest of all provincial economies in South Africa. The northern Free State's chemicals sector is one of the most important in the southern hemisphere. Petrochemicals Company, Sasol, based in the town of Sasolburg, is a world leader in the production of fuels, waxes, chemicals and low-cost feedstock from coal. Sasol is also the world leader in Fischer-Tropsch technology, a catalysed chemical reaction in which carbon monoxide and hydrogen are converted into liquid hydrocarbons, producing a synthetic petroleum substitute for use as synthetic lubrication oil or as synthetic fuel.

Greening the industry is seen as the most critical means of combating climate change and avenue to which sustainable development can be achieved, however, many challenges exist.

### 4.9.1 Challenges

The key challenges for manufacturing industries include natural resource scarcity (affecting raw material prices), the external costs of air pollution, as well as risks associated with hazardous substances and waste. Further, manufacturing has a large material impact on the economy, environment and human health.

### 4.9.2 Opportunities

The greening of manufacturing is essential to any effort to decouple environmental pressure from economic growth. Green manufacturing aims to reduce the amount of natural resources needed to produce finished goods through more energy- and materials-efficient manufacturing processes that also reduce the negative externalities associated with waste and pollution.

### 4.9.3 Options

There are several investment options to support the transition to a greener manufacturing sector that Free State can consider.

- A ***demand-side strategy*** that involves changing the composition of demand, both from within industry and from final consumption. This requires modifying output, i.e. to use final goods embodying materials and energy much more efficiently and/or to design products that require less material in their manufacturing.
- A ***supply-side strategy*** involves redesign and improving the efficiency of processes and technologies employed in the major materials-intensive subsectors of the manufacturing sector (ferrous metals, aluminium, cement, plastics, etc.).

The supply-side and demand-side approaches consist mainly of the following components:

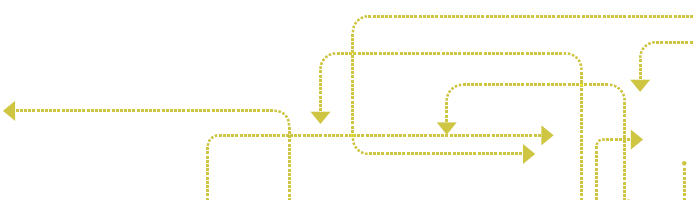
- re-design products and/or business models so that the same functionality can be delivered with fundamentally less use of materials and energy;
- substitute green inputs with brown inputs wherever possible;
- recycle internal process wastes, including waste-water, high temperature, etc.;
- introduce new, cleaner technologies and improve the efficiency of existing processes to leapfrog and establish new modes of production that have a fundamentally higher material- and energy efficiency;
- Redesign systems, especially the transportation system and urban infrastructure down-stream, to utilise less resource-intensive inputs.

### 4.9.4 Enabling Conditions

Manufacturing industries need to receive the appropriate policy and price signals to actively contribute to the green economy transition. The spectrum of instruments available to governments for greening industry and manufacturing can be categorised as follows:

- ***Regulatory and control mechanisms***. Legislation with clearly defined standards of technology and/or performance could drive green investment, encouraging industries to use natural resources more efficiently and create markets for green products and production.
- ***Economic or market-based instruments***. These include charges and fees for non-compliance, liability payments as well as tradable permit systems targeting, for example, air pollution, water quality and land management.
- ***Fiscal instruments and incentives***. Fiscal policy, comprising public expenditure, subsidies and taxation, could provide powerful incentives that alter the basic cost-benefit calculation of producers and consumers, thus driving change in behaviour.





- *Voluntary action, information and capacity building*. Information instruments on the way a certain product is used, when it is used, *where* it is used, etc. can take a variety of forms, including product information, labelling and reporting. Consumer awareness programmes can also assist consumers to make informed decisions and recognize newly introduced product information schemes.

## 4.10 Green built environment and Green buildings

The buildings sector of today has an oversized ecological footprint and it is the single largest contributor to global GHG emissions.

### 4.10.1 Challenges

The major challenges facing the buildings sector include availability of affordable and quality housing for the majority of the poor households in FS province; energy and water requirements and environmental impacts related to buildings (such as waste creation and the generation of GHG emissions).

### 4.10.2 Opportunities

There are significant opportunities to improve efficiency in buildings, and related to this is a considerable potential to reduce global GHG emissions. Additional advantages of greening the buildings sector include health and productivity benefits and a high potential for job creation. The major opportunities for greening the building sector are the relatively low cost of the process, be it retrofitting or new construction, the availability of technologies, and the green evolution of energy supply and demand. These trends are encouraging the effort to transform the building sector.

### 4.10.3 Options

FS can divide green investments in two general categories: retrofitting and new green buildings. Opportunities for greening the building sector are found mainly in retrofitting existing buildings to render them more environmentally efficient by reducing energy demand and using renewable energy sources. For Free State, just like the majority of non-OECD countries, which have a significant housing deficit, the greatest potential to reduce energy demand will come from a new generation of green buildings with more efficient design and higher performance standards.

Two paradigms for greening the sector are available, and both can be applied to new buildings as well as retrofitting existing building stock.

- The first is based on the concept of “passive” design where buildings respond to their local site context by using natural elements (such as air-flow and sunlight) to limit the effect of external conditions on the internal environment.
- The second paradigm is based on a more “active” approach that uses newer technology and state-of-the-art building management systems to reduce the energy load of buildings. Already, solar screens, photovoltaic cells (PV), and other devices are found in most state-of-the-art high-tech buildings.

### 4.10.4 Enabling Conditions

Besides more general constraints in advancing green building policy and regulation such as those related to governance and capacity, two key barriers are financial constraints and market and industry structures. The policy instruments available to address these barriers include:

- Regulatory and control mechanisms;
- Economic or market-based instruments;
- Fiscal instruments and incentives; as well as
- Information and voluntary action.

Considering in particular the hidden costs and market-failure barriers the building industry faces, analysis of cases world-wide suggests that regulatory and control measures are likely to be most effective and cost-efficient when adequately implemented. Regulatory and control instruments (such as appliance standards, building codes, procurement regulations, energy-efficiency obligations or quotas, mandatory audit programmes and utility demand-side management programmes) could be combined with other instruments for greater impact. Among fiscal instruments, options include tax exemptions, subsidies, grants and rebates. Information and voluntary actions include voluntary certification and labelling programmes, voluntary and negotiated agreements, public leadership initiatives, awareness raising and education, as well as detailed billing and disclosure programmes.

## 4.11 Natural resource protection and conservation

Forest goods and services include timber, fibre and other non-timber products as well as ecosystem services. In order for green economy investments to be effective in the forestry sector, forest governance, institutions and policy would need to be improved (UNFF 2009).

### 4.11.1 Opportunities

The opportunities for greening the sector include: The establishment of sustainable forest management criteria and indicators e.g. the growth of protected areas; the concept of reducing emissions from deforestation and forest degradation in developing countries (REDD); and the growing acceptance of payments for ecosystem services (PES).

### 4.11.2 Options

Free State can manage and conserve the existing areas of primary forest and promote the expansion of forests through reforestation to reverse the loss of forest area as well as practicing agroforestry – this is green investment opportunity offered by the forestry sector.

### 4.11.3 Enabling Conditions

FS governance would need to be based on specific, country-led analysis of the economic, social and institutional drivers of forest loss (such as illegal logging). Establishing good governance entails the creation of a vision for the future of a country's forests, including forest-based economies, which addresses the sustainable and equitable provision of all forest ecosystem services. Investment in forests is generally required to conserve areas of primary forest, promote expansion through regeneration and reforestation, and increase the number of agroforestry systems. Each of these will have different attractions for specific investors, e.g. agroforestry may be attractive for agricultural investors aiming for long-term resilience in food and other markets. Payments for the climate regulation services of forests through the CDM and REDD mechanisms also offer an opportunity for countries and landholders to capture the value of their forest ecosystem services.

Further, investments in the forestry sector in FS would be more effective if fiscal policy reform and economic instruments are implemented in sectors that impact forests. For instance, mining and infrastructure projects could have destructive direct impacts on forests and indirect impacts through opening up remote areas. Government regulation of such projects and the due diligence procedures of financial institutions that back these projects could provide important levers for good practice in siting, construction and operation to mitigate impacts on forests and biodiversity.

# 5 GREEN ECONOMY STRATEGY DEVELOPMENT IMPETUS AND BEST PRACTICES

## 5.1 The need for Partnerships

Partnerships are fundamental mechanisms in addressing development challenges throughout the world. A partnership is a strategic alliance or relationship between two or more people, organizations, institutions, sectors or societies. Successful partnerships are often based on trust, equality, mutual risks and benefits, as well as mutual understanding and obligations. Partnerships can be formal, where each party's roles and obligations are spelled out in a written agreement, or informal, where the roles and obligations are assumed or agreed to verbally.

Partnerships are appropriate when:

- Actions by other stakeholders are required;
- Influencing the bAehaviour and actions of different constituencies is important;
- No single organization has the resources, competencies, and/or mandate to act alone;
- It would avoid duplication of efforts by different organizations; and
- All partners get their own broad objectives met more effectively than working on their own

The factors highlighted above point to the significance of creating synergies through partnerships. DETEA should consider partnering with relevant organizations if any of the conditions for appropriate partnerships prevail. These will form the yardstick in considering any form of partnership for development.

## 5.2 The Private Sector Partners

Private sector is among the most critical partners that many government development initiatives require to be sustainable. A private sector survey conducted between 2004 and 2005 indicated that companies were able and willing to partner with government on environmental initiatives. At the time, the 35 companies surveyed were spending about R1.2bn on Corporate Social Responsibility (CSR) and were willing to channel part of that towards the Green Economy aspects.

Appendix A provides a list of private companies, parastatals and donor agencies that could be approached for partnership and funding of DETEA led programmes within the greening sphere.

## 5.3 International Partnerships

International partners are indispensable in the journey towards establishing and sustaining green economy development programmes. This has been reflected in several sections of the WSSD Plan of Implementation, the UNCSD sessions, the National Framework for Sustainable Development, and EU commitments to assist in developmental matters in South Africa. While learning from the international players and other organizations is of paramount importance, for the purposes of this Partnership Framework, it

is critical to note that the South African government has established a number of bilateral and multilaterals with a number of donor agencies and countries.

For the purposes of resource mobilisation, it is desirable to work closely with DBSA, Eskom, IDC, DEA and other government departments and agencies as well as regional players. Lessons learnt in one agency or country could be shared with the other and contextualised. This will also strengthen the goals of the New Partnership for African Development (NEPAD), and improve continental relations. The environmental initiative of NEPAD, identifies urgent actions needed for better management of land, water, and biological resources as well as strengthening environmental governance and financing.

GEF, UNEP, UNESCO, UNICEF, UNIDO, UNAIDS and UNDP are some of the international partners within the United Nations' system. Their engagement and involvement in the implementation of this Partnership Framework will enhance transfer of best practices, and enable faster implementation of green economy programmes throughout South Africa.

## 5.4 Local Government or Municipalities

Local government is where the rubber meets the road. All municipalities are responsible for a number of functions that form an integral part of development within the confines of the green economy, namely:

- Waste Management (transportation, sorting, recycling and land filling);
- Water and Wastewater Management (reticulation, treatment, use);
- Energy (electricity generation in some municipalities, distribution or supply);
- Local Economic Development (LED[4]);
- Professional development (environmental management, environmental health, various other community services, waste management, water and wastewater management, air quality planning and monitoring);

All municipalities need to commit to supporting the establishment and sustenance of Green Economy Programmes. These should be integrated into IDPs and translated into Local Economic Development (LED) strategies and implementation plans. All municipalities should report on progress towards empowering youth, and youth enterprises.

The Solar Water Heating programme that is driven by the Department of Energy and Eskom is implemented through municipalities. The Eskom partnership should be extended to individual municipalities that either have needs for solar water heaters or are implementing solar water heaters. Youth enterprises should be incorporated, capacitated and given opportunities (through preferential procurement and dedicated budget) to roll out solar water heating.

## 5.5 Parastatals and State Owned Enterprises

Parastatals have always been seen as extension of government's arm for specialised functions that were not core to government. The following parastatals should be incorporated as partners in the quest to address development with special focus on green economy, namely:

- The Development Bank of Southern Africa (DBSA[5]);
- Free State Development Corporation (FDC);
- Eskom Holdings Limited;
- The Agricultural Research Council (ARC) – Agro-processing, Aquaculture and Hydroponics);
- The Council for Scientific and Industrial Research (CSIR) – research on Green Economy programmes;
- The Human Sciences Research Council (HSRC) – social cohesion and poverty eradication;

4 This includes a number of Green Economy Programmes
5 Other than Jobs Fund and the Green Fund, the DBSA assists municipalities in Green Infrastructure Development (water, wastewater, etc.)

- The National Research Foundation (NRF) – funding for people intending to study towards Green Economy;
- Water Research Commission (WRC) – water and wastewater research, et cetera.

Parastatals have evolved through time, with others changing their status in the process. However, they still possess expertise and resources necessary to achieve the objectives of the Green Economy.

## 5.6 Non-Governmental Organisations

Non-governmental organisations (NGOs) play crucial roles in development throughout the world. They help steer the private sector into the right directions through lobbying, advocacy and other activities. Many NGOs have international allies, which have access to state of the art technology and research tools that are critical in the implementation of development programmes, including Green Economy Programmes in South Africa.

NGOs also work a lot with communities and they help in raising awareness of cross-cutting issues in those communities. Many NGOs understand community dynamics and ways of life and they are critical partners in ensuring sustained efforts in combating poverty, land degradation and creating opportunities for youth.

The following NGOs are suggested for involvement in the implementation of the Free State Green Economy programme, namely:

- World Wide Fund for Nature – South Africa (WWF-SA)
- World and Environment Society of Southern Africa (WESSA);
- Global Environmental Monitoring (GEM);
- Greenpeace International;
- Earthlife Africa;
- Sangoco;

## 5.7 The Media as Partners

A lot of great programmes fail in the public eyes because of the way media portray them. The portrayal is based on the programme implementers' ability and willingness to effectively communicate initiatives.

This Strategy and the Implementation Plan need to be communicated to media partners to ensure that all stakeholders are aware of the numerous green economy initiatives. The relevant division within DETEA needs to take the programmes to the public through relevant media partners.

# 6 GREEN ECONOMY IMPLEMENTATION PLAN

One of the most critical elements of this Strategy is the ability of all key stakeholders to implement the priority green economy programmes. Below is a list of possible actions and associated targets.

Table 91: Proposed Green Economy Programmes, Implementation Targets and Timeframes

| KPAs | Programme | Activities / Actions | Target | Timeframes | Implementing Partners | Possible Funders | Budget |
|---|---|---|---|---|---|---|---|
| Agro-processing and Aqua Culture | Agro-processing | Xhariep Goat Project | Establish 1 stud and commercial breeding facility with livestock.<br>3 Persons to be employed. | Short Term | DAFF, Municipalities | DAFF (CASP) | R 3,000,000 |
| | | Xhariep Ostrich Project | Establish 1 ostrich chicken hatchery and production inputs.<br>2 beneficiaries | Short Term | DAFF, Municipalities | DAFF (CASP) | R 3,053,000 |
| | | Mangaung Sheep & goats processing facility | Establish 1 processing facility for wool, mohair, hides, skins, goat milk and cheese.<br>13 Persons to be employed. | Short Term | DAFF, Municipalities | DAFF (CASP) | R 8,000,000 |
| | | MM Beef Value Chain Projects | Upgrading of 1 abattoir facility<br>Improvements to farm infrastructure<br>Procure livestock.<br>48 Persons to be employed. | Short Term | DAFF, Municipalities | DAFF (CASP) | R 7,000,000 |
| | | Lejweleputswa poultry hub | Establish 1 abattoir<br>Establish 6 equipped broiler houses;<br>and 2 equipped layer houses including production inputs.<br>112 Persons to be employed. | Short Term | DAFF, Municipalities | DAFF (CASP) | R 37,620,000 |
| | | TM Poultry Production | Establish 2 Broiler House including production inputs.<br>8 Persons to be employed. | Short Term | DAFF, Municipalities | DAFF (CASP) | R 8,000,000 |
| | | Fezile Dabi Coop Support | Establish 1 feed manufacturing facility and renovate infrastructure for mechanization support centre.<br>10 Persons to be employed. | Short Term | DAFF, Municipalities | DAFF (CASP) | R 7,000,000 |
| | | Senekal Development Project | Establish 1 layer house with storage and packaging facility.<br>4 Persons to be employed. | Short Term | DAFF, Municipalities | DAFF (CASP) | R 2,500,000 |

| KPAs | Programme | Activities / Actions | Target | Timeframes | Implementing Partners | Possible Funders | Budget |
|---|---|---|---|---|---|---|---|
| | | Naledi trust | Establish 15 hydroponic tunnels<br>Establish 1 packaging facility with cold room and ablution facilities.<br>15 Persons to be employed. | Short Term | DAFF, Municipalities | DAFF (CASP) | R 4,000,000 |
| | | Cornelia project | Establish 1 packaging facility with cold room and ablution facilities.<br>2 Persons to be employed. | Short Term | DAFF, Municipalities | DAFF (CASP) | R 4,000,000 |
| | | VKB Chicken Hatchery | Establish 1 chicken hatchery in partnership with VKB.<br>36 Persons to be employed. | Short Term | DAFF, VKB, Municipalities | DAFF (CASP) | R 6,500,000 |
| | | Mangaung Metro Agro-Processing | Expansion of 1 sorghum processing plant.<br>15 Persons to be employed. | Short Term | DAFF, Municipalities | DAFF (ILIMA) | R 800,000 |
| | | Mangaung Metro Vegetable Production | Expansion of 1 vegetable processing plant.<br>8 Persons to be employed. | Short Term | DAFF, Municipalities | DAFF (ILIMA) | R 300,000 |
| | | Sandvet Vegetable project | Establish 1 packaging facility for potatoes.<br>33 Persons to be employed. | Short Term | DAFF, Municipalities | DAFF (ILIMA) | R 2,000,000 |
| | | Mushroom project | Establish 5 mushroom production facilities.<br>60 Persons to be employed. | Short Term | DAFF, Municipalities | DAFF (ILIMA) | R 8,500,000 |
| | | Thaba Mofutsanyane Fodder production project | Establishment of fodder at 2 sites.<br>14 Persons to be employed. | Short Term | DAFF, Municipalities | DAFF (ILIMA) | R 3,200,000 |
| | | Setsoto vegetable projects | Establish Infrastructure at 2 sites for the production of vegetables and soya beans.<br>133 Persons to be employed | Short Term | DAFF, Municipalities | DAFF (ILIMA) | R 1,700,000 |
| | | Moloi Vegetable project | Expansion of 1 net structure for vegetable production and repair water systems.<br>23 Persons to be employed. | Short Term | DAFF, Municipalities | DAFF (ILIMA) | R 1,000,000 |
| | | Nketoana Primary Coop | Establish 1 net structure for vegetable production and repair fencing.<br>35 Persons to be employed. | Short Term | DAFF, Municipalities | DAFF (ILIMA) | R 800,000 |
| | | Thaba Mofutsanyane Dairy production project | Purchase 100 additional dairy cows.<br>10 Persons to be employed. | Short Term | DAFF, Municipalities | DAFF (ILIMA) | R 2,000,000 |
| | | Mechanization project | Procure additional implements | Short Term | DAFF, Municipalities | DAFF (ILIMA) | R 7,002,000 |
| | | Food Security project | Establish 10 500 backyard vegetable gardens<br>34 994 beneficiaries<br>19 Persons to be additionally employed. | Short Term | DAFF, Municipalities | DAFF (ILIMA) | R 6,000,000 |
| | | Massification Project | Establish 5 000 ha of maize, wheat, dry beans and sunflower | Short Term | DAFF, Municipalities | DAFF (ILIMA) | R 24,000,000 |
| | | Parys Hydroponics | Purchasing of machinery for vegetable processing and purchasing of production inputs | Medium Term | DAFF, Municipalities | DAFF (ILIMA) | 4000000<br>(Not funded) |

| KPAs | Programme | Activities / Actions | Target | Timeframes | Implementing Partners | Possible Funders | Budget |
|---|---|---|---|---|---|---|---|
| | | Vegetable Production and Processing | 10 Vegetable Growing and Processing Micro Enterprises / Co-operatives<br>X People Employed (20 per project per year). | Short Term | DAFF,<br>Large Scale Commercial Farming Enterprises<br>AgriSA<br>Municipalities | NEF, Khula Enterprise Finance, DAFF, FDC, IDC | R10 million<br>(R1 million per Enterprise) |
| | | Fruit Processing and Canning (Thabo Mofutsanyana) | 5 Fruit Processing and Canning Enterprises / Co-operatives | Medium | DAFF, DTI, Municipalities | NEF, Khula Enterprise Finance, IDC, FDC, DTI | R10 million<br>(R2 million per Enterprise) |
| | | Milk and Dairy Projects | 5 Micro Milk and Dairy Processing Plants<br>X People Employed (at least 20 per plant per year). | Medium | DAFF, DTI, Municipalities | FDC, NEF, Khula Enterprise Finance, DTI | R50 million<br>(R10 million per plant) |
| | | Medicinal plant conservation project | 5 medicinal plants nurseries<br>Setting up of commercial trading schemes for medicinal plants<br>Setting up of beneficiation plants for medicinal plants products | Medium | DEA, DAFF, Municipalities | DEA, DST, DTI, FDC | R25 million (R5 million per plant) |
| | | Mushroom out-grower schemes Growing, Packaging and Processing | 10 Mushroom Micro Enterprises or Co-operatives | Short Term | DAFF<br>Private Business<br>Municipalities | National Treasury<br>UNDP's GEF Small Grants Programme (SGP) | R5 million |
| | | Bee-Keeping, Harvesting and Processing of Honey | 10 Bee-Keeping and Honey Processing Micro Enterprises | Short Term | DAFF, Municipalities | UNDP's GEF Small Grants Programme (SGP)<br>South African Bee Industry Organization | R20 Million |
| | | Out-Grower Schemes for Fruit Growing, Processing and Marketing. | 5 Out-Grower Schemes | Short Term | SA Fruit Farms (Association), DAFF,<br>DTI, Municipalities | FDC, NEF, Khula Enterprise Finance, DAFF, IDC | R10 million |
| | | Out – Grower Schemes for Cut Flower Growing and Cutting | 10 Out-Grower Schemes | Medium Term | DAFF, SEDA's Timbali Technology Incubator, Municipalities | NEF, Khula Enterprise Finance, DAFF, IDC, FDC | R20 Million |
| | | Production of Essential Oils | 3 Micro Enterprises or co-operatives | Medium | DST, CSIR, DAFF, Municipalities | FDC, NEF, Khula Enterprise Finance, DAFF, IDC | R15 million |
| | | Bio-Fuel Production | 5 enterprises | Medium | Southern African Bio- Energy Association (SABA), DAFF, DRDLR, Department of Energy, DST, CSIR, | Central Energy Fund, SASOL, IDC, FDC | R50 million |

| KPAs | Programme | Activities / Actions | Target | Timeframes | Implementing Partners | Possible Funders | Budget |
|---|---|---|---|---|---|---|---|
| | | Propagation and Commercialisation of Edible Herbs | Establishment of 2 herbs farms, co-operatives or enterprises<br>Establish and run the export market on herbs. | Short Term | DAFF; DRDLR; Do Health; DTI; DST; CSIR & ARC – Young Entrepreneurs | DoSD; NDA; DAFF & DRDLR; NEF; DFI's; FDC, The Job Fund. | R10 million |
| | Aquaculture | Xhariep Fish Production | Establish 1 fish processing facility.<br>8 Persons to be employed. | Short Term | DAFF, Municipalities | DAFF (ILIMA) | R 3,500,000 |
| | | Xhariep Fish feed processing plant | Establish 1 processing facility for fish feed.<br>4 Persons to be employed. | Medium Term | DAFF, Municipalities | DAFF<br>Peoples Republic of China | R 3 500 000<br>(Not funded) |
| | | Fresh Water Fish farming projects around Irrigation Dams<br>Establishment of associated value addition plants in each farm. | 5 Fish Farms or Co-operatives | Medium | DST, SEDA Technology Programme,<br>Marine Finfish Farmers Association of SA; Southern Aquaculture Working Group, DAFF;<br>Municipalities | NEF, IDC, FDC,<br>SEDA Technology Programme<br>DAAF | R20 million |
| Climate Change and Air Quality Management | Emission Control Equipment (ECE) | Identify Industries that require emission control equipment.<br>Acquire and Supply Air Emissions Control Equipment (e.g. . . Scrubbers, Bag-houses, Electrostatic precipitators, etc.)<br>Install ECE and monitor efficacy.<br>Establish Industries for making Emission Control Equipment (ECE)<br>Establish SMMEs that will run the industries making ECE | Establish high tech enterprises | Medium | DMR, DEA, DM's (for monitoring and enforcement)<br>Municipalities | Industries and Mines | R20 million |
| | Air Quality Monitoring | Acquisition and supply of ambient air quality monitoring equipment to various industries, LMs,<br>Acquisition of Isokinetic Air Quality Monitoring Equipment for On-Stack Monitoring. | Establish enterprises or co-operatives | Long Term | DEA, LM's , Provinces, DMR, Industries, | DANIDA, DEA, FDC<br>Industry and Mines | R15 million |
| | Air Quality Emissions Inventory (EI) | Develop a guideline document on EI.<br>Develop/ source EI software.<br>Identify LM's needing EI<br>Conduct EI and Report | Establish enterprises and co-operatives | Medium | DEA, DETEA, LM's | LM's, International Donors (DANIDA and GEF, etc.) | R5 million |
| | Air Quality Index | Conduct Air Quality Indexing | Establish Air Quality Indexing Enterprises or Co-operatives in the Metro and the 4 DMs. | Medium | DEA, Metro's | DEA, Metro, DMs, International Donors | R5 million |
| | Vehicle Emission Strategy and Implementation | Facilitate establishment of Youth Enterprises for Vehicle Emission Testing and Enforcement | Establish 1 SMME for Vehicle Emission testing and Enforcement | Medium | Dept. of Transport (DoT), DEA, DETEA, Municipalities, Industries with large fleet. | DoT, DEA, Munics | R5 million |
| | Indoor Air Quality Management | Mobilise the Basa Njengo Magogo (BnM) fire making method | Run BnM campaigns in all provinces<br>Recruit 500 BnM Ambassadors. | Short Term | DEA, DETEA, Dept of Health (DoH), LM's, CEF | DoH, DEA, Donors, and Business and Industry, CEF, | R25 million |
| Renewable Energy and Energy Efficiency | Solar water heating | Establish SMMEs to manufacture solar water heaters. | 5 enterprises (one per district or metro) | Short Term | DoE, DST, IDC, SEDA Technology Programme, Eskom. | FDC, IDC, DBSA, Eskom (through rebates), | R75 million |
| | Installation and Maintenance of Solar Water Heaters<br>Installation of Windmills to generate energy | SMMEs to install and maintain solar water heaters<br>SMMEs to install and maintain windmills to generate wind energy | 40 000 Solar Water Heaters Installed per year | Short Term | All Local Municipalities (LMs), Sustainable Energy Society of South Africa (SESSA), Eskom, DoE. | DoE, FDC, DBSA, Eskom | 40 000 x R7500 per year |

| KPAs | Programme | Activities / Actions | Target | Timeframes | Implementing Partners | Possible Funders | Budget |
|---|---|---|---|---|---|---|---|
| | Retrofitting of lights with compact fluorescent tubes and LED lights | Establish youth brigades to retrofit municipal buildings, street lights and other facilities with CFL or LEDs | 2 enterprises per district | Short Term | LM's, Eskom, DoE | Eskom, DoE, | R25 million |
| | Waste to energy conversion through pyrolysis | Establishment of pyrolysis plants to process used tyres. | 1 Pyrolysis Plant in Fezile Dabi and Mangaung Metro. | Long Term | DoE, DEA, SASOL, Municipalities, IDC, FDC | SASOL, DoE,<br>External Investments, IDC | R100 million |
| Professional Training / Practice | Green Economy Entrepreneurial Development Training Programme (GEEDTP) | Identify and select candidates for GEEDTP<br>Develop GEEDTP<br>Schedule and run training<br>Identify potential Enterprises to be established together with the potential Entrepreneurs<br>Facilitate preparation of Feasibility Studies and Business Plans for Enterprises to be established<br>Mentor and coach potential youth Entrepreneurs through establishment of their Enterprises | All interested and aspiring Green Economy Entrepreneurs<br>400 people trained over 5 years | Immediate Short Term<br>(0 – 6 months) | Institutions of Leaning<br>SETAs<br>DEA, DETEA<br>DAFF | The Job Fund; DEA, DANIDA, UN Agencies | R10 million<br>(Excluding meals, accommodation, transport and stipend for potential youth Entrepreneurs |
| | Environmental Impact Assessment Practice | Identify and select candidates for EIA Practice Training<br>Develop EIA Practice Training<br>Conduct theoretical and on-the-job EIA Practice Training<br>Facilitate placement of successful EIA Practitioners | All interested graduates with Environmental Management backgrounds | | Institutions of learning<br>SETAs<br>EAPASA<br>EIA Practice Consulting Firms<br>DEA & Provincial Environment Departments | DEA, DANIDA, UN Agencies | R5 million |
| | Environmental Law Practice | Identify and select candidates for Environmental Law Training<br>Develop Environmental Law Practice Training Programme<br>Conduct theoretical and on-the-job Environmental Law Practice Training<br>Facilitate placement of successful Environmental Lawyers | All interested graduates with Environmental Management backgrounds | Short Term | Institutions of learning<br>SETAs<br>Environmental Law Firms<br>Lawyers Association of South Africa<br>DETEA, DEA | DEA, DETEA, DANIDA, UN Agencies | R5 million |
| Waste Management | Waste Sorting & Recycling | Establishment and operation of buy-back centres<br>Establishment and operation of plastic waste processing facilities<br>Develop and Implement Marketing and Sales Plan for recycling products<br>Establish Tyre Recycling Plants | 10 buy back Centres Established<br>5 Plastic Waste Processing Plants (each employing 50 people<br>3 Tyre Recycling Plants. | Short Term | DEA, DTI, DETEA, NDA, Municipalities, CBOs. DBSA, | Anglo Zimele, Mondi, SAPPI, PFSA, Consol, Eskom, Sasol, PetroSA, ABA, DEA, DTI, DWA, DoH, DAFF, NDA, Municipalities, Danida, UNDP, UNEP, GEF, Job Fund | |
| | Composting | Establishment of compost manufacturing plants including the acquisition of composting machinery to process organic waste to compost;<br>Develop and Implement Marketing and Sales Plan for compost | Composting Plants established | Medium | DAFF, DTI, NDA, DETEA, Municipalities, CBOs | Anglo Zimele, DEA, FDC DTI, DWA, DoH, DME, DAFF, DIRCO, Danida, UNDP, UNEP, GEF, Municipalities, NDA, | |
| | Nurseries | Establishment, operation and management of indigenous plants nurseries<br>Develop and Implement Marketing and Sales Plan for indigenous nurseries products | Nurseries Established | Medium Term | DAFF, DTI, NDA, DETEA, SANBI, Municipalities, CBOs | Anglo Zimele, DEA, DTI, DWA, DoH, DAFF, Danida, UNDP, UNEP, GEF, Municipalities, NDA | |
| | Greening, beautification and Landscaping | Planning, Designing and Implementation of Beatification gardens in Public and Private Places;<br>Maintenance of established gardens; | 9 Beautification projects | Short Term | DAFF, DTI, NDA, DETEA, SANBI, Municipalities, CBOs | DEA, DTI, DWA, DoH, DAFF, Danida, UNDP, UNEP, GEF, Municipalities, DPW (EPWP), NDA | |

| KPAs | Programme | Activities / Actions | Target | Timeframes | Implementing Partners | Possible Funders | Budget |
|---|---|---|---|---|---|---|---|
| | Waste to energy treatment | Establishment of Methane harvesting facilities in landfill sites<br>Establishment and implementation of the energy sales scheme | Establish waste to energy plants or factories | Short Term | Eskom, PetroSA, Energy Regulator, DAFF, DTI, NDA, Municipalities, CBOs | Mondi, SAPPI, Eskom, Sasol, PetroSA, DTI, DEA, DWA, DoH, DAFF, Danida, UNDP, UNEP, GEF, Municipalities, NDA | |
| | Artistic products | Establish Arts and Crafts Projects;<br>Develop and Implement Marketing and Sales Programme for the Projects | 9 Arts and Crafts Centres established | Short Term | DAFF, DTI, NDT, DAC, NDA, DETEA, SANBI, Municipalities, CBOs | Anglo Zimele, Mondi, SAPPI, PFSA, Eskom, Sasol, PetroSA, ABA, NDT, DEA, DTI, DAC, DIRCO, Danida, UNDP, UNEP, GEF, Municipalities | |
| | Carbon Trading | Establishment of Carbon Trading Structures for Green Economy Projects<br>Trading Carbon Credits | 5 people to be trained and appointed to facilitate carbon trading per project | Medium Term | DEA, DTI, DIRCO, UNDP, UNEP, Municipalities, CBOs | Mondi, SAPPI, PFSA, Eskom, Sasol, PetroSA, ABA, DEA, DTI, DWA, DoH, DAFF, Danida, UNDP, UNEP, GEF, Municipalities | |
| Water and Waste Water Management | Upgrading of waste water treatment plants | Design, development and operating of wastewater treatment plants | 1 project per year | Medium Term | DWA, Water Boards, and Municipalities | Water Boards, Municipalities, DBSA and MIG | R35m per project |
| | Construction of wastewater plants | Design, development and operating of wastewater treatment plants | 1 project per year | Medium Term | DWA, Water Boards, and Municipalities | Water Boards, Municipalities, DBSA and MIG | R200 million |
| | Water and Wastewater plant maintenance | Accredited training for operators | 1 project | Long Term | DWA, Water Boards, and Municipalities | Water Boards, Municipalities, DBSA and MIG | R400 000 |
| | Water Demand Management | Leak control programmes | 1 project per year | Short Term | DWA, BDSA, Water boards and Municipalities | DWA, Municipalities, Water Board and | R1 million per year |
| | | Household plumbing maintenance and improvement | 2 projects | Short Term | DWA, Water Boards and Municipalities | DWA, Municipalities, Water Boards, SETA and DBSA | R2 million |
| | Water quality monitoring | Water sampling at Water treatment plants, Wastewater plant and rivers | 2 projects. | Short Term | DWA, Water Boards and Municipalities | DWA, Municipalities, Water Boards, SETA and DBSA | R1.125 million |
| | | Analysis of samples | 3 projects | Short Term | DWA, Water Boards and Municipalities | DWA, Municipalities, Water Boards, SETA and DBSA | R120 000 per project. |
| | Environment conservation | River cleaning | 5 projects | Short Term | DWA, Water Boards, and Municipalities | DWA, Municipalities, Water Boards, SETA and DBSA | R1.5 million |
| | | Eradication of alien plants | 5 projects | Short Term | DWA, Water Boards, and Municipalities | DWA, Municipalities, Water Boards, SETA and DBSA | R2 million |
| | | Construction and maintenance of Wetlands | 2 projects<br>People trained to install and operate wetland systems | Medium Term | DWA, Water Boards and Municipalities | DWA, Municipalities, Water Boards and DBSA | R 10m per project. |
| | | Cleaning of lagoons and dams | 1 projects | Medium Term | DWA, Water Boards and Municipalities | DWA, Municipalities, Water Boards and DBSA | R 10m per project. |
| | Bucket system eradication | Installation of VIP toilets | 9 projects<br>People trained to install VIP toilets | Short Term | DWA, Water Boards, and Municipalities | DWA, Municipalities, Water Boards, SETA and DBSA | R5m. |
| | | Installation of waterborne system | 2 projects<br>People trained to install waterborne system | Short Term | DWA, Water Boards, and Municipalities | DWA, Municipalities, Water Boards, and DBSA | R10 million |
| | Sludge use | Sludge irrigation for farming purposes | 1 pilot project | Short Term | DWA, Water Boards, Municipalities and Dept of Agric & Forestry | | R8m |

| KPAs | Programme | Activities / Actions | Target | Timeframes | Implementing Partners | Possible Funders | Budget |
|---|---|---|---|---|---|---|---|
| | Sewer network upgrading, monitoring and maintenance | Installation of emergency detention dams at major pump stations<br>Sewer network upgrading, monitoring and maintenance | Emergency dams constructed | Medium Term | Construction companies, Department of Water Affairs, DBSA, Water Utilities, Municipalities, | PPPs, DWA, DBSA | R10 million |
| | | Monitoring of sewer and water networks, and implementation of response plans | | | | | |
| | River and wetland rehabilitation | Watercourse situation assessments and development rehab plans | 2 projects | Short Term | Working for Wetlands, DWA, Provincial Governments, SANBI, Municipalities | DWA, DEA | R1.2 million |
| | | | | | | | |
| | Groundwater quality monitoring by SMMEs | Development of water quality monitoring plans | Establish enterprises | Short Term | DWA, DBSA, SALGA, Municipalities | DWA, DBSA | R2 million |
| | | Implementation of water quality monitoring plans | | Short Term | DWA, DBSA, SALGA, Municipalities | DWA, DBSA, SALGA, Municipalities | R2 million |

# 7 GREEN ECONOMY STRATEGY DEVELOPMENT IMPETUS AND BEST PRACTICES

The green economy transition in Free State Province will cost around R10 billion. Project finance can be sourced from local and national budgets. Funding is also available from international agencies of development interested in sustainable development present in South Africa. Many international institutions are ready to work with the provincial and national governments to promote the use of climate-friendly building materials, renewable energy sources, as well as energy efficient design criteria and standards. The intention is to promote sustainable public transport systems and influence the management of future energy supply and demand through appropriate urban planning.

## 7.1 Local Financing

Green Economy can be financed from the provincial and municipal fiscals. This will require the incorporation of the proposed green economy programmes and projects into existing and future key performance areas (KPAs) and key performance indicators (KPIs). These will transcend the DETEA, and cover all sector departments.

Local financing can also be sourced from private sector companies and development finance corporations, including but not limited to:

- Sasol Limited;
- Eskom;
- Free State Development Corporation;
- Harmony Gold Mining Company; et cetera.

The funding could come in a number of forms and ways, including corporate social responsibility (CSR), development of water and wastewater infrastructure for own use, development of renewable energy plants (such as the Letsatsi Solar Park, biofuels production plants, etc).

Funding could also take a form of development finance, such as those offered by the FDC, DBSA, and others.

## 7.2 National and Regional

Nationally, funding could be provided from the National Treasury, the dti, the Department of Economic Development (DED), the Department of Environmental Affairs (DEA), the Department of Water Affairs (DWA), the Department of Energy (DoE), the Department of Agriculture, Forestry and Fisheries (DAFF), and others.

Funding can also be sourced from the DBSA, the African Development Bank (ADB), the private sector with national or regional reach, and others. There is also an avenue to access funding through:

- The Green Fund;
- Jobs Fund;

- Expanded Public Works Programme (EPWP);

## 7.3 International

There are a number of international organizations interested in biodiversity conservation and these include NGOs , microfinance as well as other bilateral institutions, e.g. European Union (EU), Australia Aid etcThe United Nations system is already supporting green economy activities. For example:

1. Under the UNDP-Global Environment Facility Small Grants Programme a number of green economy approaches have proven successful at the community level, and sustainable livelihoods have been an entry point to engage communities in green economy development processes in areas such as certification and revenue generation based on local produce.

2. The Seed Initiative of UNDP, UNEP and the International Union for Conservation of Nature (IUCN) has a growing database of local level, multi-stakeholder partnerships through which local entrepreneurs are advancing MDGs on the basis of green business development.

3. The United Nations Human Settlements Programme (UNHABITAT) is taking action in two key areas, namely (i) assisting national and local governments in reviewing and updating building laws and regulations; and (ii) revitalizing urban planning.

There is also a plethora of donor agencies and countries, including Germany, the USA, the United Kingdom, Norway, the Netherlands and others which can provide funding for green economy projects. From the donor agencies funding perspectives, there are already a number of bilateral agreements concluded between South Africa and potential donors. These include, but are not limited to:

- DfID;
- USAID;
- GIZ; etc

A list of potential partners and their funding areas is provided in Appendix D.

# 8

# GREEN ECONOMY STRATEGY DEVELOPMENT IMPETUS AND BEST PRACTICES

The implementation of the FSGES will require massive financial and other resources, which the province will not necessarily have. This calls for the mobilisation of the resources from the identified partners and potential funders. To ensure that the resources are mobilised in a formalized and professional manner, a resource mobilisation strategy needs to be developed.

The objectives of the resource mobilisation strategy will be to ensure that resources are mainstreamed for the implementation of the FSGES.

# 9 CONCLUSION

The Free State Green Economy Strategy highlights the need and urgency for a transition into a greener economy in the province. It provides an overview of Green Economy development from global, national and provincial perspectives. This was necessary to create policy linkages, and to enable resources to be mobilised within the internationally accepted frameworks.

This Strategy should be regarded as a living document, developed to enable programmes and projects to be initiated within the Green Economy. All the programmes and projects on the Implementation Plan have either been provided by relevant provincial government line functions, and they have been vouched for by them.

It is important to note that the Strategy provides a platform to deal with poverty alleviation and sustainable utilization of natural and capital resources.

# 10 REFERENCES


Barbier E.M. (2009). A Global Green New Deal. United Nations Environment Programme, Nairobi.

Burger, P. & Marinkov, M. 2005. The Various Dimensions of Commodity Dependence in Africa. South Africa Journal of Economics. University of Free State, Bloemfontein. Free State.

Centre for Development and Enterprise, 2005. Growth and Development in South Africa's Heartland, Centre for Development Enterprise, Johannesburg.

Department of Environmental Affairs (2011). National Strategy for Sustainable Development and Action Plan (NSSD 1) 2011 -14, Department of Environmental Affairs, Pretoria

Department of Environmental Affairs, (2005). South Africa's National Biodiversity Strategy and Action Plan. Department of Environmental Affairs, Pretoria.

DTEEA (2004). Draft Statement of the Environment Report for Free State, Bloemfontein, South Africa.

Echavarría, M. (2002). Financing Watershed Conservation: The FONAG Water Fund in Quito, Ecuador. In Pagiola, S., Bishop, J. and Landell-Mills, N. (eds.) Selling Forest Environmental Services: Market-based Mechanisms for Conservation and Development: 91–102. London: Earthscan.

FSPG (2007). Free State Provincial Growth and Development Strategy. Bloemfontein, South Africa.

Global Insight (2006). Regional Explorer Database. Pretoria, South Africa.

Global Water Partnership (2009). Triggering Change in Water Policies. Policy Brief 8. Stockholm: Global Water Partnership.

National Planning Commission (2011). National Development Plan, Vision for 2030. National Planning Commission, Pretoria.

Schreiner, B., Pegram, G., von der Heyden, C. and Eaglin, F. (2010). Opportunities and Constraints to Development of Water Resources Infrastructure Investment in Sub-Saharan Africa.

Southgate, D. and Wunder, S. (2007). Paying for Watershed Services in Latin America: A Review of Current Initiatives. Blacksburg: Virginia Tech.

Statistics South Africa (2012). 2011 Census. Provinces at a Glance. Pretoria, Statistics South Africa, Pretoria.

The Secretary-General's Advisory Group on Energy and Climate Change (AGECC) (2010). Energy for a Sustainable Future

- Summary Report and Recommendations. New York: AGECC.

UNEP (2011). Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication. Nairobi: UNEP.

United Nations (2010). The UN World Water Development Report: Water for People, Water for Life. Paris: United Nations Educational, Scientific and Cultural Organization (UNESCO).

United Nations Children's Fund (UNICEF) (2004). State of the World's Children 2005. New York: UNICEF.

United Nations Environment Management Group (EMG) (2011). Working Towards a Balanced and Inclusive Green Economy, A United Nations System wide Perspective.

World Health Organization and UNICEF (2010). Progress on Sanitation and Drinking Water: 2010 Update. Geneva: WHO.

# 11 GREEN ECONOMY STRATEGY DEVELOPMENT IMPETUS AND BEST PRACTICES

## 11.1 Appendix A: List of Stakeholders who participated during the development process

## 11.2 Appendix B: Overview of Potential Partners and Funders

| Potential Partners | Organizational Overview | Probability |
|---|---|---|
| FDC Free State Development Corporation | The Free State Development Corporation (FDC) is the official economic development, trade and investment corporation for the Free State Province, South Africa, and is located in the capital Bloemfontein.<br>It is the first point of contact for foreign and local investors, local exporters and local entrepreneurs who wish to take advantage of the unlimited opportunities in the Free State Province and the services offered by FDC.<br>The main services offered by the Free State Development Corporation include:<br>SMME support – both financial and non-financial<br>Providing investors with a comprehensive service in setting up business<br>Providing export ready Free State companies with assistance in identifying new markets and export opportunities for their products.<br>Property development and management<br>FDC will be critical in propelling all facets of Green Economy in the province. | |
| GREEN FUND (UNFCCC) | The Green Fund is an initiative emanating from COP17 proceedings and agreements to fund climate adaptation and mitigation in developing countries. Once instituted, the fund will make available about USD100bn per annum to fund green economy initiatives in the developing countries. If South Africa can secure USD2bn, it will assist in funding green economy.<br>It is believed that the fund can benefit the green economy programmes in their entirety, i.e. all thematic areas. | |
| UNDP | United Nations Development Programme (UNDP) is the UN's global development network, an organization advocating for change and connecting countries to knowledge, experience and resources to help people build a better life. UNDP is active in 166 countries including South Africa, working with them on their own solutions to global and national development challenges.<br>UNDP's network links and coordinates global and national efforts to reach these Millennium Development Goals (MDGs). The focus is on:<br>Democratic Governance;<br>Poverty Eradication;<br>Crisis Prevention and Recovery; and<br>Energy and Environment<br>UNDP helps developing countries attract and use aid effectively. The South Africa country office of the UNDP will be greening 2010 point of contact, and has already started working with DoT on sustainable transport for the 2010 and beyond.<br>Green Economy in general, and Climate Change, Renewable Energy and Energy Efficiency. | |

| Potential Partners | Organizational Overview | Probability |
|---|---|---|
| UNEP | The United Nations Environment Programme (UNEP) is the voice for the environment within the United Nations system. UNEP is an advocate, educator, catalyst and facilitator, promoting the wise use of the planet's natural assets for sustainable development.<br>UNEP:<br>Assesses global, regional and national environmental conditions and trends;<br>Develops international agreements and national environmental instruments;<br>Strengthens institutions for the wise management of the environment;<br>Integrates economic development and environmental protection;<br>Facilitates the transfer of knowledge and technology for sustainable development; and<br>Encourages new partnerships and mind-sets within civil society and the private sector.<br>UNEP works with many partners: United Nations entities, International organizations, National Governments, Non-governmental Organizations, Business, Industry, the Media and Civil Society. UNEP's global headquarters are in Nairobi, Kenya. UNEP is represented across the globe by six regional offices:<br>Africa: Nairobi, Kenya;<br>Asia and the Pacific: Bangkok, Thailand;<br>Europe: Geneva, Switzerland;<br>Latin America and the Caribbean: Mexico City, Mexico;<br>North America: Washington DC, USA;<br>West Asia: Manama, Bahrain. | |
| Eskom | Eskom Holdings Limited (Eskom) is a government-owned electric power utility company. It is a vertically integrated operation that generates, transmits and distributes electricity. It generates approximately 95% of the electricity used in South Africa.<br>Eskom's corporate social responsibility is mainly carried out through Eskom Development Foundation, a section 21 company responsible for integrating social investment initiatives. The Development Foundation operates extensively throughout South Africa in areas that are underdeveloped, especially in rural and new urban settlements. Corporate Environmental and Sustainability Department deals with CSR issues relating to environmental matters.<br>Solar Water Heating; Heat Pumps; Renewable Energy and Energy Efficiency; Training and Development | |
| | The Danish International Development Agency (DANIDA) is a Danish organization inside the Ministry of Foreign Affairs of Denmark, set up to provide humanitarian help and assistance in developing countries.<br>Danida runs various programmes for students from Asia and Africa. The students are called Danida Fellows. Once a month the Fellows (i.e. 50-100 students) are invited to Aarhus to take part in a weekend (i.e. one weekend each month) arrangement with cultural and social activities organized by the International Student Centre (ISC). During their 3 - 9 months stay in Denmark the Danida fellows study at various educational institutions all over Denmark. Back in their home countries they all work in or are connected to Danish supported projects or institutions. | |
| WWF | The WWF is a global environmental conservation organisation which was established in 1961. It is one of the world's largest and most experienced independent conservation organisations, with almost 5 million supporters and a global network active in more than 100 countries.<br>WWF's mission is to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature, by:<br>Conserving the world's biological diversity;<br>Ensuring that the use of renewable natural resources is sustainable; and<br>Promoting the reduction of pollution and wasteful consumption. | |
| TOTAL | Established in 1954, TOTAL South Africa today represents the largest single French investment in South Africa. The parent company, TOTAL, has the controlling interest in TOTAL South Africa of 50,1 percent of the shares, Total South Africa's black economic empowerment partner Tosaco holds 25 percent and the remaining 24,9 percent is held by Remgro.<br>Together with Sasol it is a partner in the Natref refinery, has a shareholding in the Safor refinery for the production of base oil for lubricant manufacturing, and TOSAS for bitumen production.<br>Training and Capacity Building, Awareness campaigns<br>Renewable Energy and Energy Efficiency | |

| Potential Partners | Organizational Overview | Probability |
|---|---|---|
| bp | BP, formerly known as British Petroleum, is a British energy company / multinational oil company with headquarters in London. The company is amongst the largest private sector energy corporations in the world, and one of the six "supermajors" (vertically integrated private sector oil exploration, natural gas, and petroleum product marketing companies. It provides its customers with fuel for transportation, energy for heat and light, retail services and petrochemicals products for everyday items.<br><br>BP has been involved in solar power since 1973 and its subsidiary, BP Solar, is now one of the world's largest solar power companies with production facilities in the United States, Spain, India and Australia, employing a workforce of over 2,000 people worldwide. BP Solar is a manufacturer of a wide range of solar electric (photovoltaic) panels. BP Solar is a global leader in providing solar energy solutions. It is innovative, progressive, performance driven and green. It is a global company focused on harnessing the sun's energy to produce solar electricity. BP Solar provides solar power solutions for homeowners, businesses and governments. This includes developing solar electric systems for a wide range of applications in the residential, commercial and industrial sectors.<br><br>Renewable Energy and Energy Efficiency | |
| | Shell is a worldwide group of oil, gas and petrochemical companies with interests in bio-fuels, wind and solar power and hydrogen. It helps to meet the global energy demand in economically, environmentally and socially responsible ways.<br><br>Shell Solar is a subsidiary of Shell and it is a renewable energy company producing and marketing solar panels for home, business and remote use.<br><br>Renewable Energy and Energy Efficiency | |
| sasol reaching new frontiers | Sasol Limited (Sasol) is an integrated international oil and gas company based in South Africa with substantial and growing chemical interests worldwide. The Sasol group also refines crude oil into liquid fuels in South Africa. They are currently constructing the natural gas pipeline from Mozambique, which is scheduled to come into operations in 2004. It is hoped that this will significantly contribute to environmental sustainability as coal-based operations will shift towards natural gas (cleaner production mechanisms).<br><br>Renewable Energy and Energy Efficiency | |
| USAID FROM THE AMERICAN PEOPLE | The United States Agency for International Development (USAID) is the government agency providing US economic and humanitarian assistance worldwide for more than 40 years. USAID is an independent federal government agency that works in agriculture, democracy & governance, economic growth, the environment, education, health, global partnerships, and humanitarian assistance in more than 100 countries to provide a better future for all.<br><br>Climate Change Awareness and Competence; Agro processing funding; | |
| Canadian International Development Agency | Canadian International Development Agency (CIDA) is Canada's lead agency for development assistance. It has a mandate to support sustainable development in developing countries in order to reduce poverty and to contribute to a more secure, equitable, and prosperous world.<br><br>Its Millennium Development Goals are to:<br><br>eradicate extreme poverty and hunger,<br><br>achieve universal primary education,<br><br>promote gender equality and empower women,<br><br>reduce child mortality,<br><br>improve maternal health,<br><br>combat HIV/AIDS, malaria and other diseases,<br><br>ensure environmental sustainability, and<br><br>develop a global partnership for development—all by 2015. | |
| DBSA | Development Bank of Southern Africa (DBSA) is one of several development finance institutions in South and Southern Africa. Its purpose is to accelerate sustainable socio-economic development by funding physical, social and economic infrastructure. DBSA's goal is to improve the quality of life of the people of the region.<br><br>The Bank plays a multiple role of Financier, Advisor, Partner, Implementer and Integrator to mobilize finance and expertise for development projects.<br><br>Job Fund – Renewable Energy, Energy Efficiency; Climate Change; Integrated Agribusiness Development; Waste Management; Water Management; Training and Capacity Building | |
| GEF | The Global Environment Facility (GEF) is an independent financial organization that was established in 1991, that provides grants to developing countries in order to fund projects and programs that benefit the global environment and promote sustainable livelihoods in local communities. The GEF grants support projects related to biodiversity, climate change, international waters, land degradation, the ozone layer, and persistent organic pollutants. | |

| Potential Partners | Organizational Overview | Probability |
|---|---|---|
| sappi | Sappi is the leading producer of coated fine paper in more than 100 countries worldwide. Their range of fine paper is widely used in a variety of applications, from books to wine labels, from magazines and brochures to catalogues and calendars.<br>They are also the world's largest producer of chemical cellulose (dissolving pulp), used primarily in the manufacture of viscose fibre and pharmaceutical products. In addition, they produce uncoated graphic and business papers, premium quality packaging papers and a range of speciality papers.<br>Their world-class assets are founded on geographically diverse manufacturing bases which include some of the most efficient paper machines in the world, while the emphasis on operational excellence is facilitated by 16,000 people around the world.<br>Water and waste water; Paper recycling; | |
| mondi | Mondi were first planted in 1967 in South Africa, when the former owners Anglo American plc built the Merebank Mill. Following more than two decades' growth and consolidation in South Africa, it came to Europe in the early 1990s to start a long period of expansion through acquisition.<br>Mondi is one of the leading global players in paper and packaging, outperforming its competitors in several of these areas. Its success is aimed at providing the flexibility to invest in every area of business as it progresses, sharing its success with its customers, its people and its communities, both local and global.<br>Paper recycling; | |
| PLASTICS FEDERATION OF SOUTH AFRICA | The Plastics Federation of South Africa coordinates, develops and promotes the interests of the South African plastics industry. The overall aim of the Plastics Federation is to ensure an efficient and effective plastics industry and the long term growth of the industry. This is achieved through the two-way communication of information, advice and skills to and from all its members, government and industry observers, education facilities, customers of the plastics industry, and the public at large.<br>Plastic Recycling | |
| DAIMLERCHRYSLER | Daimler Chrysler is a multinational automobile manufacturing company with notable presence in South Africa. Daimler Chrysler SA also embraces the challenge of Corporate Social Responsibility and implemented some programmes geared towards ensuring sound community development while maintaining sustainable employee relations.<br>Daimler Chrysler SA boasts on a world class CSR policy that enables them to stay focused on key identified areas that require interventions. This is implemented through the leadership of a dedicated department (Corporate Social Responsibility Department), and through individual operations. | |
| Telkom | Telkom is Africa's largest integrated communications company, providing integrated communications solutions to an entire range of customers.<br>Being one of the few companies with a large and diverse customer base, it provides services for:<br>More than 200 of the country's largest financial, retail, manufacturing and mining companies with domestic with domestic and international operations;<br>Approximately 550,000 large, medium and small businesses;<br>Wholesale customers such as the mobile operators, domestic value-added network service;<br>providers, domestic licensed network operators and international operators and service providers;<br>More than 2.4 million residential customers;<br>More than 280,000 Internet subscribers;<br>More than 143,000 ADSL subscribers. | |
| vodacom South Africa's Leading Cellular Network | Vodacom is an African cellular communications company providing a world class GSM (Global System for Mobile Communications) service to 7 million customers in South Africa, Tanzania, Lesotho and the Democratic Republic of Congo.<br>Vodacom Group (Pty) Ltd is the holding company of Vodacom (Pty) Ltd, Vodacom Service Provider Company (Pty) Ltd and Vodacom International Holdings (Pty) Ltd. | |
| Nampak packaging excellence | Nampak is Africa's largest packaging manufacturer. In South Africa it is able to offer customers one of the widest product ranges of any packaging company in the world, providing them with a total solution to their packaging needs where necessary.<br>Exports from the South African operations service customer needs in over 60 countries around the world. Nampak's globally competitive packaging is also increasingly being used by its customers to export their products to many foreign destinations.<br>The group is extensively involved in collecting and recycling all types of packaging. In addition to packaging, Nampak is also the largest manufacturer of tissue paper products and holds a substantial share of the paper merchanting market. | |
| The World Bank | The World Bank is a vital source of financial and technical assistance to developing countries around the world. It is not a bank in the common sense. It is made up of two unique development institutions owned by 185 member countries: the International Bank for Reconstruction and Development (IBRD) and the International Development Association (IDA).<br>Each institution plays a different but supportive role in the mission of global poverty reduction and the improvement of living standards. The IBRD focuses on middle income and creditworthy poor countries, while IDA focuses on the poorest countries in the world. Together they provide low-interest loans, interest-free credit and grants to developing countries for education, health, infrastructure, communications and many other purposes. | |

| Potential Partners | Organizational Overview | Probability |
|---|---|---|
| Coca-Cola | Coca-Cola will help build a $45 million plastics recycling plant in South Carolina and has set a goal of having every bottle it sells in the U.S. recycled or reused, Forbes reports.<br><br>The company estimates about 10 percent of its plastic bottles are recycled now. It has not set a date for reaching the new goal. The company will spend $60 million this year on its recycling efforts, The Washington Post reports.<br><br>Coca-Cola will loan or invest $44 million in the plant project, which is a joint venture with United Resource Recovery Corp. The 30-acre plant, to be built in Spartanburg, S.C., would produce about 100 million pounds of food-grade recyclable plastic per year - the equivalent of nearly 2 billion 20-ounce Coca-Cola bottles.<br><br>Earlier this week, Coca-Cola unveiled a new bottle design that is completely recyclable and uses five percent less PET than its predecessor.<br><br>To assist in the recycling effort, Coca-Cola Enterprises, the world's largest marketer, distributor and producer of Coca-Cola products, has launched Coca-Cola Recycling LLC. Based out of CCE's Atlanta headquarters, Coca-Cola Recycling will focus on recovering and recycling packaging materials used in North America – including PET, aluminium, cardboard and plastic film.<br><br>Measures on waste reduction and recycling | |
| SAB<br>The South African Breweries Limited | SABMiller is one of the world's largest brewers, with brewing interests and distribution agreements in over 60 countries across six continents. SABMiller's brands include premium international beers such as Pilsner Urquell, Peroni Nastro Azzurro and Miller Genuine Draft, as well as an exceptional range of market-leading local brands such as Aguila, Miller Lite, Snow and Tyskie.<br><br>Measures on waste reduction and recycling | |