



SWITCH AFRICA GREEN

REVIEW OF LAWS, POLICIES AND BUSINESS ENVIRONMENT

Country Implementation Report and Plan



environmental affairs
Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA



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is funded by the
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Foreword



A handwritten signature in black ink, appearing to read 'Ngcaba'.

**Nosipho Ngcaba, Director – General
Department of Environmental Affairs**

South Africa is faced with a number of environmental challenges, threatening to our natural capital, and if not acted upon, these will ultimately impact on the opportunities for sustainable economic growth in the country.

The SWITCH Africa Green programme is funded by the European Union (EU) and implemented by United Nations- Environment Programme (UNEP), in collaboration with United Nations Development Programme (UNDP) and United Nations Office for Project Services (UNOPS). SWITCH Africa Green has been developed to support African countries in their transition to an inclusive green economy, and in promoting a shift to sustainable consumption and production (SCP) patterns and practices. The SWITCH Africa Green Programme is currently being implemented in 6 pilot countries Burkina Faso, Ghana, Kenya, Mauritius, South Africa, and Uganda. Ethiopia will be the seventh country to enter the programme, for phase 2.

The programme aligns to a number of national and regional priorities such as, but not limited to:

- Resource efficiency (energy and water conservation),
- Food security issues,
- Poverty alleviation and
- Environmental degradation.

These national and regional imperatives were identified during the 2002 World Summit on Sustainable Development (WSSD) and were further refined in the lead-up to the United Nations Rio+20 Conference, in 2012. The Africa Regional Flagship Programmes were established after the Rio+20 Conference as a regional approach and mechanism for the implementation of green economy in order to achieve sustainable development.

The SWITCH Africa Green Programme supports the following three broad components:

- Policy Support,
- Green Business Development and
- Networking Facilitation.

The following five sub-themes are embedded within the three broad components:

- Energy efficiency
- Labelling and standards
- Water efficiency
- Eco-innovation and
- Sustainable trade.

The Department of Environmental Affairs welcomes the extension of the programme in realizing the goals and targets as set out under phase 2 and in collaboration with the Switch Africa Green partners South Africa remains committed to advancing sustainable economic development whilst being cognizant of the impact that this may have on the environment. In an effort to address these challenges the Department of Environmental Affairs (DEA) aims to mainstream environmental and social considerations and performance measures into national policies and the operations of businesses, thereby contributing concretely towards sustainable development.

In light of the Switch Africa Green broader programme priorities, South Africa has identified three key priority sectors, namely; manufacturing, agriculture and integrated waste management. Following an extensive consultative process and mapping exercise, through cross-sectoral approaches, the aforesaid priority sectors were viewed as having high impact in terms of the overarching national strategic objectives and imperatives of transitioning towards a low-carbon and climate resilient economy, in driving and embedding a sustainable development focus and trajectory in the mainstream economy.

Given the realization of the sustainable consumption and production (SCP) patterns observed through the implementation of phase 1 of the programme, the European Union has made available grant finances to implement phase 2.

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Acronyms

10YFP	Ten Year Framework of Programmes
AfDB	African Development Bank
AIDS	Acquired Immune Deficiency Syndrome
AMCEN	African Ministerial Conference on Environment
APAP	Agricultural Policy Action Plan
ARSCP	African Roundtable on Sustainable Consumption and Production
AU	African Union
BBC	Buy Back Centers
COP	Conference of Parties
CSIR	Council for Scientific and Industrial Research
EDD	Department of Economic Development
DEA	Department of Environmental Affairs
DoE	Department of Energy
DST	Department of Science and Technology
ECD	Enterprise Creation for Development
EU	European Union
GDP	Gross Domestic Product
GHG	Green House Gas
HIV	Human Immunodeficiency Virus
HRDS	Human Resource Development Strategy
ICT	Information Communication & Technology
ILO	International Labour Organisation
IPAP	Industrial Policy Action Plan
IRP	Integrated Resource Plan
IS	Industrial Symbiosis
KZN	Kwa-Zulu Natal
LTMS	Long Term Mitigation Strategy
MDG	Millennium Development Goal
MOU	Memorandum of Understanding
MTSF	Medium Term Strategic Framework
NCPC	National Cleaner Production Centre
NDP	National Development Plan
NGP	New Growth Path
NIPF	National Industrial Policy Framework
NFSD	National Framework on Sustainable Development

NSI	National System of Innovation
NSSD	National Strategy for Sustainable Development
NT	National Treasury
NTCC	National Technical Coordination Committee/s
NWMS	National Waste Management Strategy
NEMWA	National Environmental Management Waste Act
PMI	Purchasing Management Index
PPP	Purchasing Power Parity
RECP	Resource Efficiency and Cleaner Production
REIPPP	Renewable Energy Independent Power Producer Procurement Programme
SAG	Switch Africa Green
SALGA	South African Local Government Association
SCP	Sustainable Consumption and Production
SEZ	Special Economic Zone
SMME	Small Medium and Micro Enterprise
TB	Tuberculosis
DTI	The Department of Trade and Industry
UK	United Kingdom
UN	United Nations
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNIDO	United Nations Industrial Development Organisation
UNOPS	United Nations Office for Project Services
WSSD	World Summit on Sustainable Development

Executive Summary

Many African countries are pursuing green economy initiatives in partnership with development agencies. 'Switch Africa Green' is an initiative conceptualized by the European Union. The European Union has secured the collaboration of a number of United Nations Agencies, in particular the United Nations Environment Programme (UNEP), the United Nations Development Programme (UNDP) and the United Nations Office for Project Services (UNOPS). The initiative is being undertaken in Asia, the Mediterranean region and in Africa. The programme for Africa is being implemented in six countries inclusive of: South Africa, Kenya, Ghana, Uganda, Burkina Faso and Mauritius. The lead national agency is the Department of Environmental Affairs, in South Africa.

The programme has three components, namely 1) policy support, 2) green business development and 3) networking facility. Governments and the private sector in the participating countries will benefit from support for green business development and policy development. The programme also promotes/facilitates networking amongst related initiatives and stakeholders working within the green economy and sustainable development areas.

The policy support component responds to specific legislative needs of each country, with a focus on enabling and strengthening sustainable consumption and production patterns. The Green Business component aims at supporting Small, Medium and Micro Enterprises (SMMEs) to move towards resource-efficient green business models. The third component on Networking, focusses on national and inter-country/regional information exchange to facilitate dissemination and replication of successes and lessons learnt. In South Africa, three sectors are targeted for the implementation of the Switch Africa Green programme. These include; agriculture, manufacturing and integrated waste management.

A desktop study of the South African economy was undertaken to support the implementation of the programme and review of various country priorities. The study comprised of a review of current green economy initiatives in the country. The policy and regulatory environment underpinning the selected sectors, (i.e. agriculture, manufacturing, and integrated waste management) were also summarized. Following the review, various programmes and initiatives were evaluated, that could support Small, Medium and Micro Enterprises (SMMEs) in the three identified sectors.

The identification of gaps and opportunities was guided by following criteria; a) evidence of a significant gap or gaps, b) potential to impact a large beneficiary group, c) potential to advance the green economy, and d) availability of case studies that illustrate the potential benefits and how to realize these. The outcome of the review and subsequent consultations identified three focus areas which linked to each of the target sectors for consideration: Innovative small-scale farmer improvement (agriculture), industrial symbiosis (manufacturing), and recycling centres (waste management). Several activities linked to three sector initiatives were further unpacked as indicated in Table 1.

Table 1: Activities linked to the 3 sectors

Focus Area	Activity
Agriculture (organic agriculture and agro-processing)	• Cleaner production and resource efficiency • Eco-labelling and certification • Sustainable procurement • Consumer awareness • Water efficiency
Manufacturing (industrial symbiosis)	• Water efficiency • Renewable energy manufacturing strategies • Industrial energy efficiency • Biofuels
Waste management activities (buy-back centres)	• Industrial waste management • Recycling • Reuse • Recovery

The sectoral focus and activities align particularly well with four points of the government's Nine-Point Plan. These are inclusive of the following:

- Revitalising agriculture and the agro-processing value chain
- Encouraging private sector investment
- Resolving the energy challenge and
- Unlocking the potential of small, medium and micro enterprises, cooperatives and township enterprises.

Further to the alignment of the Switch Africa Programme to Government Programme of Action, key consideration must also be given to communication and awareness as well as stakeholder engagement.

The typical processes of engagement and consultation are often intimidating to the informal sector stakeholders. This highlights the need to be flexible with communication to ensure accessibility to the intended target audience.

The national execution of the project in South Africa is coordinated by a National Technical Coordination Committee. The members of this committee are inclusive of the Departments of Environmental Affairs (DEA) and of Trade and Industry (the dti). Other members include European Union (EU) Country office, and United Nations (UN) Agencies (United Nations Development Programme & United Nations Environment Programme) and grantees.

South Africa requires a number of incentives over a period of time to move industries away from energy and carbon intensive processes and practices. The programme aims to demonstrate such action.

Phase one and two of the programme comprise of a period of four years each, respectively.



1. Introduction

Several African countries are actively engaged in the transition to an inclusive green economy, and in promoting a shift towards sustainable consumption and production (SCP) patterns, that together contribute to poverty alleviation and sustainable development in the region. To support these efforts, the European Union (EU) has developed 'SWITCH Africa Green'; a pilot initiative with the aim to foster green economy transformation in six African countries. In implementing this programme, the United Nations Environment Programme (UNEP) partnered with other UN agencies and in particular the United Nations Development Programme (UNDP) and the United Nations Office for Project Services (UNOPS).

The SWITCH Africa Green Programme builds on the experience of similar regional projects and programmes undertaken in Asia (SWITCH Asia) and the Mediterranean (SWITCH Med) that are being funded by the EU. This programme also builds on past and present capacity building activities being undertaken by UNEP, its partners and other relevant organizations promoting sustainable business ventures, green economy policies and addressing SCP challenges. These include domestic and international activities which increase access to sustainable energy resources and services, whilst conserving both ecosystems and the services they deliver and advancing green economy transition through macroeconomic analysis in the African region.

The programme aims to support government and the private sector in six African countries to follow-up on the outcomes of the Rio+20 Conference. The decision taken on SCP of the 14th session of the African Ministerial Conference on Environment (AMCEN) re-enforces the outcome of Rio+20. The programme supports green business development as well as the implementation of the African Ten-Year Framework Programme (the African 10YFP) on SCP. Furthermore, the programme further enhances support and synergies with on-going and potential future green economy and SCP initiatives in the region, including the global 10YFP and the EU-supported African Green Economy Initiative being implemented by UNEP.

Partners in this overall set of activities include UN agencies, notably UNDP and the United Nations Office for Project Services (UNOPS), the African Union Commission, the African Roundtable on SCP (ARSCP) and the African Development Bank (AfDB). Existing work areas on poverty and environment, SCP, green economy and green growth is of relevance with earlier mentioned partners. Key government departments include the Departments of Environment Affairs (DEA), of Trade and Industry (the dti), and of Economic Development (EDD) and the National Treasury (NT), as well as National

Environmental Protection/Management Agencies and Authorities. The programme also engages directly with private sector, and particularly intermediary business organizations and micro, small and medium sized enterprises (SMMEs), both through policy dialogue and national level projects in the six African partner countries.

The specific objectives of the programme are to support the development of green businesses, eco-entrepreneurship and promote the use of SCP practices by having in place:

- Small, Medium and Micro Enterprises (SMMEs) and business service providers that are better equipped to seize opportunities for green business development,
- Better informed producers and consumers, and
- Enabling conditions inclusive of clear policies, sound regulatory instruments, incentives structures (including tax, other fiscal and market-based instruments) influencing key sector(s) in the six African countries.

The focal sectors for South Africa are *Agriculture, Manufacturing and Integrated Waste Management*.

The SWITCH Africa Green programme combines work at both the micro and macro-levels, providing targeted support to green private sector development initiatives. SMMEs are further supported through intermediary business organizations that facilitate changes in practices and choices to be made by producers and consumers. The programme seeks to link on-going bilateral projects and programmes supported by the EU and its Member States, which support green business development and SCP practices, and builds on experiences gained in other similar EU-funded projects, such as SWITCH Asia. The programme also links with national initiatives to ensure synergy during implementation of the different initiatives in the country.

The programme has three main components:

- The Policy Support component which responds to the specific needs of each pilot country, building on and scaling up activities to ensure strengthened institutions and appropriate tools and instruments. These instruments include policies, regulatory frameworks, incentives structures, tax and market-based instruments enabling private sector-led inclusive green growth through green business development, eco-innovation and policies, practices and actions promoting a shift to sustainable consumption and production patterns in targeted sector(s).

- The Green Business component aims at supporting transformation towards an inclusive green economy by providing services to SMMEs that enable them to start and develop resource efficient and green business based on sustainable production practices.
- A Networking Facility component aims at providing project support services such as fostering the networking and communication among the projects and countries, distilling knowledge from project implementation for wider replication, and facilitation of policy uptake.

These three components are linked under the overall coordination of UNEP, and may have a key role in the overall project implementation and the development of the national level support packages. Coordination at the national level within the six project countries is supported by an UN-based coordinator. The EU country office guides the project implementation process through the National Technical Coordination Committee (NTCC).

Activities are being linked to the global level in the related fields of green economy and SCP through the regional consultations and collaborative platforms. The SWITCH Africa Green programme accommodates for capacity building and other relevant events in the beneficiary countries.



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National Landscape and the Green Economy

2.1 Brief Economic Overview

In 2012, South Africa tabled its National Development Plan (NDP) Vision 2030. The plan provides a blueprint for the country in order to address challenges being faced such as poverty, unemployment and inequality. In response to the challenges outlined in the NDP, the country has further developed a number of strategies and action plans, key amongst which include; the New Growth Path and the Industrial Policy and Action Plan. In its 2015 State of the Nation Address, the Government of South Africa introduced the Nine Point Plan to further boost economic growth in the country and promote much needed job creation. Please refer to Annexure A for further details on the Nine Point Plan. The Nine Point Plan is inclusive of:

- Resolving the energy challenge.
- Revitalizing agriculture and the agro-processing value chain.
- Advancing beneficiation or adding value to our mineral wealth.
- More effective implementation of a higher impact Industrial Policy Action Plan.
- Encouraging private sector investment.
- Moderating workplace conflict.
- Unlocking the potential of SMMEs, cooperatives, and township and rural enterprises.
- State reform and boosting the role of state-owned companies; ICT infrastructure or broadband roll-out; water, sanitation and transport infrastructure.
- Operation Phakisa, aimed at growing the ocean economy and other sectors

The Nine Point Plan is expected to contribute to the realization of the objectives of the NDP, namely a real gross domestic product growth of 5%, reduction of the unemployment rate from 25% to 6%, and the reduction of income inequality by the year 2030. Particularly relevant is Chapter five of the NDP which focusses on sustainability and the transition to a low-carbon economy. An overview of the policies is presented in Section 2.2.

The Nine Point Plan also seeks to ensure sufficient generation of energy, greater roles in the economy for small businesses in manufacturing and agriculture, greater transformation, more localized manufacturing, improved water and sanitation, connectivity and less labour unrest. Of particular

relevance for the Switch Africa Green programme for SA, are the points dealing with the following:

- Energy challenges and the opportunities presented for renewable energy generation, particularly small scale decentralized energy generation whereby SMMEs have opportunities in solar photovoltaic and solar thermal options as well as biomass to energy generation.
- Agriculture and agro-processing given that agriculture is one of the three focal areas of Switch Africa Green programme for SA.
- SMME capacity in green business development.
- Integrated waste management, with the objective of diversion of waste from landfill.

Each of the focal areas is developed further, and case studies to suggest the way forward are presented in Sections 4 and 5, respectively.

2.1.1 Macro-economic Prudence:

A sustained record of macro-economic prudence and a supportive global environment enabled South Africa's gross domestic product (GDP) to grow at a steady rate for a decade up to the global economic down turn of 2008-2009. Improvements in the public budget management system and efforts to restore the macro fundamentals by National Treasury played an essential role and achieved the following performance by 2015:

Population (millions)	53.0
GDP (US\$ billions)	350.8
GDP per capita (US\$)	6 621
GDP (PPP) as share (%) of the world	0.69

Due to consistent and sound budgetary policies, South Africa has been able to tap into international bond markets with reasonable sovereign risk spreads. The 2012 Open Budget Index prepared by the International Budget Partnership ranked South Africa second among 94 countries surveyed. In 2014, however, South Africa's ratings were downgraded by some rating agencies citing poor growth prospects mainly because of labour market instability and rising government debt as well as high deficits on the current account. The GDP forecast showed a downward trend to 2016 which persisted from a peak in 2013, as illustrated in Figure 1.

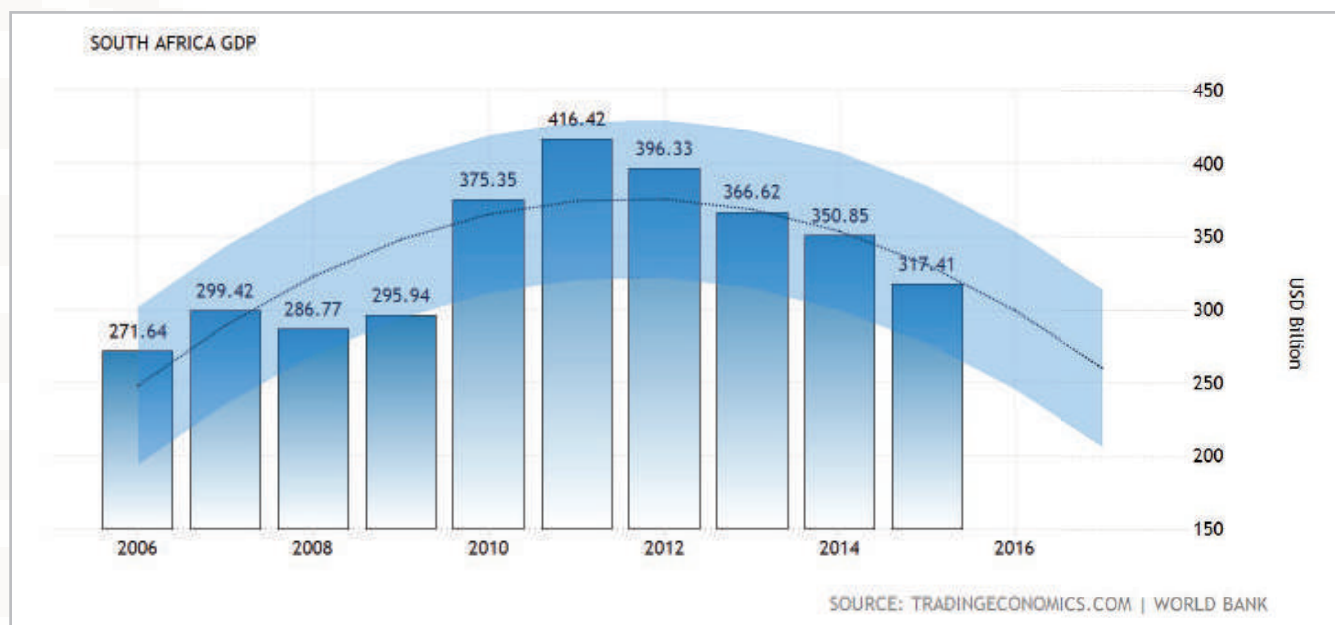


Figure 1: SA GDP forecast to 2016 (Trading Economics, 2016)

Pro-poor orientation of public spending has contributed to improved social development indicators in a range of areas. Given this approach, a number of Millennium Development Goals (MDGs) were achieved. Social insurance programs currently cover approximately 16 million people and, at 3.5% of GDP, and is more than twice the median spending among developing economies.

2.1.2 Gross Domestic Product Overview:

The diverse structure of the South African economy is a critical aspect of its historical and current growth performance. The trade and manufacturing sectors continue to occupy a significant share of the South Africa economy. Recent trends on GDP growth is illustrated in figure 2.

Figure 2 illustrates on structural changes in various sectors. The trade sector is the largest player in the business landscape, contributing 36% to the R2,3 trillion total turnover. The manufacturing sector is on second place with 27%, followed by business services with 12%, respectively (StatsSA, 2017).

Despite investment incentives, less than a decade into the 21st century, many countries, including South Africa, are experiencing a global economic crisis. This has affected economic growth in South Africa over the last few years, and a subsequent deceleration in rate of economic growth.

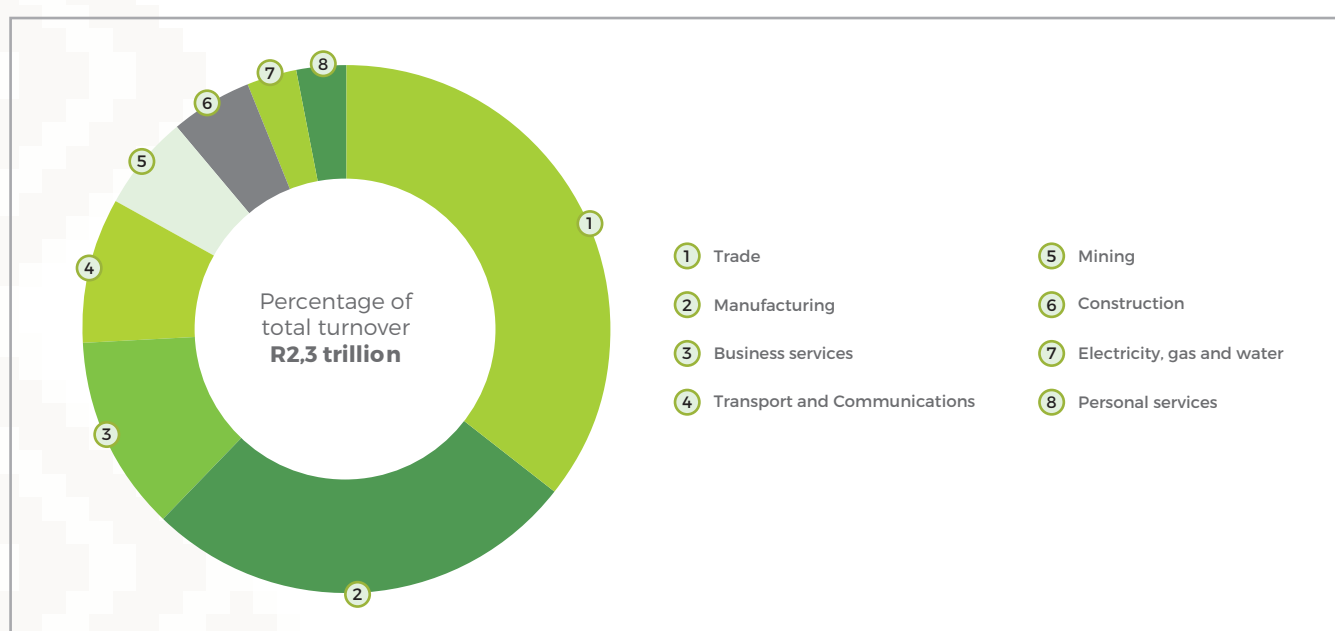


Figure 2: Turnover generated by the South African formal business sector in the second quarter of 2017 (StatsSA, 2017)

South Africa experienced an average growth rate of approximately 5% in real terms between 2004 and 2007. However, for the period 2008 to 2012, the recorded average growth rate has been just above 2%. This has been largely as a result of the global economic recession. GDP has been on 1.1% as of September 2017, although 1.3% GDP growth is projected by the National Treasury (www.treasury.gov.za).

Of the nine provinces in South Africa, three power houses stand out. Gauteng, Kwa-Zulu Natal and the Western Cape which collectively contribute a significant portion to the country's value add which has been reported at over 60 percent.

2.1.3 Key Development Challenges:

South Africa is a dual economy with one of the highest inequality levels in the world, perpetuating inequality and exclusion. With an income Gini coefficient of approximately 0.72 in 2015 which increased from 0,68 in 2006. The top decile of the population accounts for more than 50% of the country's income, while the bottom decile accounts for 0.5%. The bottom half accounts for less than 7% (www.StatsSA.gov.za).

Life expectancy, after falling from 62 years in 1992 to 53 years in 2010, recovered to 62 years in 2014. Currently, life expectancy, as of 2017 is estimated at 61,2 years for males and 66.7 years for females. The recent recovery was in large part due to the rapid expansion of the antiretroviral treatment programs to fight HIV/AIDS and declines in both adult and infant mortality. The poor are particularly vulnerable, and high rates of Human Immunodeficiency Virus (HIV) and Acquired Immunodeficiency Syndrome (AIDS) infections, as well as Tuberculosis (TB) infections, have severely strained the health system, contributing to the poor health indicators.

2.1.4 Recent Economic Developments:

South Africa's GDP growth is estimated at 2.0% on average due to a combination of domestic constraints and external headwinds arising from the fall in commodity prices and slowdown of the Chinese economy. The weak growth performance has exacerbated already high unemployment, inequality, and macro vulnerabilities. However, a slight recovery is expected with real GDP growth estimated at 2% in 2018 and 2.2% in 2019 (www.treasury.gov.za).

The weak economic outlook has made the fiscal outlook more challenging. The Government announced an adjustment package of expenditure savings (0.6% of GDP) and tax measures (0.6% of GDP) to reduce the budget

deficit from 4.0% of GDP in 2014/15 to 1.3% of GDP in 2017 and stabilize the gross debt burden at approximately 50% of GDP and subsequently helping to minimize pressures on the sovereign rating.

As a growing and developing economy, South Africa is facing environmental degradation and resource depletion challenges, which threaten opportunities for sustainable economic growth. The dti's green industry agenda covers renewable energy and nuclear energy, waste and recycling water and waste water, industrial climate change response measures and resource efficient and cleaner production methods which collectively aim to improve resource productivity and environmental performance. The initiative aims to mainstream environmental and social considerations and performance measures into national policies and the operations of businesses, promoting industrial innovation, industrial competitiveness, sustainable entrepreneurship, and the creation of green jobs, thereby contributing towards sustainable development.

The country approved the National Framework for Sustainable Development in 2008, which signaled a new wave of thinking that was aimed at promoting the effective stewardship of South Africa's natural, physical and social capital. The National Strategy for Sustainable Development and Action Plan builds on the framework and covers key areas of human development, ecological protection, economic growth, greater efficiency and equity. In 2011, the Government of South Africa signed the Green Economy Accord as an outcome of social dialogues on the New Growth Path. Entrepreneurship and the advancement of SMMEs as the catalyst to achieving economic growth and development have been subsequently identified as priority areas of intervention. The up-scaled Industrial Policy Action Plan 2017 (IPAP) identifies the priorities areas for green industries.

The Department of Environmental Affairs has made available approximately US\$ 88,5 million (against a rate of R13,5) to implement a Green Fund. The Fund is aimed at facilitating investment in green initiatives to transition South Africa to a greener economy and support socio-economic development. The Green Fund is designed to promote innovative and high impact green programmes through catalytic finance that enables to scale up, with the intention for possible replication elsewhere in the country. The fund also aims to strengthen capacity to mainstream low carbon and climate resilient initiatives into South African economy. SW ITCH Africa Green activities do complement the Green Fund objectives.

Through the Department of Trade and Industry, the South African government also developed the Industrial Energy Efficiency Improvement Project that was established by the United Nations Industrial Development Organisation (UNIDO) in 2010. The project was set to contribute to the national energy demand reduction target of 15% by the year 2015 for mining and industry, and 12% for the country as a whole. The programme is active in promoting both energy efficiency and water efficiency in industries.

South Africa is also one of the ten board members of the global 10YFP, and hosts a large and active National Cleaner Production Centre (NCPC), as a national programme of the government. The NCPC delivers support on resource efficient and cleaner production (RECP) methodologies to assist a large segment of South African industry to lower costs through reduced energy, water and materials usage, and waste management. The RECP activities which are being implemented builds upon cleaner production by accelerating the application of preventive environmental strategies. This is applied to processes, goods and services to increase the efficiency and competitiveness of companies, while also reducing risks to humans and the environment. Between 1 April 2016 and 31 March 2017, energy, water and materials savings valued at R 72.8 million were measured in 33 companies that had implemented RECP interventions in their production plants. In addition, potential savings of R 383 million per annum were identified in 128 plants through RECP assessments.

2.2 Switch Africa Green Sectors

2.2.1 Agriculture:

South Africa has a dual agricultural economy, with both well-developed commercial farming and more subsistence-based production in the rural areas. Agricultural sector consists largely of cattle and sheep farming, with only 13% of land being used for growing crops. As of 1993, South African agricultural sector GDP averaged R58 million until 2017 reaching an all-time high of R78 million in the fourth quarter. In the second quarter of 2017, South Africa's agricultural GDP increased to R74 million from the R68 million in the first quarter of 2017 (tradingeconomics.com).

Approximately 7% of the South African employed population are in the agricultural sector. In a country where unemployment levels are high and identified as a priority, the agricultural sector tries to supplement jobs by providing for the unskilled labor markets. Government is working to develop small-scale farming in efforts to boost job creation. The greatest limitation is the availability of water being

located geographically in a water scarce region due to uneven and unreliable rainfall patterns. Approximately 1.3 million hectares are under irrigation, and with over 60% of all available water being used for irrigation in the agricultural sector (businessstech.co.za).

Agriculture as a percentage of GDP has decreased over the past four decades and currently contributes to approximately 2.5% of the GDP. Although, farming remains vitally important to the economy with 876,000 people formally employed, it is estimated that approximately 8.5 million people are directly or indirectly dependent on agriculture for their employment. The New Growth Path includes programmes to promote commercially-oriented small-scale farming (farmersweekly.co.za).

Agro-processing within the manufacturing sector contributed 31.5%. The manufacturing sector contributed 4.3% to the GDP in 2014. Although the agro-processing sector was one of the first sectors to implement RECP methodologies, its vast size and diverse nature means that there are still numerous organizations unaware of the benefits of RECP and the opportunities associated with participating in the project. Agriculture is also one of the four sectors adopted for emphasis in the Green Economy Modelling Report for South Africa.

2.2.2 Manufacturing

The manufacturing sector provides an environment for boosting the growth of other activities, such as services, and achieving specific outcomes, such as employment creation and economic empowerment. The sector further employed approximately 9.2 million people in 2016. The manufacturing output accounted for 15% of GDP as of June 2017.

In October 2017, South Africa's Purchasing Management Index (PMI) rose to 47.8 from 44.9 in September 2017. Nonetheless, the PMI still remained below the 50 point mark which defines contraction from economic growth. A reading of above 50% indicated that the manufacturing economy is generally expanding whilst a reading below 50% means that it is on the decline. In comparison to the other BRICS countries, Brazil is on 51.2% China on 51% and India on 50.3%.

2.2.3 Integrated Waste Management

Through the country's commitment to sustainable development, South Africa aims to balance the broader economic and social challenges of a developing an unequal society while protecting its environmental resources. There is a need to eliminate the unnecessary use of virgin

material and the need to support sustainable product design, resource efficiency and waste prevention. This means re-using products where possible and recovering value from products when they reach the end of their lifespan through recycling, composting or energy recovery.

The Department of Environmental Affairs is mandated to ensuring a safe and healthy environment that is not harmful to the well-being of the citizens of the country. In recognition of this Constitutional obligation, the department promulgated the National Environmental Management: Waste Act 59 of 2008 (Waste Act) and in 2010 developed and approved the National Waste Management Strategy (NWMS) in the face of rapid industrial development in the country, and to enhance existing waste management efforts. The objectives of the Waste Act (2008) are structured around the steps in the waste management hierarchy, which is the overall approach that informs waste management in South Africa.

The South African National Environmental Management: Waste Amendment Act (Act no 26 of 2014) defines waste as any substance, material or object, that is unwanted, rejected, abandoned, discarded or disposed of, whether or not that substance, material or object can be re-used, recycled or recovered.

Waste Management in South Africa has been based on the principles of the waste management hierarchy. The waste management hierarchy offers a holistic approach to the management of waste materials, and provides a systematic method for management of waste during the waste lifecycle, the hierarchy addresses waste avoidance, reduction, re-use, recycling, recovery, treatment, and safe disposal as a last resort. This aims to eventually reduce the reliance of South Africa's waste disposal at landfills, as currently the majority of waste ends up being landfilled.

The Department of Environmental Affairs Second Environment Outlook Report indicated that Waste management services rely heavily on landfilling which account for the majority of licensed waste facilities across the country. Over 90% of all South Africa's waste is disposed at landfill sites. This is regardless of the existence of a range of alternative waste treatment options, including waste recycling facilities available in the country.

In 2011, South Africa generated approximately 108 million tonnes of waste, of which 98 million tonnes was disposed at landfills. Approximately 59 million tonnes was general waste, 48 million tonnes currently unclassified waste and the remaining one million tonnes was of hazardous waste. Only 10% of all waste generated in South Africa was recycled in 2011 (StatsSA Census 2011).

The South African government has made strides to minimize and divert waste from landfilling by introducing and constructing waste transfer stations, buy-back centres, material recovery facilities, composting facilities and street cleansing & beautification. In addition, the Waste Phakisa programme aims at fast tracking the implementation of solutions for waste management in the country.

2.3 National and Provincial Green Economy Context

The Department of Environmental Affairs states that the green economy refers to two interlinked developmental outcomes for the South African economy, namely:

- Growing economic activity (which leads to investment, jobs and competitiveness) in the green industry sector; and
- A shift in the economy as a whole towards cleaner industries and sectors with a low environmental impact compared to its socio-economic impact.

Central to achieving these outcomes is the creation of green jobs and decoupling economic growth from resource consumption. The International Labour Organisation (ILO) defines Green Jobs as "decent jobs that contributes to preserve or restore the environment, be they in traditional sectors such as manufacturing and construction, or in new, emerging green sectors such as renewable energy and energy efficiency". Decoupling entails "reducing the amount of resources such as water or fossil fuels used to produce economic growth and delinking economic development from environmental deterioration".

South Africa's transition to a green economy is significantly decentralised and involves all spheres of government. Key relevant national policies include:

- National Development Plan (year),
- National New Growth Path,
- Medium-term Strategic Framework,
- National Framework for Sustainable Development National Strategy, and Action Plan on Sustainable Development,
- National Climate Change Response Plan,
- Industrial Policy Action Plan,
- Green Economy Accord,
- Agricultural Policy Action Plan and
- Long Term Mitigation Scenarios.

Overseeing this transition is the joint responsibility of the Departments of Economic Development, of Environmental Affairs and of Trade and Industry. Other departments involved include the Departments of Energy, of Labour and the National Treasury.

The National New Growth Path (year) identifies viable changes in the structure and character of the country's production sector in order to promote a more inclusive and greener economy in South Africa. The main strategies outlined in the New Growth Path include:

- Comprehensive support for energy efficiency and renewable energy as required by the second Integrated Resources Plan (IRP2), including appropriate pricing policies, combined with programmes to encourage the local production of inputs, starting with solar water heaters;
- Public employment and recycling schemes geared to greening the economy;
- Stronger programmes, institutions and systems to diffuse new technologies to SMMEs and households;
- Greater support for research and development and tertiary education, linked to growth potential and the development of South Africa as the higher education hub of the continent; and
- Continued reduction of the cost of, and improved access to broadband internet.

The National New Growth Path also sets targets for employment creation in the green economy, for example "Jobs Driver 3: Seizing the potential of new economies. The New Growth Path targets 300 000 additional direct jobs by 2020 to green the economy, with 80 000 in manufacturing and the balance of the jobs in construction, operations and maintenance of new, environmentally friendly infrastructure. The potential for job creation rises to well over 400 000 by 2030. Additional jobs will be created by expanding the existing public employment schemes to protect the environment, as well as in production of biofuels."

In addition, the government is intent on adopting a low-carbon economy with target of a 34% reduction in carbon emissions by 2020 and a 42% reduction by 2025. These mitigation actions are viewed as key building blocks for a green economy in the country.

The Medium Term Strategic Framework Programme of Action makes a clear commitment to promoting the green economy and sustainable development through the following:

- Protection and continual enhancement of environmental assets and natural resources; Use of renewable energy resources;
- Creation of green jobs and green industries in order to mitigate the impacts of climate change;
- Development of the economy in order to create decent work and reduce income inequality.

The Industrial Policy Action Plan (IPAP) 2016/17 builds upon the successes achieved and lessons learnt where industrial policy is well designed and the subject of stakeholder engagement and collaboration is effectively resourced and successful. The core identified objectives of the IPAP are as follows:

- Promotion of labour-absorbing industries,
- Contribution towards industrial development in Africa,
- Diversifying the economy,
- Industrialization model focused on inclusive growth and
- Movement towards a knowledge economy.

The IPAP 2016/17 seeks to support and further develop the following sectors:

- Clothing, textiles, footwear and leather,
- Automotive products,
- Plastics and pharmaceuticals,
- Metal fabrication,
- Agro-processing,
- Forestry, timber, paper, pulp and furniture,
- Business process service,
- Creative industries: Crafts, music and film,
- Green & energy-saving industries,
- Downstream mineral beneficiation,
- Upstream oil & gas services and equipment,
- Boat-building,
- Nuclear,
- Advanced materials,
- Aerospace and defense, and
- Electro-technical sector.

The Industrial Policy and Action Plan is designed to help build South Africa's industrial base in critical sectors of production and value-added manufacturing. The IPAP is therefore designed to reverse the decline in South Africa's industrial and manufacturing capacity and contribute to the reduction of chronic unemployment (dti.gov.za/industry).



3. Policies Underpinning Agriculture, Manufacturing and Integrated Waste Management

South Africa's green economy policy landscape is relatively well developed and considerable effort has gone into transitioning towards a low-carbon and climate resilient economy. Figure 3 provides an overview of the main policies, separating the strategic policies that can drive the green economy and the lower level policies and instruments that support and enable the transition towards a green economy. The policies and instruments are illustrated in the context of their relation to the green economy.

Provincial governments are seen to also be actively adopting green economy policies and strategies. Green economy policies have gained impetus over the last 10-15 years and key events in the history are summarized in Figure 4. The broad approach has been formulation of policies, supporting instruments and funding of green projects.

The 2008 National Framework on Sustainable Development (NFSD) emphasized a sustainable development path and spawned the first National Sustainable Development Action Plan (NSSD1) and the 2009–2014 Medium-Term Strategic Framework (MTSF). These advocated implementation of the NFSD.

On the energy front, the White Paper on Renewable Energy (2003) was developed by the Department of Energy in response to the World Summit on Sustainable Development which was held in 2002. The White paper set a target of 10 000 GWh renewable energy contribution to energy consumption by 2013. Thereafter the National Energy Efficiency Strategy, and National Energy Act of 2008 also followed.

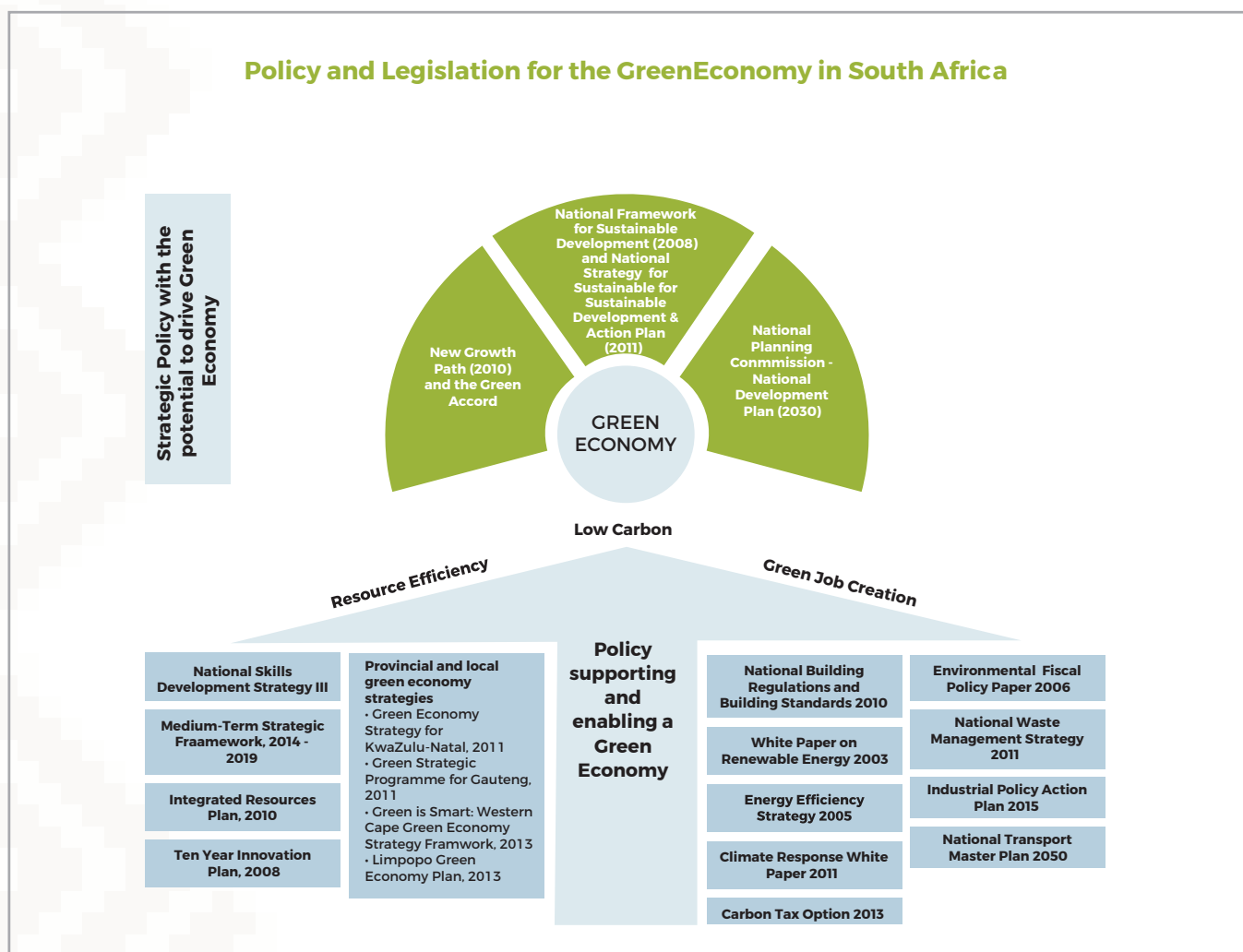


Figure 3: Overview of Green Economy policy and legislation in South Africa

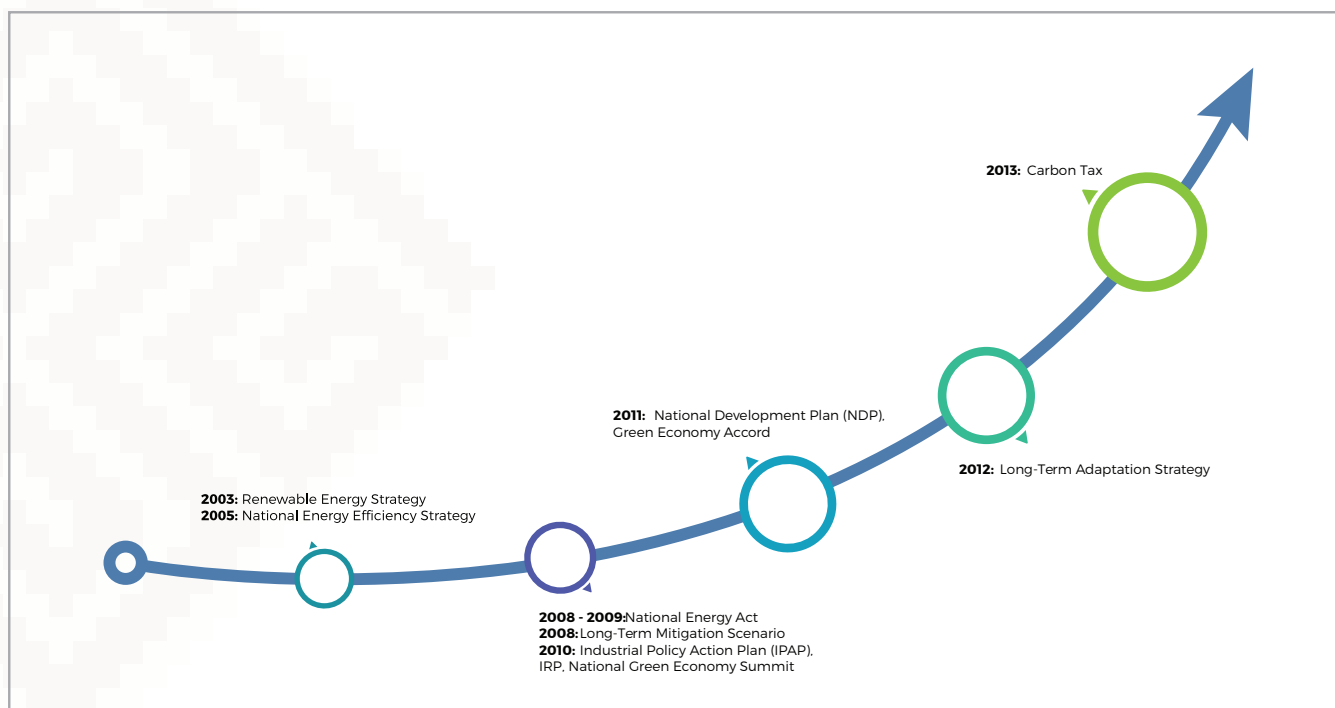


Figure 4: Key developments in SA's green economy path

The Long-Term Mitigation Strategy (LTMS) presented trends and scenarios regarding South Africa's GHG emissions and was developed to provide sound scientific analysis to be used for long-term climate policy development in the country. The 2011 National Strategy for Sustainable Development and Action Plan (NSSD3) was developed to create employment opportunities and industrial development, for an economic boost and environmental benefits. Financial resources were identified for green economy initiatives.

The National Development Plan (NDP) provides a road map to deliver public services efficiently up to 2030, with specific reference to water, electricity, sanitation, jobs, housing, public transport, adequate nutrition, education, social protection, quality healthcare, recreation and a clean environment. It also called for a carbon tax to be introduced by 2015. However, work on the carbon tax is still under discussion.

The New Growth Path (NGP) of 2010 emerged from the challenges in the aftermath global economic meltdown. It focused on growth and employment, targeting 5 million jobs by 2020. The Green Economy Accord was drawn up in partnership with business, unions and civic organizations. It saw funds allocated for infrastructure, the Green Fund and green economy projects.

South Africa faces a number of challenges as it navigates its way towards a low carbon and climate resilient economy. On the socio-economic front, power generation remains predominantly coal-based, with energy-intensive industries and consequent GHG emissions. Unemployment, inequality and poverty remain major challenges. Difficult trade-offs will

be needed to deal with these pressing issues while driving towards a green economy.

3.1 Agriculture

Market reforms implemented in 1996, notably the repeal of the Marketing of Agricultural Products Act of 1937 liberalized prices and trade in large parts of the agro-food sector, including foreign trade. This has resulted in significant private sector response across the agro-food chain. The deregulation of markets opened opportunities for entrepreneurial farmers and resulted in a more efficient allocation of resources in agriculture. (DAFF, 2013).

The net effect of these changes is that the South African agricultural industry has become less dependent on state support and internationally more competitive, joining the world's leading exporters of such agro-food products as wine, fresh fruits and sugar. These reforms have largely impacted on large scale commercial agriculture and hardly touched the small scale sector. (CSIR, 2014)

For agriculture to contribute effectively to economic growth, it needs to be linked in to other sectors of the economy, and be capable of transforming individual success stories into broader agricultural development. Supply chains around small-scale farmers help to increase farm production and deliver goods to consumers at competitive prices. Also important in this regard is rural infrastructure designed to stimulate the rural non-farm economy and rural towns.

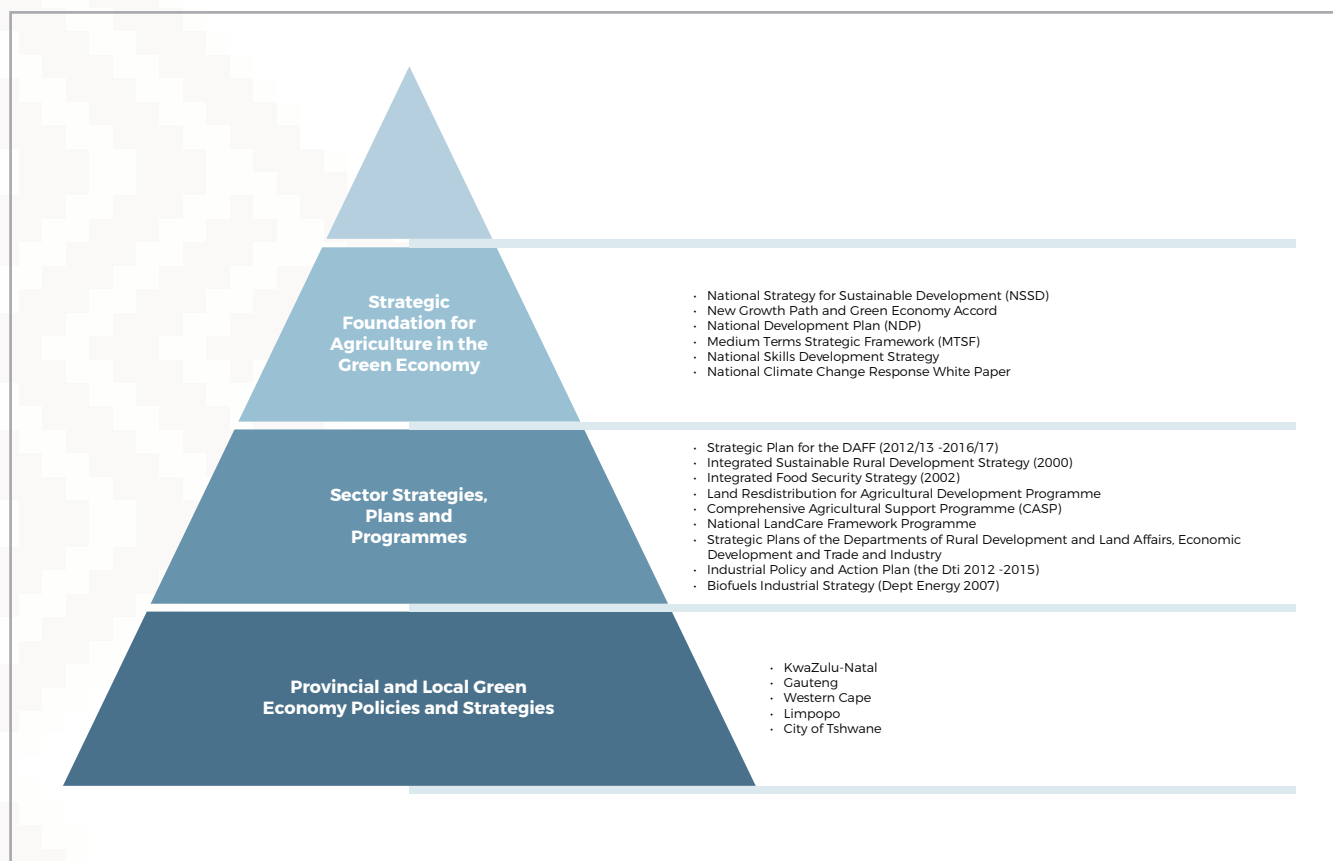


Figure 5: Foundations for Agriculture in the Green Economy at different levels of government - Source: (CSIR, 2014)

Appropriate innovations in science and technology are both a pre-condition for and a part of agricultural transformation. African farmers need technologies applicable to their diversified agro-ecological conditions in order to deal with challenges including erratic rainfall, need for intensification, and high post-harvest losses.

3.1.1 National strategies, Plans and Programmes

Currently, the enabling environment for the green economy in South Africa is being provided for at the level of plans, strategies, and programmes rather than in legislation. Several sources of broad strategic guidance could be deemed to be providing the foundation for agriculture in the green economy in South Africa. Figure 5 shows inter-governmental linkages supporting the greening of the agricultural sector in South Africa.

3.1.2 Agricultural legislation relevant to Green Economy

Agricultural initiatives linked to the green economy will invariably be guided by existing legislation. In particular, initiatives which are aligned with legislation pertaining to sustainable agriculture provide real opportunities for a green economy. Currently, key statutes in South African legislation governing agriculture, as it would relate to a green economy, include:

- Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983) and subsequent amendments, which will be repealed in their entirety if/ when the *Sustainable Use of Agricultural Resources Bill (2003)* is passed into law.
- *Genetically Modified Organisms Act*, 1997 (Act No. 15 of 1997).
- *Fertilizer, Farm Feeds, Agricultural Remedies and Stock Remedies Act*, 1947 (Act No. 36 of 1947), which controls the inputs to farming and agricultural enterprise.
- The Land Care programme within DAFF Land Use and Soil Management.
- The Draft Policy for the Sustainable Management of Veld and Forage Resources in South Africa within DAFF Animal Production.
- Other statutes not necessary only addressing agriculture, but for example, issues of resource efficiency (e.g. the *National Environmental Management Act - NEMA*)

The listed pieces of legislation may be referred to where clarity is required on key principles. However, issues pertaining to new and emerging areas of composting, organic agriculture, etc. are yet to receive policy guidance.

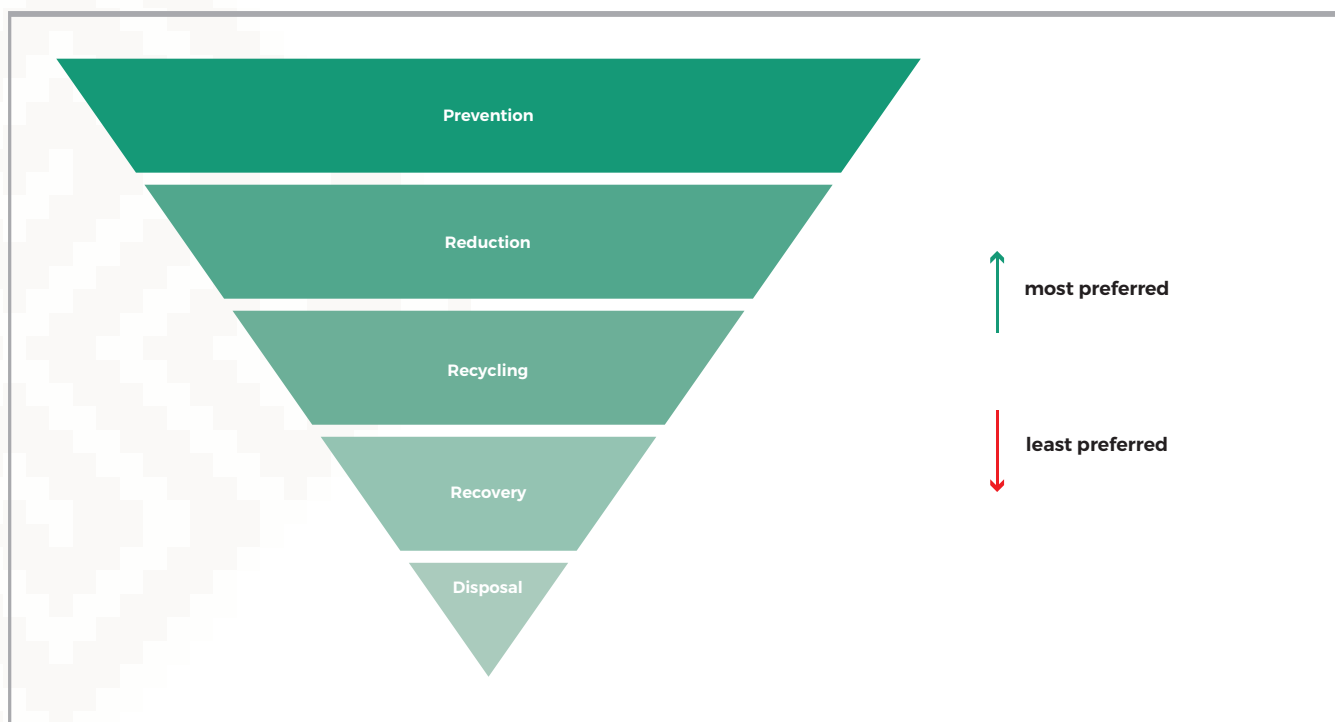


Figure 6: Waste Management Framework - Source: DEA

3.2 Manufacturing

3.2.1 South African Manufacturing Sector:

The manufacturing sector provided 13.3% of jobs and contributes 15% of GDP. Statistics SA's 2017 quarter 3 report on GDP shows an increase of 4.3% within the sector. Growth in the sector was led by activities in the petroleum and basic metals. (idc.co.za).

Government-supported interventions to stabilize manufacturing sector are under way in support of sustainable growth and job creation. This is exemplified by the Nine Point Plan. There is demand-side pressure on the sector, especially cost pressures arising from wages, inputs and administered prices. Other challenges include electricity shortages, currency volatility, skills constraints and a relatively low rate of productivity improvement.

The South African manufacturing sector, although relatively diversified, is dominated by a few large sub-sectors, specifically chemicals, metals and machinery, and food processing. Many manufacturing sub-sectors are domestic-market orientated, whilst others rely heavily on export markets.

At sub-sector level, the largest gains in real value-add between the 1994 to 2012 period among the manufacturing industries, were recorded for petroleum products, motor vehicles, parts and accessories, machinery, equipment, basic chemicals and electrical machinery.

3.2.2 Industrial legislation relevant to Green Economy:

Several relevant frameworks worthy of mention include:

- The Framework for Environmental Fiscal Reform (NT, 2006) provides principles and guidelines for fair and effective environmental taxes.
- The Innovation Plan (DST, 2008) encompasses "safe, clean, affordable and reliable energy supply" and climate change.
- The Medium-Term Strategic Framework 2009-2014 (NPC, 2009) states the need for sustainable livelihoods and sustainable resource management and relates these to various other policy areas including energy, water, housing, technology and competitiveness.
- The Industrial Policy Action Plan in its various iterations (the dti, 2010, 2011, 2012, 2015 and 2017) specifically targets growth in green industries, focusing on renewable energy, including solar, wind energy and biofuels.

Nonetheless, despite the legislative guidance to promote scale up in the various sectors. Many of the interventions do not reach scale up levels of investments. Therefore, it is imperative to provide an enabling regulatory environment and medium to long term policy certainty to ensure business confidence.

3.3 Integrated Waste Management

3.3.1 Background to South African Waste Management Sector:

The average amount of waste generated per person per day in South Africa is approximately 0.7 kg. This is closer to the amount produced in developed countries (0.73kg in the UK and 0.87 kg in Singapore) than to the average in developing countries such as 0.3kg in Nepal. The largest contributor to the solid waste stream is mining waste, accounting for almost 75%, followed by pulverized fuel ash, agricultural wastes, urban waste, and sewage sludge. These other wastes typically each range between three and seven percent.

3.3.2 The Waste Management Framework:

The Green Economy framework provides a context for integrated and sustainable waste management framework of South Africa as depicted in Figure 6. The model is best summarized as follows:

Avoidance and Reduction: Products and materials must be designed in a manner that minimizes their waste components or in a manner that reduces the natural material quantities used and potential toxicity of waste generated during the production, and after use;

Re-use: Materials can be used for similar or different purposes without changing form or properties. This approach seeks to re-use a product when it reaches the end of its life span. In this way, it becomes input for new products and materials;

Recycle: This involves separating materials from the waste stream and processing them as products or raw materials. The first elements of the waste management hierarchy are the foundation of the cradle-to-cradle waste management approach;

Recovery: Reclaiming particular components or materials or using the waste as a fuel and

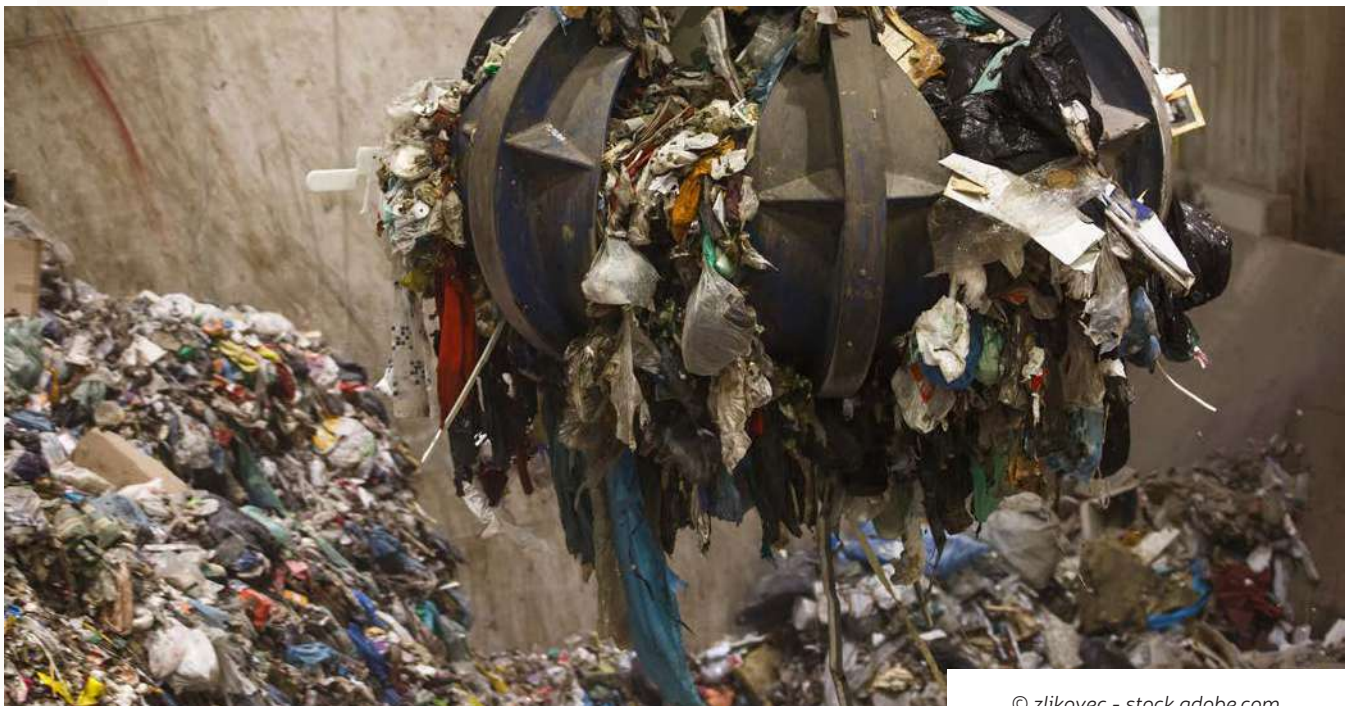
Treatment and disposal: This is the final and least desirable step in the hierarchy involving landfilling of wastes as well the chemical and or physical treatment of waste.

3.3.3 Waste-related Legislation Relevant to Green Economy:

Key instruments related to the green economy include the following:

- Framework for Environmental Fiscal Reform (NT, 2006) Provides principles and guidelines for fair and effective environmental taxes.
- White Paper on Integrated Pollution and Waste Management (IP and WM)
- National Environmental Management Waste Act, 2008.
- National Waste Management Strategy (NWMS), (DEA 2010) National Environmental Management: Waste Amendment Act, 2014.

The rationale for programmes in each of the three designated sectors is considered in section 4.



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4. Key Programmes For The Designated Sectors

There are numerous possible programmes that could be recommended. For example, the low- hanging fruit is likely to be what companies or farmers are already doing. It was encouraging to note that companies have taken steps and put in place measures to become 'greener'. Steps mentioned included:

- Using alternative energy to meet part of the office needs
- Improving energy efficiency in product development
- Energy efficiency retrofits for existing buildings
- Converting to paperless transactions and
- Sourcing inputs in more environmentally responsible ways

The approach, as follows, will be to outline the possible range of options available in each sector and highlight what could be done in each sector, with the use of specific case studies.

4.1 Agriculture

4.1.1 Green Economy Key Drivers in Agriculture

The United Nations Environment Programme (UNEP) states that strong comparative green produce advantages for many developing countries, due to several factors including the following:

- Suitable climatic conditions and rich biodiversity,
- Less contaminated soils,
- Fast growing market for organic produce: 2010: \$59 billion > 2015: \$105 billion,
- Most production is in developing countries (> 75%), most consumption in developed countries (> 95%),
- Development of regional organic trade (e.g. South America),
- Increasing demand for value-added organic products (e.g. juices, spices), and
- Improved trade balances: use of local, instead of costly imported, inputs and increased exports of sustainable agri-food products.



Figure 7: Proposed strategic interventions to enable South Africa's agriculture sector to support a Green Economy.

South Africa's agricultural sector has the potential to contribute towards a green economy if it adopts green practices and addresses environmental problems. While the contribution of the sector to a green economy requires more than simply 'green agriculture', key social aspects also need to be considered.

Figure 7 illustrates the six elements cited by the Council for Scientific and Industrial Research (CSIR) as strategic drivers of the Green Economy in Agriculture. The greening of agriculture can be achieved through the application of a variety of agricultural production techniques and practices. Conservation agriculture aims to sustain production through enhancing the resource base and environment.

Key aspects which must be addressed in ensuring optimal yields include:

- Water
- Energy
- Soil
- Urban Agriculture and
- Transport & logistics.

Water:

Water is a complex issue, particularly in a country as topographical location and subsequently a water stressed region diverse as South Africa. Addressing the longer-term water challenges for the country will require farmers to create blueprints for their water needs and impacts, and to develop a business case for action to be ready for the challenges. The presidency is developing the National Water Strategy.

Investors around the world are increasingly asking for information about companies' exposure to water risks. While the current state of disclosure in South Africa provides much information for investors, there are still some significant gaps that could obscure long-term risks and undermine actions to address these risks. (NBI, 2014).

Energy:

The national power utility, ESKOM is seeking a 19.9% hike in tariffs implying that consumers will pay up to 28% for electricity by July 2018. Farmers in particular, are greatly affected by electricity price hikes, because these erode profits and push up the prices of fresh produce commodities. Any tariff hikes add to already difficult economic circumstances across the economy. Farmers in South Africa are currently battling with the worst drought in a century, with water supplies critically low. The poor have not yet recovered from the impact of the recession, which South Africa emerged from by the second quarter of 2017. (www.fin24.co.za)

The National Electricity Regulator Authority of South Africa (NERSA) approved a consultation process for Eskom's 2018/19 revenue application to raise an amount of R219 billion. NERSA approved an average of 2.2% tariff increase for the 2017/18 financial year.

Soil fertility:

Climate-soil combinations leave only 12% of the country suitable for the production of rain-fed crops, with only 3% considered truly fertile land, South Africa falls short of other countries, such as India, where arable land covers 53% of the country. Most of South Africa's land surface (69%) is suitable for grazing, and livestock farming is by far the largest agricultural sector in the country.

Urban Agriculture:

Urban agriculture in South Africa faces a number of challenges which include: Integration in urban land use planning: There is a need to revise urban zoning by-laws to open up vacant urban spaces to green agricultural programmes. Inclusion of urban agriculture in urban food security, environmental and health policies. This could see establishment of low-cost facilities for sorting of organic wastes and the production of compost and animal feed, and integrated pest and disease management.

Transport and logistics:

Emerging farmer development includes supporting the farmers to get goods to markets. This requires development of all aspects of the supply chain. Good integration with the existing infrastructure is important, especially into the poverty nodes. The needs of smaller farmers include; packaging standards suited to mini-containers, simple handling equipment and modular storage facilities, consolidated loads and transport.

4.2 Manufacturing

From a global perspective, UNEP points out a number of comparative advantages associated with the green economy approach in manufacturing, including:

- Switching to more efficient manufacturing will save energy and resources and enable developing countries to produce goods for export at a lower price -increased competitiveness.
- Potential to generate new business from re-manufacturing, leading to technology and knowledge transfer, increased employment and exports.
- Eco-labels to market sustainably manufactured products, leading to growing demand in developed countries.

- New greener products, e.g., energy efficient products such as light bulbs opening up new market opportunities.

The discussion that follows explores the South African context, looking at the key drivers and points to possible initiatives to move the green economy forward.

4.2.1 Key drivers to switching the South African manufacturing sector green



Figure 8: Key drivers of green manufacturing economy.
Source: (UNEP, 2011)

Figure 8 provides an overview of factors driving the Green economy within the manufacturing sector. The spectrum of instruments available to government include regulatory and control mechanisms, economic, market-based, and fiscal instruments. Voluntary action by enterprises is possible. Information and capacity building are important to support the foregoing.

Cogeneration (COGEN) situation

South Africa has considerable potential for co-generation. This is the simultaneous generation of both electricity and heat. There has been relatively little co-generation being undertaken in South Africa. Major reasons for this situation include:

- Lack of incentives for industry to make the significant capital investment that is typically repaid over 10-15 years;
- No clear national long-term programme to procure cogeneration;
- NERSA does not grant a cogeneration license, unless it is part of IRP 2010, however, IRP 2010 doesn't explicitly recognize cogeneration;
- A special DoE Ministerial permission for a Generating Licence would be necessary;
- Wheeling remains difficult due to the absence of standard wheeling rules on ESKOM and municipal power grids, and high wheeling charges.

Closed Loop Production

To realize "closed-loop manufacturing" the product life cycle should be managed by selecting proper life cycle options. In selecting life cycle options, it is necessary to consider the environmental performance or "eco-efficiency" of the option defined as the ratio of provided value to environmental load.

The closer the "loop" is to the use, the lower the load on the environment. Industry is developing such technologies with the help of the National Cleaner Production Centre of South Africa (NCPC- SA). NCPC-SA is a dti programme which promotes the implementation of resource efficient and cleaner production (RECP) methodologies to assist industry to lower costs through reduced energy, water and materials usage, and waste management.

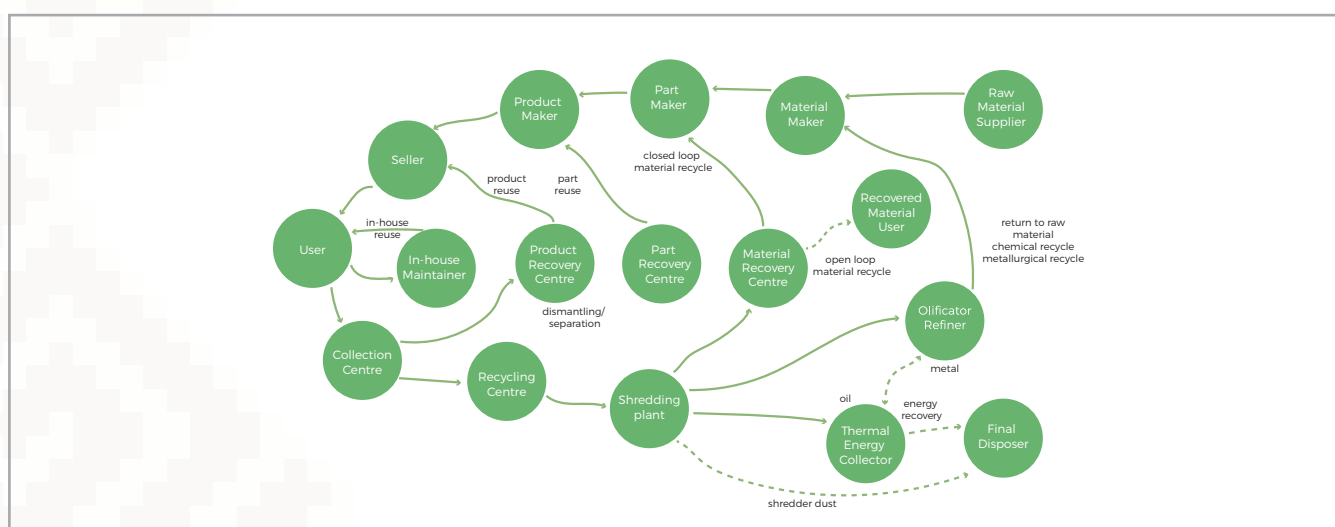


Figure 9: Sample Closed loop production system

Sector	Technology	Description	Value	Year	Reference
Manufacturing	Non-Technology specific	Manufacturing Competitive Enhancement Programme (MCEP) grant.	Maximum grant available to existing manufacturers is 7-10 percent of Manufacturing Value Added (MVA). Within this limit, a benefit of 30 to 40 percent of the expenditure may be Granted, capped at ZAR80 Million (6 Million USD).	2013	KPMG's "Taxes and Incentives for Renewable Energy 2013"
		Manufacturing Investment Programme (MIP) grant.	15% of qualifying costs of the project for existing manufacturers.	2013	KPMG's "Taxes and Incentives for Renewable Energy 2013"
		Section 12K of the Income Tax Act provides for a tax exemption on any amount accrued in respect of the disposal of any Certified Emission Reduction (CER) credit derived in the furtherance of a qualifying Clean Development Mechanism (CDM).		2020	KPMG's "Taxes and Incentives for Renewable Energy 2013"
Non-sector specific	Non-Technology specific	Section 128 provides for an accelerated capital allowance for machinery, plant implements, utensil or articles used for purposes such as the generation of Electricity from wind, sunlight, gravitational water forces or biomass.	50% of the cost and construction of the assets for the taxpayer in the first year, 30% in the second year, and 20% in the third year.	2013	KPMG's "Taxes and Incentives for Renewable Energy 2013"
		Public investment in solar water heating	4.7 billion ZAR (455 Million USD)	2013	Department of Energy. Republic of South Africa. "National SWH programme overview & RFRl process," 28 August 2013
Heating / Cooling	Solar heating / cooling				

Fiscal Tools:

Table 2 list several incentive programmes in South Africa, which are designed to encourage local manufacturers to migrate towards low carbon technologies.

4.3 Integrated Waste management

A research study was undertaken in the waste sector by UNEP with the view to changing global patterns around waste quantities, types and associated regulations.

Key findings included as follows:

- The increasing volume and complexity of waste associated with economic growth are posing serious risks to ecosystems and human health.
- The growth of the waste market, increasing resource scarcity and the availability of new technologies are offering opportunities for greening the waste sector.
- Investing in greening the waste sector can generate multiple economic and environmental benefits.
- Recycling creates more jobs than it replaces.
- Improving labour conditions in the waste sector is imperative.
- Greening of the waste sector requires financing, economic incentives, policy and regulatory measures and institutional arrangements.

As such, factors driving developments in the waste management in South Africa are considered next.

4.3.1 Factors driving the growth in the Integrated Waste management



Figure 10: Drivers of Green Economy with Integrated Waste Management

Increased demand for waste service provision

As a result of increased population growth, urban and industrial development, there is an increased demand for waste service provision. This includes storage, collection, handling, transportation, treatment and disposal facilities and services.

Increased Demand for Waste Minimization, Recycling and Recovery

In line with international norms, the national, provincial and local authorities, as well as communities and industry are encouraged by regulation to implement measures to reduce waste generation and disposal rates. This may be achieved by adopting cleaner technologies, separation and reclamation/recycling of wastes amongst other strategies.

Land use, physical and environmental limitations

Limitations on the location and operation of waste management facilities include proximity to human settlements, topography, geology and hydrology. Facilities should pose minimum environmental risk but be economical for waste transportation. Regional facilities serving larger populations and industry groups are encouraged.

Socio-economic and demographic factors

Socio-economic and demographic factors such as urbanization, unemployment and population growth impact on future waste trends and service provision. South Africa's growing population is characterized by both urbanization and the rapid development of the middle class. Increased affluence raises the amount of waste generated and leads to more complex waste flows.

Section 5 considers the options raised in this section and makes a case for each of the three interventions in the sectors.



5. Gaps and Opportunities

This section highlights areas of high potential impact where there seems to be scope for the development of projects and programmes. These areas must align with the selected focal sectors for Switch Africa Green in South Africa.

In each focal area, the key criteria for identifying opportunities are:

- Evidence of a significant gap or gaps.
- Potential to impact a large beneficiary group within the SMME sector.
- Potential to advance the green economy.
- Existence of case studies that illustrate the potential benefits and how to realise them.

Each of the three focal sectors is introduced with a background that summarises the context and highlights the gaps. A practical example of a relevant, recent or ongoing case study is outlined to illustrate a possible way forward and the potential benefits.

5.1 Improving the performance of small-scale farmers.

Sustainable agricultural production entails improvement in the efficiency of the use of water and energy. The production of crops on-farm and any subsequent processing, depends on energy and water use.

Increasing prices for energy and water have an impact on the prices of farm produce, and increased energy use contributes to negative environmental impacts. Key challenges facing sustainable agriculture among small scale farmers are summarized in Figure 12. A focus on small-scale farm improvement for more sustainable is appropriate for the objectives of the SAG programme.

Small scale rural farmers face a myriad of challenges, e.g. droughts and other natural disasters, lack of appropriate infrastructure (e.g. roads), power supply and piped



Figure 11: Challenges in Agriculture (CSIR, 2013)

water, lack of skills, poor access to markets, lack of input commodities such as fertilizers and pesticides, high post-harvest losses and low yields and lack of adequate value chain. When considering the UNEP analyses presented in the preceding section, these farmers potentially have many opportunities on the local and world markets.

The EU and the Africa Union are collaborating on projects across Africa to improve the performance of small-scale farmers. One of the project areas is Giyani in Limpopo Province. Such rural farmer improvement initiatives potentially tackle multiple development problems stemming from poverty.

The overwhelming majority of South African households have very limited access to agricultural land.

Figure 12 illustrates that approximately two-thirds of South African households have access to less than 0.5ha of agricultural land. This rises to 82% for households with access

to up to 1ha¹⁴. Agriculture is the primary economic activity in rural areas. The National Planning Commission (NDP) estimates that this sector has the potential to create 1 million new jobs by 2030. Some key interventions identified to realize this includes the following considerations:

- Expansion of irrigation,
- Ensuring access to value chains,
- Support for upstream and downstream industries and
- Secure and consistent energy supply.

The employment creation potential, focusing on small scale farmers having between 0.5ha and 5ha of land was estimated at 165 000 primary, and, 82 000 secondary jobs, created by 2030. When coupled with irrigation investment and business development support for such farmers, the total primary and secondary jobs potential as a collective is 547 000, which is over half the million jobs estimated by 2030.

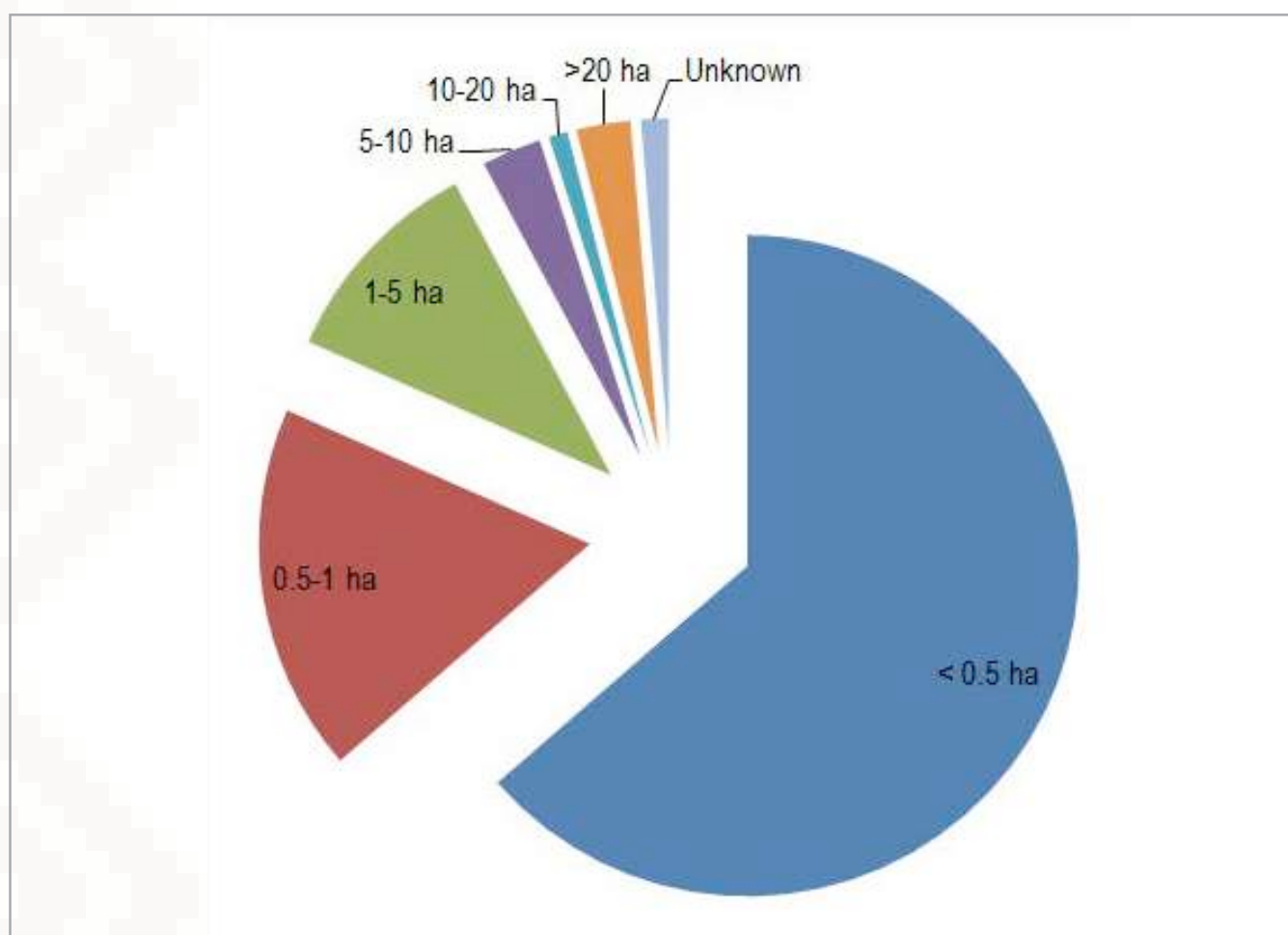


Figure 12: Fraction of households' access to land

Case Study: EU/Africa Union cooperation: EAU4FOOD Giyani case study

The EAU4FOOD project engaged the farmers in Giyani over several sessions on site in a bottom-up process to identify the key challenges. Key issues requiring attention to improve the productivity of irrigated farming in the area are inclusive of:

- Integrated crop, soil and water management,
- Whole farm management,
- Water access and efficiency, and
- Access to markets, both to access inputs and sell produce.

It is interesting to note that some of the strategic interventions proposed in Figure 7 were raised by the Giyani farmers. Therefore, business management support to SMMEs is integral if they are to run successful enterprises.

Three sites are mentioned, being farms of 45ha, 30ha, and the third comprising eight experimental plots with trials. The innovative interventions implemented were inclusive of:

- Implementation of a package of innovations to support emerging irrigation farmers,
- Demonstration of real-world on-farm experiments,
- Use of resources available in situ on farms, such as grasses for mulch,
- Compost and biochar for fertilization and,
- Active participation of the community through a trans-disciplinary approach.

Following implementation of the innovations, yield of grade A tomatoes improved from a range of 10-20 tonnes per ha, to 60-80 tonnes per ha. This is well above the average of 45-50 tonnes per ha for tomatoes. Profit was estimated at R42 486 per 0.16 hectare on demonstration plots (corresponding to R266 000 per ha). The number of jobs supported was 14 primary beneficiaries with eight people employed and an estimated 10 permanent and seasonal secondary jobs per farm. Capacity building was provided to 41 farmers, 14 extension officers and eight other stakeholders.

The farm produce was sold through the Mopani and Giyani SPAR stores. Community exposure included 10 learners from a local primary school and three groups of farmers. Community awareness included a presentation on Giyani Community Radio Station, with an estimated audience of 90 000 listeners, as well as five educational circuits with 237 participants. The project won an award from the Limpopo Provincial Department of Agriculture.

The Giyani farmer case study is seen as a good model as it addressed the following critical aspects of small holder farmers:

- Introduced innovations,
- Used a bottom up in its approach,
- Achieved remarkable improvements in yield,
- Built capacity and disseminated the success story not only via scientific channels, but also via community media and
- Was acknowledged locally for its achievements.

Focal activities:

The focal areas/activities for agriculture are focussed around small scale farmers in the following areas:

- Organic agriculture, including agro-processing,
- Cleaner production and resource efficiency,
- Eco-labelling and certification to create export opportunities,
- Sustainable procurement;
- Information and awareness raising for consumers, and,
- Water efficiency.

The main supporting stakeholders involved, in addition to the private sector, are:

- Department of Environmental Affairs for strategic guidance on project alignment and sustainability, and overall coordination.
- Department of Water Affairs for guidance on efficient water use, protection of and access to water, where necessary.

- Department of Public Works for advice on infrastructure support, where necessary.
- Department of Economic Development for support with business development,
- Department of Agriculture, Forestry and Fisheries for agricultural extension support services.
- Research institutions for research support and specialist support such as that provided to the farmers in Glyani.
- NCPC-SA for resource efficiency and cleaner production support in processing activities.

Therefore, Switch Africa Green SA has much to gain from closer scrutiny of the approach taken in this case study.

5.2 Industrial Symbiosis

The pressure on landfills and the economic downturn strongly favour industrial symbiosis as a money saving, job creating and environmentally responsible approach. Symbiosis is mutually beneficial co-existence. The concept has been widely applied in industry for the mutual benefit of the parties involved. This concept of industrial symbiosis is illustrated in Figure 14.

In an industrial symbiosis system, waste from one industrial process or facility serves as the raw materials for another,

helping to preserve the environment and lower manufacturing costs at the same time. A benefit to the country is the diversion of waste from landfills. The cost savings increase up the waste hierarchy as shown in Figure 14.

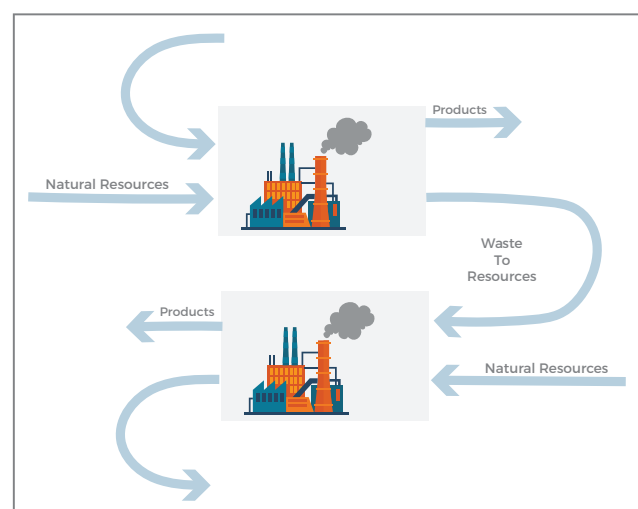


Figure 13: Concept of industrial symbiosis

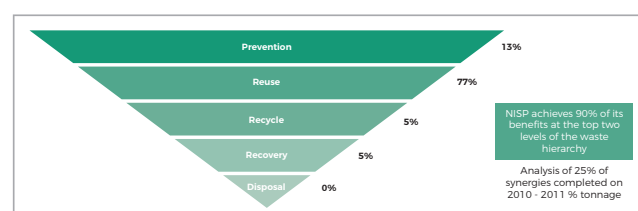


Figure 14: Industrial symbiosis and the waste hierarchy

Case study: Western Cape and NCPC-SA Industrial Symbiosis Programmes

In South Africa the Western Cape Provincial Government coordinates an industrial symbiosis programme through GreenCape. The NCPC-SA, with provincial government partners Gauteng, Ekurhuleni and KZN, facilitates industrial symbiosis workshops for interested companies to exchange information with a view to developing a symbiotic relationship.

GreenCape hosted a two one-day industrial symbiosis synergy workshops in 2013. The first workshop attracted 41 participating companies including manufacturers, retailers, food processors, and waste recyclers. 316 resources were discussed and 590 potential matches captured. At the second workshop, 218 resources were discussed and 615 potential matches captured. In their feedback, the participating companies perceived the following major benefits of the scheme (with ratings out of 5):

- Boost sales
- Reduces costs
- Stimulate
- Promote
- Reduce CO2 emissions 4.1/5

The names of the participating companies are listed in APPENDIX I -

It was noted from hosting the two Gauteng matchmaking workshops, which approximately 50 companies identified 244 potential synergies in the first workshop, and approximately 40 companies identified 590 potential synergies in the second workshop. Four of the participating Gauteng companies registered a potential 6 400 tonnes of waste diversion captured, with R94.8 million private savings, R37.8 million cost savings and 1 440MW h energy savings.

The inaugural workshop in KZN identified 166 potential resources for exchange, creating 319 potential synergy matches in a single event.

Industrial Symbiosis Programmes are seen as good models due to the following:

- The close match between the industrial symbiosis programmes and the waste hierarchy provides an attractive synergy between two of the three focal areas of the Switch Africa Green SA project.
- Participating companies view the programmes as contributing to their sales and cost reduction as well as reducing emissions.
- The programmes attract a diverse cross section of companies and can potentially link large and small companies.
- They provide national benefits by diverting wastes from landfills and saving raw materials.

Focal activities:

The proposed focal areas/activities for manufacturing are primarily around industrial symbiosis and other programmes, namely:

- Water efficiency programmes,
- Solar and wind energy manufacturing strategies, regulations on blending of biofuels, and an industrial energy efficiency programme.

Activities within the SWITCH Africa programme should help South Africa access international markets for environmental goods and services. The main stakeholders to be involved, in addition to the private sector are:

- Department of Trade and Industry for support with incentive schemes, local content, and advice.
- Department of Science and Technology for funding support of emerging areas and specialist knowledge support.
- Department of Energy for support with renewable energy initiatives and related licensing support and advice.

The other departments whose roles have already been specified are:

- Department of Environmental Affairs
- Department of Public Works
- Department of Economic Development
- Research institutions and
- NCPC-SA.

CHALLENGES WITH WASTE MANAGEMENT

In South Africa the biggest waste collection backlogs exist in rural areas and informal settlements. Obstacles to providing a sustainable waste collection service include:

- Limited road access and infrastructure: In certain areas, road infrastructure is limited and the collection vehicles cannot reach all the households. Where road infrastructure exists, the streets are often inaccessible to conventional waste collection vehicles due to steep slopes and narrow roads with sharp curves, deep potholes and dongas.
- Extensive travel distances: Transportation costs in rural settings where households are sparsely spread over long distances impede a weekly waste collection service, thereby contributing to rampant illegal dumping.

CHALLENGES WITH WASTE STORAGE

- Most municipalities do not provide waste receptacles to all waste generators, especially the indigent households who cannot afford to buy such receptacles for themselves. This lack of receptacles may result in littering and illegal dumping as people seek to clear their households of the accumulated waste.
- Transporting waste to drop-off sites has a cost implication for the waste generator. Charging excessive fees at the drop-off sites might discourage the use of these facilities.
- Communities are more likely to dispose their waste illegally and not be concerned to separate their waste for recycling if they lack the appropriate facilities or if such facilities are not easily accessible to them. In addition, establishing such facilities can be an expensive and king process for municipalities since they require appropriate infrastructure and relevant permits/ licences.

CHALLENGES WITH RECYCLING

- Participation in source separation of recyclables without any significant financial benefit can be challenging as it is considered as time consuming.
- Separation at source and the need to collect the recyclables separately has only recently become a requirement with the promulgation of the Waste Act. Incorporating separate collection of recyclables into existing collection systems may be challenging.
- Separation at source is a relatively new concept in South Africa and hence not practiced in many municipalities. The bulk of the re-usable and recyclable waste is thus disposed to landfill and largely lost to the recycling industry. In addition, this contributes to the diminishing capacity of available landfill airspace.
- Potential users of waste material and potential suppliers are not aware of each other.

CHALLENGES WITH LANDFILL MANAGEMENT

- Compliance to permit conditions is critical in mitigating the impacts of landfill sites. Many municipal landfill sites are not permitted and permitted sites do not always operate according to their permit conditions. Poorly operated landfill sites impact on the environment and can cause nuisances to communities living close-by.
- Pickers living off landfill sites are a reality for most municipalities. This is undesirable based on health and safety risks workers (including pickers) should be provided with Personal Protective Equipment (PPE). The use of heavy machinery in landfill operations also poses safety risks to pickers. The liability of any incidents occurring on these facilities lies with the owners of such facilities which in most cases are the municipalities.
- Most landfill sites are nearing their end of life. Competition for land is high with housing taking up most of the available land. Finding suitable land for landfill sites is increasingly difficult. Therefore, ways or extending the life spans of existing landfill sites is important.

Figure 15: Challenges associated with waste management

5.3 Buy back centres

There are a number of challenges associated with the various aspects of waste management. The settlement patterns in rural areas differ from the denser urban areas.

The sparse rural settlements make it difficult to deliver services as poor infrastructure and greater distances make access more difficult. Recycling of the various waste streams, has been gaining momentum in recent years. However, widespread practice of separation at source and subsequent recycling is limited. Separation at source requires buy-in at the source of the waste generation, and infrastructure that can handle the separated waste streams correctly. This may include convenient receptacles for the various waste streams. An overview of the challenges around waste management are summarised in figure 16. An attractive option that easily accommodates the informal sector are buyback/recycling centres.

Buy back centres (BBCs) facilitate an important link between informal sector activities and recycling companies and therefore promote both informal and formal job opportunities. Figure 16 illustrates the position BBCs occupy in the recycling value chain. The University of the Western Cape conducted a study and found that job opportunities are created at the BBC sites.

In addition, there are also job opportunities within the formal job markets, including the upper end of the recycling chain. Subsequently, informal income generating opportunities are created for informal waste collectors. It also found that changes in the formal or informal recycling sectors will have a direct influence on the operations and existence of the

BBCs, for example, with the adoption of a circular economy agenda, through initiatives such as industrial symbiosis or closed loop systems for management of abattoir and agricultural organic waste.

The study concluded that BBCs play an important role in creating formal jobs and informal income generating opportunities for the poor and unskilled labour. It recommended further research to better understand the industry and its role players.

The Switch Africa Green Programme SA can draw lessons on how to introduce sustainable consumption and production patterns among the urban poor, who comprise a large and growing segment of the population.

Proposed focus of activities

The proposed focal areas/activities for Integrated Waste Management are buy-back centres, industrial waste management, recycling, re-use and recovery. The key stakeholders to be involved (although list is not exhaustive) are:

- Municipalities for licensing, advice and hosting pilot trials,
- Co-operatives for implementation and piloting novel approaches,
- NGOs for information, funding and capacity building,
- Department of Environmental Affairs,
- Department of Science and Technology,
- Department of Economic Development,
- NCPC-SA, and
- Research institutions.

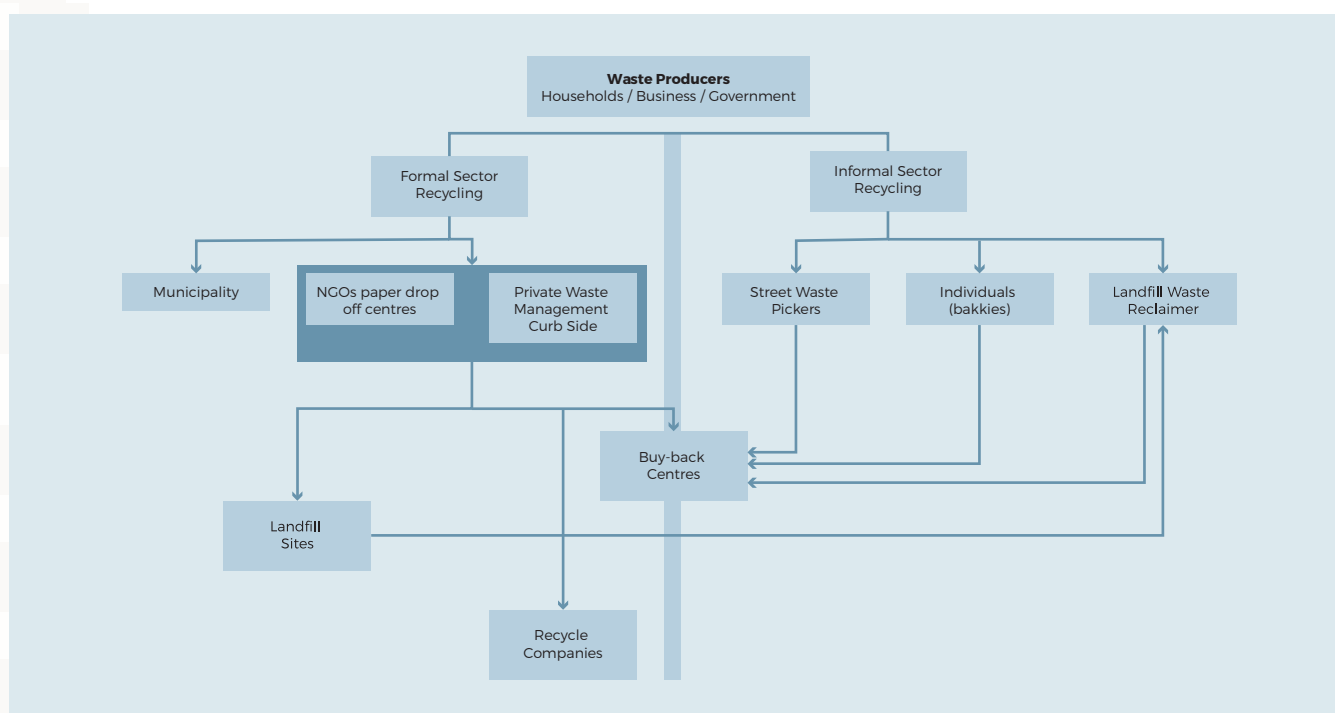


Figure 16: General overview of the recycling industry

Case study: The Zondi Buy-back Centre in Soweto

Zondi Buy Back Centre was established with the assistance of the City of Johannesburg and the Danish Government in 2005. It currently maintains a database of 500 registered reclaimers and is visited by approximately 150 reclaimers daily. It has a total of 30 staff members.

Zondi BBC is a community-based multi-recycling centre that buys recyclable waste such as paper, plastic, cans and glass from people and then sells it on to recycling companies such as Collect-a-Can. This is a direct cash payment; people clean the waste and get paid according to the volume that they bring in.

This centre received the 2010 UNEP SEED (Social and Environmental Entrepreneurial Development) award. The award recognised aspiring entrepreneurs whose businesses can help meet sustainable development challenges in the social and environmental arenas.

Under the Zondi BBC Eco Warrior project, 30 youth were trained to work with Soweto communities and provide them with information on local recycling initiatives and how to participate in recycling. The work done by Zondi BBC includes:

- Recruitment of environmental ambassadors and training. Weekly collection of recyclables from adopted households.
- (This is a pilot project targeting households and organized structures within SOWETO particularly Zondi at this stage, with future plans of rolling it out to other areas).
- All relevant stakeholder identification, MOU's and training.
- Door to door campaigning.
- Weekly monitoring and evaluation meetings
- Adoption of households and distribution of green bags for collection of recyclable material.

The case study of Zondi is attractive as:

- It works in a poor community where recycling tends to be low.
- It is exploring innovative ways to engage the community through information and adoption of willing households.
- It is providing steady income for poor community members.
- It is inculcating a spirit of sustainable living in its community and plans to venture further afield.

5.4 Cross-cutting themes

There are a number of themes that cut across the focal sectors. Important from the green economy perspective are:

- v. Energy efficiency
- vi. Labeling and standards
- vii. Water efficiency
- viii. Eco-innovation
- ix. Sustainable trade

(i) Energy efficiency

Energy efficiency will benefit SMMEs through cost reduction and material recovery. Initiatives will include

the implementation of the RECP programme in the manufacturing sector to enhance energy efficiency in industries. This energy efficiency thrust contributes to one of the deliverables under the 2020 targets of the African-EU Energy Partnership.

(ii) Labelling and standards

Eco-labels provide an indication of how well a product or service is environmentally adapted. Innovation capacity on eco-labelling requires more support. Labelling and standards have been identified as cross-cutting areas to develop local product schemes and also in view of acceding to the AEM and thus to secure recognition of sustainable African products in overseas markets including the EU.

Table 3: Summary of sectors and main stakeholders

Focus areas in each sector	Agriculture	Manufacturing	Integrated Waste Management
	Organic agriculture	Industrial symbiosis	Buy back centres
	RECP	Vehicular efficiency	Re-use
	Eco-labelling/ Certification	Solar & Wind manufacturing strategies	Recycling
	Sustainable procurement	Regulations-biofuel blending	Industrial waste management
	Information/Awareness	IEE programme	
	Water efficiency	Water efficiency	
Stakeholders			
Pvt Sector	•	•	•
DEA	•	•	•
EDD	•	•	•
DPW			
DST		•	•
DAFF	•		
DoE		•	
The dti		•	
Research Institutions	•	•	•
NCPC-SA	•	•	•
Energy Producers			
Small scale farmers			
Municipalities	•	•	•
Retailers	•		
Waste Recyclers		•	•
NGOs	•		•
Crosscutting	Energy Efficiency		
	Labelling and standards		
	Water efficiency		
	Eco innovation		
	Sustainable trade		

The EU has been supporting a number of eco-labelling programmes in Africa and experience gained with such schemes (for example the leather industry in Kenya) could prove valuable.

(iii) Water efficiency

Demand for freshwater has increased significantly and there are currently warnings around the risk of worsening water scarcity in South Africa. The reasons for the increase in demand are; economic growth and development, improved standards of living, growing populations, maintenance backlogs, and increasing consumption by those populations and expanding industries of the priority sectors (tourism, manufacturing and agriculture). Frequent droughts leading to water scarcity, decreasing rainfall and rising temperature further emphasize the need to promote water saving initiatives Cape Town would be a very good example).

(iv) Eco-innovation

There is a local deficiency of state of the art resource efficient technologies, leading to dependence on foreign

expertise and equipment. Eco-innovation is one of the areas to implement RECP in order to promote an environmentally sustainable industrial growth. Effective linkages will be developed with the current EU-funded project on eco-innovation.

(v) Sustainable trade

In the selected three sectors, green economy measures create opportunities for penetrating new markets and enhancing trade in environmental goods and services. Further, the cross- sectoral discipline of identifying and harnessing sustainable trade opportunities feeds into the promotion of environmentally sound production processes, improved resource efficiency, creating incentives for increased investments in green technologies, and subsequently contributing to green job creation. In this way, sustainable trade bolsters the transition to a green economy, while being enhanced by it.

Table 3 indicates the main stakeholders associated with each sector.



6. Recommendations

The recommendations cover the three priority areas and illustrate alignment of the recommended initiatives with the Nine-Point Plan described in 2.1. The need to better align policies and regulations with provision of support to the SMME sector, and to reduce contradictions, is highlighted. The need to ensure that the means of interacting and communicating are equally accessible to the informal sector is also highlighted.

6.1 Focal areas

It is recommended that the Switch Africa Green South Africa programme focus on proposals that support:

- Innovative improvement to small scale agriculture,
- Innovative industrial symbiosis business ideas, and
- Buy back centres for waste recycling.

Agriculture - Climate Smart Agriculture strengthened
Manufacturing - Green Business Development and
Waste Management - introduction of the Concept of Circular Economy in South Africa.

These have the potential of addressing the needs of the SMME sector, as well as having significant green economy benefits in the three focal areas. All the focal areas are strongly impacted on by having access to the grid since most machinery that they may use would require energy source. Access, reliability and quality of grid power varies

Table 4: Recommended initiatives in each priority area

	THREE PRIORITY AREAS		
	Agriculture / Agro processing	Manufacturing	Waste Management
Cross cutting themes	Creation of incubation for capacity building in business management skills and efficient technology skills transfer		
	Assistance with access to local and export markets (exposure, linkages, eco-labelling, illustrative examples)		
Specific themes	Climate Smart Agriculture Strengthened	Water Efficiency in manufacturing enhanced	Concept of Circular Economy Introduced in South Africa
Specific initiatives	Logistics tailored to farmers	Awareness of Industrial Symbiosis IS opportunities	Interface with pickers+
	Technical support (extension)	Linkages in industry	Separation at source (awareness in communities)
	Facilitate mutual learning	Technology exposure	Recycling options
	Quality inputs	Exploration of new products	New technologies (recycling, bio-digestion)
	Participation in full value chain (increase value add)	Networking to source inputs and markets	Waste to Energy (biogas)
	Incubation	Efficient Manufacturing technologies	Regulatory impediments
		Create market for Industrial Symbiosis resource procurement, Green procurement of waste-resource product	Waste Classification programme for identification of more opportunities for SMMEs with waste and create jobs
Nine Point Plan alignment	Revitalising agriculture and the agro-processing value chain	Encouraging private sector investment through new partnerships and assistance with market access	Resolving the energy challenge through waste to energy decentralised generation.
	Unlocking the potential of small, medium and micro enterprises, cooperatives and township enterprises		

across the country depending on whether the provider is municipal or ESKOM. Smaller municipalities often lag behind with their payment for power and face prospects of being disconnected from time to time. It must be noted that such disconnections will disrupt businesses in such municipal areas, and impact on local economic development, job creation and income generation.

Alignment with the Nine-Point Plan

Illustrative case studies have been outlined for each of the three focal areas. Specific recommended initiatives are presented in Table 3. These initiatives are aligned with Points

1, 4, 6 and 7 of the Nine-Point Plan. These four Points are summarized below along with indications of how the recommended initiatives align:

- **Revitalizing agriculture** and the agro-processing value chain. The interventions at small-scale farmer level could boost productivity as illustrated by the case study in Section 5.1.
- **Encouraging private sector** investment through new partnerships and assistance with access to markets and sources of raw materials in the industrial symbiosis networking.
- Resolving the energy challenge through **decentralized waste to energy generation** for on-site utilization. This reduces demand on the grid. Excess power can be exported to the grid.
- Unlocking the **potential of small, medium and micro enterprises**, cooperatives and township enterprises. This is a cross-cutting issue as all the initiatives are aimed at supporting the SMME sector to grow and follow sustainable consumption and production principles

6.2 Policies and regulations

Conflicts often exists between regulatory provisions and intentions to grow small enterprises, particularly within the informal sector. This leads to difficulties in meeting procurement regulations when a municipality intends to contract informal sector service providers and as a result hinders attempts for job creation. Similarly, the promotion of green energy in the form of rooftop solar photovoltaic systems, faces resistance from municipalities for whom the sale of electricity is a major revenue source. Some municipalities have been more flexible in enacting trial regulations that allow purchase of power from small generators within their jurisdiction. These include the City of Cape Town and Nelson Mandela Metropolitan Municipality. The experience of these pioneers will be worth following.

Policies and regulations often prove non-accommodating to the realities and needs of small scale operators and the informal sector. An example from the waste management sector is access to waste by informal waste pickers, including waste cooperatives. Often, legal ownership of refuse passes from the household to the waste company once the refuse is placed outside the gate for collection. In such an arrangement, there is no legal way for the waste picker to access this waste. If the informal sector is to participate openly and engage with other stakeholders, the by-laws that effectively criminalise their work have to be amended. The process to address this need is to include the informal waste pickers and obtain their perspectives and buy-in.

6.3 Stakeholder engagement

The processes used for public consultations tend to be beyond the reach of SMMEs and the informal sector due to limitations in literacy levels and access to information. These processes need to be more flexible to accommodate remote based SMMEs and the informal sector. Such flexibility may entail novel interaction mechanisms beyond the typical publication of notices in newspapers and consultation meetings (typically hosted in English), that tend to be dominated by technocrats and can prove intimidating for a semi-literate co-operative member. Media such as local radio stations, local language newspapers and simple brochures in local languages may overcome such barriers.

Similarly, programmes designed to build capacity among SMMEs can be conceived and executed in a top-down manner and fail to meet the needs of these SMMEs since those needs would not have been identified in liaison with the SMMEs. The Giyani EAU4FOOD small scale agriculture project illustrates the need for extensive consultation with the beneficiary communities to establish their priorities at the outset.

A recent nationwide study of waste-sector cooperatives which was undertaken by the CSIR, suggests that many cooperatives engaged in the collection and sorting of waste, recognize the need to move up the value chain as a way to upgrade their businesses. Capacity building and business support for such evolution among waste sector cooperatives are some of the ways to enhance their roles.

7. National Implementation Plan

The findings of the inception phase, including the assessment of the business environment at country level and capacity building needs of key stakeholders will contribute to the development of indicators for the overall project monitoring and evaluation framework.

7.1 Project results and components

The expected results of the project are:

7.1.1 Policy support:

Policy stakeholders are better informed and equipped with policy-relevant scientific information, strengthened institutions and appropriate tools and instruments such as policies, regulatory frameworks, incentive structures, tax and market-based instruments. These allow private sector led inclusive green growth through eco-entrepreneurship, eco-innovation and sustainable production and consumption actions in targeted sector(s). The policy support component will complement existing national planning and strategic frameworks for transformation towards green economies.

7.1.2 Green business development:

Economic stakeholders are better equipped to identify and/or put in practice opportunities for green business development and markets (domestic and export) for sustainably produced goods and services. The transformation towards an inclusive green economy is fostered through services provided to SMMEs and eco-entrepreneurs that enable them to start and develop green business or apply sustainable production practices.

7.1.3 Networking facility:

Knowledge, lessons learned and good practices from the projects have been distilled and disseminated nationally and through appropriate regional and Africa-wide networks. Best practices shared and networking initiated between African practitioners and those in other regions. Increased understanding of the benefits of green business opportunities and SCP practices among key stakeholders in the private sector, governments and consumers has been realized. Activities across the components will focus on the pilot countries and the selected target sectors, to ensure horizontal synergies and to avoid diluting the impact of the programme.

The policy support and the green business development components will mutually reinforce each other. They will focus on the same target sector(s) to ensure that the policy component draws on the feedback from the

implementation of business development component, and the green business development projects benefits from improved enabling conditions created by the policy support component. Policies and regulations that are not harmonized, or those seen to be less sensitive to small enterprises and the informal sector are good candidates for initial engagement with policymakers and the affected sectors. The exploration of improvements to the policies and regulations needs to be inclusive and formatted in a manner that ensures effective participation of the informal sector. Important considerations include the format of information and the media used to disseminate it.

7.2 Institutional framework

A National Coordinator has been appointed. The Coordinator provides oversight on the implementation of projects under guidance of and with support from the SWITCH Africa Green Team in UNEP and UNDP.

The **National Technical Coordination Committees (NTCC)** has also been established, and is responsible for guiding implementation at the national level. The members of the National Technical Coordination Committees (NTCC) will have the following core members:

- Department of Environmental Affairs (DEA)
- EU country office, and other invited stakeholders such as the Departments of Trade and Industry, of Economic Development, UN Agencies (UNDP & UNEP) and the programme grantees.

The DEA provides overall strategic leadership on coordination of the programme in the country. The Role of the National Technical Coordinating Committee:

- The NTCC may invite representatives of grants projects when relevant.
- The NTCC will serve to guide the implementation of the project at the national level and in particular components A and B, and will serve as the primary body assessing needs and defining priorities at the national level.
- The NTCC will provide recommendations and information to the JSC.
- NTCC will oversee that the project goals are being met at the national level and serve as a forum for the coordination between of national implementers of components A and B.

The role of the NTCC is inclusive of performing the following activities. The organogram of the project administration is illustrated in Figure 17.

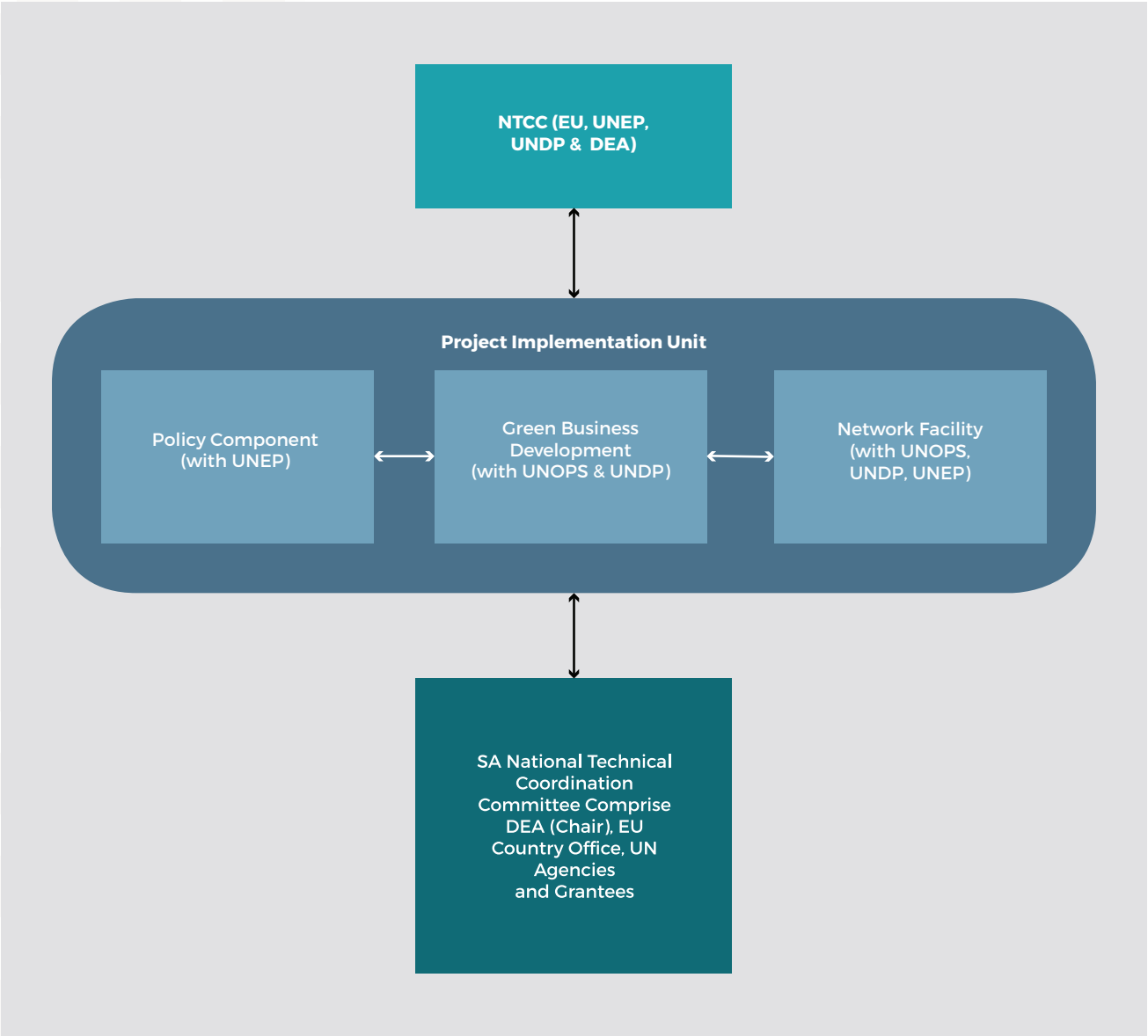


Figure 17: National project administration

7.3 National Logframe

The logframe at the national level is developed in noting that the South Africa project is one of six national projects in Africa under the Switch Africa Green umbrella, and the need to align national and regional programme components both in terms of content and timing. This is as a result of the regional programme milestones being driven by progress in the seven countries. Therefore, the logframe (Table 5) is based on the regional project but customised to the national SA context.

Table 5: National Logframe

1. Project Outcome/relevant Programme of Work Output	Indicators	Means of Verification
1. Policies designed and implemented in South Africa, which provide the regulatory framework and other incentives which enable industry, and particularly SMEs, to invest in and apply more sustainable and resource efficient production methods and management practices. 2. Pilot projects implemented supporting private enterprises on the application of SCP tools and clean and resource efficient management practices and technologies, also enabling them to respond to increasing demand for sustainable products in various markets. 3. Best practices on sustainable production, green business entrepreneurship and identifying and meeting consumer demand for sustainable products is documented.	• New indicator on SCP and green economy designed Existing SCP and green economy-relevant policies updated. Regulations and standards on SCP and green economy implemented. • RECP trainees aligned with pilot projects increase • Number of new SMEs active in RECP increased • Increased articles, periodicals, books, workshops on best practices	• New Government policy documents. Updated / revised policy documents Reports on policy development processes. • National progress reports. Popular press articles. Articles in specialist journals Project reports. • SARS data on energy efficiency tax rebates granted (L12).
2. Project Outputs:	Indicators	Means of Verification
1. Support provided to policy actors: • To be better informed and equipped with policy-relevant scientific information. • Strengthened institutions. • Appropriate tools and instruments such as policies, regulatory framework, incentive structures, tax. • Market-based instruments allowing private sector led inclusive green growth through green business entrepreneurship. • Eco-innovation and sustainable production and consumption actions in Manufacturing, Agriculture and Integrated Waste Management, complementing existing national planning and strategic frameworks for creating inclusive green economies.	• Inventories and reviews of existing policies and instruments conducted and gaps, capacity building needs, opportunities and constraints identified. • Business conditions of the sector assessed and capacity building needs identified. • Baselines on economic performance, resource efficiency, environmental impacts and social returns established. • National road maps/action plans drafted/ updated and being implemented to support the development of eco- entrepreneurship, eco-innovation and the shift to SCP practices/ green economy. • Policy instruments/legislation/regulations prepared in response to confirmed needs	• Documents of inventories/ reviews/ assessments/ national road maps/ action plans. • National progress reports from DEA, DED, DPW, DST, DAFF, DoE, the dti, Private sector, Research Institutions. • Reports from SMEs showing their response to new SCP and GE policies introduced by the government. These reports include: • Annual reports • Corporate sustainability reports • Independent sector research reports

2. Project Outputs:	Indicators	Means of Verification
2. Support provided to economic actors: - Better understanding of- and opportunities identified to further develop green businesses. - Better equipped to take up those opportunities for green business. SCP and green economy projects implemented, leading to better access to cleaner technologies and redirection of investment for greener economies promoted.	- Toolkits developed and provided for: Eco-entrepreneurial skills. - RECP - Eco-innovation related issues (e.g. resource efficiency, sustainable product improvement, material and related labelling. - Sustainability reporting. - Marketing along the value chain including trade linkages. - Number of projects implemented.	- Toolkits in place. - Reports by the SMEs showing their response to and application of toolkits. - Capacity building activities and training provided. - Independent monitoring and evaluation reports of changes in business practices, including adoption of cleaner production.
3. Knowledge, lessons learned and good practice from the projects are distilled and disseminated nationally, and shared with the regional SAG project.	- Information disseminated on the programmes, its projects and successful project practices. - Knowledge of project practices documented lessons learnt, good practices adopted, and effective replication being promoted in South Africa. - Number of SCP tools, guidelines/manuals, technologies and practices developed. - Number of networking events. - Establishment of the networking facility.	- Information material, tools, guidelines/manuals. - Networking event reports. - Documents from SCP/GE partnership events. - Publications on experiences and lessons learnt. - Official announcements / news bulletins, physical staff
Project Milestones:		
Milestone 1 - Inventories/reviews of existing policies/instruments published - Assessments of business environment published - National road maps/action plans drafted/updated - National road maps/action plans implemented - Policy instruments/legislation/regulations prepared and implementation underway		
Milestone 2 - Call for proposals launched - Grant support agreements issued - Green business and sustainable production practices and measures required for implementation identified - Toolkits on SCP and GE related issues developed and provided to SMEs and SMEs Green business and sustainable production practices implemented		
Milestone 3 - Networking facility established - Dissemination of SCP tools, guidelines/manuals, technologies and good practices started - Regional networking meeting will all relevant stakeholders of the six countries held - Successful project practices and evaluations of economic, social and environmental gains from SCP practices disseminated and effective replication promoted in the region		

Table 6: Programme Milestones – Phase 1

Milestones (colour coded) M1, M2 and M3 in chronological sequence

Milestone	Tasks
2.1	Call for proposals launched
1.2	Inventories/reviews of existing policies/instruments published
1.2	Assessments of business environment published
3.1	Networking facility established
3.2	Dissemination of SCP tools, guidelines/manuals, technologies and good practices started
1.3	National road maps/action plans drafted/updated
2.2	Grant support agreements issued
2.3	Green business and sustainable production practices & measures identified
3.3	Regional networking meeting with all relevant stakeholders of the six countries held
1.4	National road maps/action plans implemented
2.4	Toolkits developed and provided to SMMEs, SMMEs implement SPs
1.5	Policy instruments/legislation/regulations prepared and implementation underway
3.4	Successful practices disseminated & replication promoted

Table 7: Programme Milestones – Phase 2

Number	Tasks	Date of Action
1	Development of draft business plan	March 2017
2	Approval of country Business Plans	June 2017
3	Call for proposals for Green business – Component 2	Feb 2017
4	Review of administrative management of Phase 2	Aug – Oct 2017
5	UNEP mission for Phase 1 Monitoring & Evaluation	Nov 2017
6	Review of Phase 1 Report to include Phase 2	Apr – Nov 2017
7	Finalization of Report & Director General approval	Dec 2017
8	Submission of final Report to UNEP	Dec 2017
9	Commencement of Implementation of Phase 2	Jan 2018

Table 8: Phase 1 Work plan: 2015–2017

Indicative Work Plan and Project Delivery	Responsible Division/ RO	Main Partners	Timing
A) Project Output: 1. Provide support to policy stakeholders in South Africa to be better informed and equipped with policy-relevant scientific information, strengthened institutions and appropriate tools and instruments such as policies, regulatory frameworks, incentives structures, tax and market-based instruments allowing private sector led inclusive green growth through green business development, eco-innovation and sustainable production and consumption actions in Manufacturing, Agriculture and Integrated Waste Management, complementing existing national planning and strategic frameworks for creating an inclusive green economy	ROA/DTIE	South Africa	
A.1 - Inventory of existing policies and instruments and mapping of gaps, including reviews of related eco-entrepreneurship, eco-innovation, SCP and green economy policies focusing on the specific sectors targeted/selected in South Africa, and identification of capacity building needs, opportunities, bottlenecks and constraints created by existing policies and instrument; review of best practices in other regions.	ROA/DTIE	Government Departments, EPAs, NCPC- SA/NTIs	2016
A.2. - Assessment of the business environment for Manufacturing, Agriculture and Integrated Waste Management and identification of capacity building needs, in particular of the existing Business Development Providers, including selection and establishment of current baselines on economic performances, resource efficiency, environmental impacts and social returns of each sector in each country	ROA/DTIE	Government Departments, EPAs, NCPC- SA/NTIs	2016
A.3 - Drafting and updating national road map / action plan for support the development of eco-entrepreneurship, eco-innovation and the shift to SCP practices / green economy.	ROA/DTIE	Government Departments, EPAs, NCPC- SA/ NTIs	2016
A.4 - Implementing national road map / action plan for support the development of eco-entrepreneurship, eco-innovation and the shift to SCP practices / green economy	ROA/DTIE	Government Departments, EPAs, NCPC- SA/ NTIs	2017
A.5 - Support to preparation of specific policy instruments/legislation/regulations as decided at national level through training and workshops	ROA/DTIE		2017
A-6 - Reporting costs and communication	ROA/DTIE		

B) Project Output: 2. Provide support to economic stakeholders in South Africa to be better equipped to identify and/or put in practice opportunities for green business development and markets (domestic and export) for sustainably produced goods and services.	UNEP/UNDP	South Africa		
B.2 - Project coordination and management		UNOPS		
B.3 - Reporting costs and communication				2016 -
C) Project Output: 3. Contribute to distilling and dissemination of knowledge, lessons learned and good practices from national projects to create broader awareness, and increase understanding, buy-in and uptake of GE and SCP ideas among key stakeholders in private sector, governments and consumers	ROA/DTIE	South Africa		
C.1 - Providing information on the projects: sharing knowledge and disseminating successful project practices	ROA	ARSCP, RECPhet		2017
C.2 - Generating knowledge of project practices, lessons learned, good practices and promote effective local replication and liaising with SWITCH Africa	ROA/DTIE	ARSCP, RECPhet		2017
C.3 - Participating in networking events to share experiences and learn from others in the Region	ROA	ARSCP, RECPhet		2017
C.4 - Participating in regional technical fora for interactions with policy-makers, the private sector and other stakeholders developing and disseminating SCP tools, guidelines/manuals, technologies and practices to stakeholders and policy makers, including in other regions and notably to companies with supply chains sourced in Africa	ROA/DTIE	ARSCP, RECPhet		2017
C.5 - Reporting costs and communication	UNEP	ARSCP		2017

Table 9: Phase 2 Workplan: 2018 - 2020

No.	Interventions - Policy Actions	Indicator	Timeline					Budget
			Y1	Y2	Y3	Y4	Y5	
1.	Policy Support: Update/Review of Inception Report - Paris Agreement & SDG Agenda 2030 - Alignment to national priorities	Updated Report	X					In-house undertaking
	Phase 1: Close out Report - Draft TOR - Obtain approval from partners - Advertise call for proposals through partners procurement process - Evaluation of proposals - Selection of preferred service provider - Inception meeting - Finalize workplan - Monitor progress on iterations (x3)	Close out Report – Communications Product		X	X			Approximately \$15 000 from phase 1 budget
	Agriculture Climate Smart Agriculture Strengthened	Climate Smart Agriculture Guideline developed		X	X			Share of \$2 million - \$ 333 333 – (\$34 000)
	Concept of Circular Economy Introduced in South Africa	Circular Economy Framework developed		X	X			Share of \$2 million (\$34 000)
	Manufacturing Water Efficiency in manufacturing enhanced	Assessment Report on Industrial Waste water treatment prepared (in number of Special Economic Zones/Industrial Parks)		X	X			Share of \$2 million (\$25 – 30 000)

No.	Interventions - Policy Actions	Indicator	Timeline					Budget
			Y1	Y2	Y3	Y4	Y5	
2.	Green Business Development Phase 1: Progress monitoring - Conservation South Africa - Fairtrade Label - Fundacion Sustalde - Living Lands - Proudly South African - REEEP	Quarterly Reports (x4) Active monitoring: Site visit reports Passive monitoring: quarterly reports	X	X	X	X	X	Existing Grantee budget Operational budget allocation for personnel
	Phase 2: Startup Selected final beneficiaries (MSMEs) of each grantee	Finalized Business Plans	X					Approved budgets of grantees of up to \$ 600 000 for Phase 2
	Implementation - Monitoring of progress on activities in respective business plans of grantees. - Mitigation measures where applicable	Progress reports		X	X	X	X	
	Progress monitoring: - Logistical arrangements for site visits - Draft programme - Facilitate updates for site visits - Undertake visits with grantees to beneficiaries	Quarterly Reports (x4) Active monitoring: Site visit reports Passive monitoring: Quarterly reports		X	X	X	X	
3.	Networking Facility							
	Explore and establish partnerships with other national platforms that could be used to promote SCP	Confirmed platforms	X	X	X	X	X	
	Grantee Capacity building Workshop on Reporting - Finalize dates - Book venue - Draft programme - Send out invitations - Confirm attendance - Host workshop - Draft Report - Circulate for input - Finalize Report - Distribute final Report	Workshop proceedings (X1)	X					Approximately \$3000 Venue & catering

No.	Interventions - Policy Actions	Indicator	Timeline					Budget
			Y1	Y2	Y3	Y4	Y5	
	Broader Stakeholder Workshop on SCP - Finalize dates - Book venue - Draft programme - Circulate invitations - Confirm attendance - Host workshop - Draft Report - Circulate for input - Finalize Report - Distribute final Report	Workshop proceedings (X1)		X		X		
	Grantee training programmes (as determined by Grantee Business Plans): Support grantee training programmes through participation	Training guideline Training Workshop report	X	X	X	X	X	
	Agriculture: Facilitate training on guideline with respective stakeholders	TOT programme Training Workshop report			X			
	Integrated Waste Management: Facilitate training on guideline with respective stakeholders	TOT programme Training workshop report			X			
	Manufacturing: Facilitate training on guideline with respective stakeholders	TOT programme Training workshop report			X			
	Regional Guideline: Value addition/beneficiation	Training presentation			X			
	Governance: - Quarter Steering Committee meetings: - Members of the NTCC - SAG Grantees and their partners - The project partners (UNEP, UNDP and UNOPS) and EU delegation; - Officials of the Department of Environmental Affairs - New grantees	Minutes of Meetings (x4) Action Plans from Meetings (x4) Presentations by Grantees on Project Implementation Progress	X	X	X	X	X	

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Appendix A: The Nine-Point Plan

1. Resolving the energy challenge

Substantial progress has been made in resolving energy challenges in South Africa since the inception of the Five Point Energy Plan in December 2014.

On 21 December 2015 the Department of Energy published a determination on the nuclear programme, whereby 9 600 megawatts should be generated from nuclear energy.

The Medupi Power Station's Unit 6 came online in August – producing 794 megawatts (MW) of electricity bringing the total installed capacity of the grid to about 45 000 MW . The R2 billion Coega Wind Farm project was officially opened in September.

Eskom has also signed short-term power purchase agreements to secure additional electricity during peak periods, while a further 800 MW will be added to the grid through co-generation.

Energy-efficiency programmes have resulted in savings of 450 MW .

Various renewable energy projects under the Renewable Energy Independent Power

Producer Programme currently supply 1 800 MW to the grid.

In October, Energy Minister Tina Joemat-Pettersson announced the 10 preferred bidders in the small projects renewable energy independent power producers' programme. In addition, the department released a report titled the State of Renewable Energy in SA revealing that the renewables sector attracted R192.6 billion in investment, contributed more than 109 000 construction jobs and cut the equivalent of 4.4 million tons of carbon dioxide.

Lead department: *Department of Energy*

2. Revitalising agriculture and the agro-processing value chain

43 of the 44 Agri-Park sites had been identified by August with one Agri-Park already launched in North West. The programme aims to help create 300 000 new small-scale producers and 145 000 new agro-processing jobs by 2020.

The total number of jobs in agriculture increased by 183 000 between 2014 and 2015 reaching a total of 891 000.

With regards to acquiring strategically located high-value agricultural land for key Agricultural Policy Action Plan commodities, 24 162 hectares were acquired and allocated to smallholder farmers.

Fruit production stood at 268 563 tons (7 988 hectares) representing an increase of R685 million with a potential of 1 868 jobs – this exceeds the annual growth target of 10,898 hectares.

Aquaculture has shown growth in five years, with production from 2014 up fivefold to 20 000 tons. Year on year growth between 2013 and 2014 was 25%, which exceeds the average global growth rate of 7%. Aquaculture has contributed as much as R3 billion to the economy.

Lead departments: *Department of Agriculture, Forestry and Fisheries Department of Rural Development and Land Reform*

3. Advancing beneficiation or adding value to the mineral wealth

The draft amendments of the Mineral and Petroleum Resources Development Act, which contain provisions to stimulate local beneficiation, were referred back to Parliament in January after concern expressed by the President over whether it would pass constitutional muster.

The Department of Trade and Industry (the dti) plans to develop the Mineral Beneficiation Action Plan as part of its objectives contained in its 2015/16 strategic plan and incorporate this into the Industrial Action Policy Plan.

The Minister of Trade and Industry Rob Davies said in his Budget Vote in May that significant industrial development opportunities were emerging in the form of clean energy and mineral beneficiation, these include the development of hydrogen fuel cells using the country's rich platinum deposits.

In April, Impala Platinum installed a 1.8 MW fuel cell at its Springs refinery, which offers a renewable energy alternative.

Lead department: Department of Trade and Industry

4. More effective implementation of a higher impact Industrial Action Policy Action Plan (IPAP)

The seventh iteration of IPAP, which is aimed at raising the impact of government interventions to support industrial development and re-industrialise the country, was launched in May.

The dti has designated 16 sectors, subsectors and products for local procurement. This year further designations for local procurement include transformers, power-line hardware and structures, steel conveyance pipes, mining and construction vehicles and building and construction. In the 645 infrastructure projects across the country valued at R3.6 trillion the state must procure these types of products from local manufacturers.

Government has also introduced the Black Industrialist Programme, which is designed to transform the manufacturing sector and unlock the potential of black entrepreneurs. Initial funding of R1 billion has been secured from the department for the current financial year and R23 billion from the Industrial Development Corporation (IDC) for the next three financial years.

The IDC also set up its new industries unit earlier this year to focus on supporting and funding the entire value chain of emerging innovative sectors.

Rail and ship manufacturing has been successfully revitalised.

Ships for the South African Navy and locomotives are being built in South Africa.

Lead department: Department of Trade and Industry

5. Encouraging private-sector investment

President Zuma announced in August that an investment clearing house is being set up in the dti to support local and international investments to help identify bottlenecks, remove administrative barriers, reduce regulatory inefficiencies, set up norms and standards, improve turnaround times, and coordinate and fast-track investment enquiries.

In the past financial year the department helped facilitate an investment pipeline of over R43.8 billion.

As of August, South Africa was handling 116 foreign direct investment (FDI) projects. In October, the department's Director of Economic Research and Policy Coordination Timothy Dladla said that South Africa registered FDI inflow of R43.3 billion from January to July this year, which helped create 5 037 jobs.

Big drivers of investment are the six industrial development zones that have attracted R10 billion.

Progress is being made in finalising the regulations for special economic zones (SEZs). A board has been established for the SEZs and a supporting secretariat has been approved. The department is close to completing the feasibility studies for the eight new SEZs.

The Promotion and Protection of Investment Bill, which is aimed at clarifying the level of protection that an investor may expect in South Africa and to further ensure that South Africa remains open to foreign investment, was tabled in Parliament this year. President Zuma told heads of business in August at the annual Presidential Business Working Group that he had initiated a feasibility study for an initiative aimed at supporting increased investment to meet the needs of the National Development Plan.

Lead department: *Department of Trade and Industry*

6. Moderating workplace conflict

Deputy President Cyril Ramaphosa is leading a special dialogue between business and labour to improve labour relations.

Two technical teams are working on the violent nature of strikes and the issue of wage inequality. In September, Economic Development Minister Ebrahim Patel said he expected the first phase of their work to be completed by the end of the year.

A consensus on a working definition of a national minimum wage has been reached at the National Economic Development and Labour Council.

Lead department: *Department of Labour*

7. Unlocking the potential of SMMEs, cooperatives, townships and rural enterprises

The Department of Small Business Development continues to pilot its informal sector support policy, which includes the provision of business training, grants and co-funding in partnership with municipalities to revamp factory and business premises infrastructure.

A special unit has been established in the Department of Planning, Monitoring and

Evaluation to investigate cases of late or non-payment of suppliers.

In September, the Minister in The Presidency Responsible for Planning, Monitoring and

Evaluation, Jeff Radebe, said a comparative analysis of national departments between 2013 and 2014 showed that despite delays in payment remaining a major problem, there had been improvement in the average number of invoices paid within 30 days. Provincial departments for the same period reveal a marginal improvement of 5% in the average number of invoices paid within 30 days.

Lead department: *Department of Small Business Development*

8. State reform and boosting the role of state-owned companies, information and communications technology infrastructure or broadband roll-out, water, sanitation and transport infrastructure

Government is making progress with its broadband rollout by August 41 351km of fibre optic cables had been laid.

In October, Telkom launched OpenServe, a wholesale division aimed at facilitating the entry of new Internet service providers, particularly black companies.

As part of the Independent Communications Authority of South Africa's universal service obligations 623 schools have been connected via various service providers across the country.

The Universal Service and Access Agency of South Africa connectivity project is currently underway in the Vhembe and Gert Sibande Districts.

Meanwhile, government has identified water as a critical resource for economic development and work continues to implement the Five-Point Plan for water and sanitation. The plan entails:

- Maintaining and upgrading existing water and sanitation infrastructure. Building new dams and developing ground water.
- Improving water quality.
- Developing smart technologies for water and sanitation information management. Ensuring an enhanced and integrated regulatory regime such as water-use licensing.

Progress with regard to water and sanitation include:

- In October, the Department of Water and Sanitation, together with Umgeni Water and the Ugu District Municipality, announced the completion of the Mhlabatshane Dam at Umzumbe in KwaZulu-Natal. It will provide about 100 000 people with potable water. Water was supplied to 19 119 households in the 27 priority District Municipalities.
- 11 waste water treatment works have been refurbished.
- 75 projects involving the maintenance and upgrading of existing water infrastructure are under construction.

Government is intervening to stop water leaks which cost the country R7 billion a year. Government's programme, through the Department of Water and Sanitation, to train 15 000 artisans and plumbers to fix leaking taps in their communities, was officially launched in Port Elizabeth, Eastern Cape, in August. The first intake of 3 000 is being recruited in the 2015/16 financial year.

Lead departments:

Department of Telecommunications and Postal Services

Department of Water and Sanitation

Department of Transport

9. Operation Phakisa, which is aimed at growing the ocean economy and other sectors

Government has made much progress since it launched its fast results delivery methodology, Operation Phakisa, in the health and ocean economy sectors in 2014. Progress has been made in small harbour upgrades such as Saldanha Bay, Struisbaai, Gansbaai, Gordon's Bay and Lamberts Bay.

Nine catalyst projects are in progress. Fish farms have been supported with the industry investing R305 million, government R105 million and 521 new jobs created. Operation Phakisa had also resulted in decisions to expand the domestic shipbuilding sector and the development of Saldanha Bay as an oil and gas hub.

A Mining Phakisa, aimed at minerals beneficiation, will be launched by the end of 2015.

Lead departments:

Department of Environmental Affairs (Oceans Economy)

Department of Mineral Resources (Mining)

Department of Health (Health)

Department of Tourism (Tourism)

Department of Basic Education (Basic Education)

Appendix B:

Government Policies and Strategies Aligned With the Green Economy in SA

No	Policy/ Strategy/ Program/ Initiative	Objective/ Description	Cross-cutting sector policies	Current status	Gaps/ Shortcomings	Comments/ Recommendations
1	National Skills Development Strategy III, 2011. Department of Higher Education and Training	The third National Skills Development Strategy (NSDS III) follows the integration of higher and further education and skills development into a single Department of Higher Education and Training. This strategy intends to achieve significant increases in qualifications and skills to support priorities and initiatives such as the New Growth Path, the Industrial Policy Action Plan, the Human Resource Development Strategy and, in particular, sector development plans. Particularly relevant to agriculture and green economy as it places emphasis on training to enable trainees to enter the formal workforce. It targets those who do not have relevant technical skills to enable them to access employment. This potentially affords opportunities to people with low skills levels to access skills development and ultimately employment through agricultural green economy initiatives.	NGP IPAP MTS F NW MS HRDSSA II	Within a relatively short space of time, public colleges were merged from an inequitable assortment of 152 small individual colleges to 50 mega institutions, which are multi-site and diverse. Since then, the college sector has seen a large investment by the state through the recapitalisation process which started in 2007. However, many challenges remain in expanding and improving capacity at FET colleges (Department of Higher Education and Training, 2011).	The economy remains constrained by a severe lack of skills, and so the skills development system as a whole has not yet achieved what was expected (Department of Higher Education and Training, 2011).	There is currently no institutional mechanism providing credible information and analysis on the supply and demand for skills. There is no standardised framework for determining skills supply, shortages and vacancies, no integrated information system for skills supply and demand across government (Department of Higher Education and Training, 2011). With that said, it is clear that there are skills shortages to address sector specific strategy.

No	Policy/ Strategy/ Program/ Initiative	Objective/ Description	Cross-cutting sector policies	Current status	Gaps/ Shortcomings	Comments/ Recommendations
2	National Development Plan (NDP), 2030. The National Planning Commission, under Presidency	By 2030, South Africa aims to have transitioned to an environmentally sustainable, climate-change resilient, low-carbon economy and a just society. The South African government adopted NDP as a roadmap to deliver public services efficiently up to 2030, in particular water, electricity, sanitation, jobs, housing, public transport, adequate nutrition, education, social protection, quality healthcare, recreation and a clean environment. The NDP also calls on government to introduce a carbon tax.	IPAP NGP	Some of the significant strides made between 2009 and 2013 to green the economy included \$86 billion spent on 'green' infrastructure, \$30 million on the Green Fund and \$40 million on green economy projects. Approximately 315 000 solar geysers were installed while 200 000 households were connected to the national electricity grid, following the NDP initiative (National Planning Commission,		Policy being an umbrella body from which all other frameworks and programmes stems, it is imperative their implementation plans does reflect this link to NDP. The establishment of NPC to monitor performance of the implement indicated commitment towards service delivery.
3	Integrated Resource Plan, 2010-30. Dept. of Energy	The Integrated Resource Plan (IRP) was promulgated in March 2011 to cover the period 2010-2030. It is a medium-to long-term plan that will help direct expansion of electricity supply including private and own generation and power purchases from regional projects. The IRP determines the timing and mix of the projects and will form the basis by which NERSA will license such projects. It limits emissions from electricity generation to 275Mt per year. Expects renewable energy to make up 42% of all new electricity generation over the next 20 years.	NDP MTSF	Approximately 248 000 households were supplied with electricity for the first time during the period November 2010 to November 2011, and 3 655 homes were connected to off-grid solar systems. 800 MW of co-generation capacity was added to that preferred in the IRP plans. Of these determinations the Renewable Bid Programme has already contracted 2 470 MW of renewable capacity and the contracts with the DoE OCGT speakers have been finalised (Department of Energy, 2013).		The Policy-Adjusted IRP includes the same amount of coal and nuclear new builds as the RBS, while reflecting recent developments with respect to prices for renewables. In addition to all existing and committed power plants (including 10 GW committed coal), the plan includes 9,6 GW of nuclear; 6,3 GW of coal; 17,8 GW of renewables; and 8,9 GW of other generation sources (Department of Energy, 2011).

No	Policy/ Strategy/ Program/ Initiative	Objective/ Description	Cross-cutting sector policies	Current status	Gaps/ Shortcomings	Comments/ Recommendations
4	Medium-Term Strategic Framework 2014-2019, National Planning Commission, under Presidency	This Medium Term Strategic Framework (MTSF) is Government's strategic plan for the 2014-2019 electoral term. It reflects the commitments made in the election manifesto of the governing party, including the commitment to implement the NDP. The MTSF sets out the actions Government will take and targets to be achieved. It also provides a framework for the other plans of national, provincial and local government. It notes the need for sustainable livelihoods and sustainable resource management and relates these to various other policy areas including energy, water, housing, technology and competitiveness.	NSSD IRP NDP	Numerous policy responses implemented in line with the Medium-Term Strategic Framework, particularly the NSSD, the creation of an enabling environment for renewable energy, several water management projects and the National Climate Change Response. The 28 preferred IPPs have been announced, comprising: 18 solar PV projects, 8 onshore wind projects and 2 concentrated solar power projects. All projects were to be generating power by mid-2014. In addition, a total of 4 MW of solar photovoltaic capacity was installed in the country in the lead up to COP 17 by Eskom, IPPs and municipalities as part of a carbon offset and legacy programme.	The MTSF is structured around 14 priority outcomes which cover the focus areas identified in the NDP and govt.'s electoral mandate i.e. The main focus for the MTSF period will be on planning, piloting and investing in the creation of a framework for implementing the transition to an environmentally sustainable and low-carbon	A coherent relationship exists between NDP and MTSF. This is clearly translated by the goals set in NDP and how these would be achieved through MTSF.

No	Policy/ Strategy/ Program/ Initiative	Objective/ Description	Cross-cutting sector policies	Current status	Gaps/ Shortcomings	Comments/ Recommendations
5	National Strategy for Sustainable Development and Action Plan (NSSD 1), 2009-2014. Department of Environment	The 2011 Cabinet endorsed the National Strategy for Sustainable Development and Action Plan, which identified five strategic priorities: Enhancing systems for integrated planning and implementation; Sustaining our ecosystems and using natural resources efficiently; Towards a green economy; Building sustainable communities; Responding effectively to climate change. It therefore provides a high-level roadmap for strategic sustainable development.	MTSF Cop 17 IPAP NGP	Five strategic priorities and an associated Action Plan have been developed within the context of sustainable development, e.g. Priority three, "Towards a green economy": Financial resources amounting to approximately \$1.2 billion for industrial development, \$2.5 billion from the Development Bank of South Africa, \$10 billion from the private sector and \$80 million from the National Treasury were identified for green economy initiatives.		It is worth noting that the National Committee on Sustainable Development (NCSD), is established to ensure that the goals of the NSSD 1 and the Action Plan are implemented effectively, performance thereof is developing policies without a proper evaluation and monitoring of performance.
6	Framework for Environmental Fiscal Reform, 2006. National Treasury	The aim of this policy paper is to outline the role that market-based instruments, specifically environmentally-related taxes and charges, could play in supporting sustainable development in South Africa. It provides principles and guidelines for fair and effective environmental taxes.	NDP IPAP NSSD NWMS	Taxes and levies have been implemented on plastic bags, incandescent light bulbs, ecosystem restoration costs related to water use, liquid fuel, non-renewable electricity and new vehicle carbon dioxide emissions performance. Environmentally-related tax revenue trends are heavily influenced by the general fuel levy, which accounts for over 70 per cent of the revenue collected from this group of instruments (National Treasury, 2006).		Since the majority of existing environmentally-related taxes were introduced with the primary intention of raising revenue, there exists the potential to improve the environmental outcomes and behavioural incentives created by these instruments. From a fiscal point of view, the idea of using environmentally-related taxes as part of a tax shifting exercise also needs to be explored (National Treasury, 2006). Emphasis was put in place to review these vehicles for sustainable development.

No	Policy/ Strategy/ Program/ Initiative	Objective/ Description	Cross-cutting sector policies	Current status	Gaps/ Shortcomings	Comments/ Recommendations
7	Industrial Policy Action Plan (IPAP), 2015. Dept. Trade & Industry	IPAP, formulated by 'the dti' specifically targets growth in green industries, focusing on solar water heaters (SWHs), but also includes other solar and wind energy, biofuels, electric vehicles and organic farming. It is a significant step forward in scaling up government's efforts to promote long- term industrialisation and industrial diversification beyond the current reliance on traditional commodities and non-tradable services, with the aim to expand production in value-added sectors with high employment and growth multipliers that compete in export markets, as well as those that compete in the domestic market against imports	NIPF NGP MTSF NDP	Around 200 000 SWHs installed by mid-2012 and a procurement process started for around R120 billion worth of large-scale renewable electricity generation.	IPAP being a "living" document that is updated yearly to align itself with economic changes and lessons learned every year. If this principle could also be applied to other "green economy" programmes that are aligned to IPAP to streamline programmes and projects.	IPAP is a product of the Economic Cluster of government. It is published annually as a way of openly sharing with all stakeholders the thinking processes that underpin the ongoing adjustment and strengthening of government plans and the modification of its focus areas and instruments (the dti, 2015).
8	New Growth Path (NGP): Framework, 2011. Department of Economic Development	The New Growth Path (NGP) establishes a labour-absorbing growth path for the country. The NGP identifies a number of job drivers. It identifies areas where employment creation is possible on a large scale as a result of substantial changes in conditions in South Africa and globally. The NGP outlines the government's approach to accelerate growth and employment, setting a goal of 5 million jobs by 2020. Subsequently in 2011, during COP-17, one of the key commitments was the Green Economy Accord, which was meant to provide a unique opportunity to create a considerable amount of jobs through partnerships among government, business representatives, organised labour and the community constituency. The Green Economy Accord marked a key point in the partnership between the South African government, business community, trade unions and community organisations.	Green Economy Accord MTSF IPAP NSDS	Noticeably, between 2009 and 2013, \$86 billion was invested in infrastructure projects, while \$80 million was set aside as the Green Fund, with \$11 million earmarked for green economy projects (Department of Economic Development, 2010).		Government must encourage stronger investment by the private and public sectors to grow employment-creating activities rapidly while maintaining and incrementally improving South Africa's core strengths in sectors such as capital equipment for construction and mining, metallurgy, heavy chemicals, pharmaceuticals, software, green technologies and biotechnology. These industries build on our strong resource base and our advanced skills and capacity in some economic sectors (Department of Economic Development, 2011). Government has created various instruments and is committed in its plans to create jobs in the country.

No	Policy/ Strategy/ Program/ Initiative	Objective/ Description	Cross-cutting sector policies	Current status	Gaps/ Shortcomings	Comments/ Recommendations
9	Ten Year Innovation Plan, 2008. Department of Science and Technology	The purpose of the Ten-Year Innovation Plan is to help drive South Africa's transformation towards a knowledge-based economy, in which the production and dissemination of knowledge leads to economic benefits and enriches all fields of human endeavor. The core projections for 2018 are summarised as South Africa's "grand challenges" in science and technology. It includes "safe, clean, affordable and reliable energy supply" and climate change as priorities. It provides support for innovations in electric vehicles, fuel cells and carbon capture and storage.	NIPF NSI Millennium Development Goals	South Africa is well positioned to lead research on the continent in terms of understanding and projecting changes to the physical system; the impact of these changes; and mitigation to limit their long-term effects. Mitigating climate change also provides an economic opportunity for South Africa; therefore, the country needs to develop a strategy to take advantage of the so-called "Green Economy" (Department of Science and Technology, 2008).	The plan proceeds from government's broad socioeconomic mandate – particularly the need to accelerate and sustain economic growth – and is built on the foundation of the national system of innovation (NSI). It recognises that while the country's science and technology system has taken important strides forward, there is a tremendous gap between South Africa and those countries identified as knowledge-driven economies (Department of Science and Technology, 2008).	South Africa must seize the opportunities now available in areas such as biotechnology, nanotechnology and the "hydrogen economy" to establish capabilities that will provide long-term, sustainable solutions in national priority areas such as health and energy, while boosting economic growth (Department of Science and Technology, 2008). Thus progress has been made by SA to the call of embracing green economy and developing relevant policies and strategies.
10	National Waste Management Strategy, 2011. Department of Environmental Affairs	The National Waste Management Strategy (NWMS) is a legislative requirement of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008), the "Waste Act". The purpose of the NWMS is to achieve the objects of the Waste Act. Organs of state and affected persons are obliged to give effect to the NWMS. Waste management in South Africa faces numerous challenges and the NWMS provides a plan to address them.	NSSD IWMP NGP	The Expanded Public Works Programme has successfully piloted community-based collection methods and lessons learnt will inform the roll-out of waste services in the country. 2015 targets for new job creation and the number of additional SMEs and cooperatives participating in waste service delivery and recycling were set at: 69 000 new jobs created within the waste sector and 2 600 additional SMEs and cooperatives participating in waste service delivery and recycling (Department of Environmental Affairs, 2011).	Shortage of specialist skills for to address sector specific strategies	The strategy gives effect to Outcome 10 of the Government- wide Monitoring and Evaluation System (GWM&E) namely that environmental assets and natural resources are well protected and continually enhanced (Department of Environmental Affairs, 2011). There an existing link with the government vehicle of monitoring and evaluation.

No	Policy/ Strategy/ Program/ Initiative	Objective/ Description	Cross-cutting sector policies	Current status	Gaps/ Shortcomings	Comments/ Recommendations
11	Draft policy for the Sustainable Management of Veld and Forage Resources in South Africa, 2014 DAFF	The objectives of the policy are to: Provide a framework and guidelines that promote and facilitate the sustainable use of South Africa's veld and forage resources for animal production; Provide a framework and guidelines for effective veld and forage monitoring and improvement with the capacity to support compliance to the relevant regulation thereof; Support and facilitate the revival of existing R&D structures within biomes and across provincial boundaries; Assist with poverty alleviation and food security through the sustainable use of veld and forage resources for an economically viable animal production sector.	Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983)(CARA) Subdivision of Agricultural Land Act, 1970 (Act 70 of 1970) National Veld and Forest Fire Act, 1998 (Act 101 of 1998) National Environmental Management Act, 1998 (Act 107 of 1998) (NEMA) National Environment Management : Biodiversity Act, 2004 (Act 10 of 2004)		Climate change is predicted to make some agricultural land more marginal, which means people will become more dependent on livestock farming as opposed to irrigated and dryland agriculture. On the other hand, in areas where rainfall increases as a result of climate change, irrigated and dryland cropping might expand onto rangelands, often resulting in a loss of key resource areas. The productivity of veld and forage resources in many parts of South Africa has been degraded over many years. In particular, the veld in many parts of the arid environments have been transformed to a less desirable state as a result of disturbances such as high grazing pressure, resulting in desertification, bush encroachment and loss of palatable species. Should this deterioration be allowed to continue, sustainable animal production and long-term economic growth will be stifled.	Best Practices Guidelines for the sustainable management of veld and forage resources. These guidelines should address issues such as provision of artificial water supply systems, fencing considerations, infrastructure and various veld management practices aimed at an ecologically and economically viable farming enterprise. The National Veld and Forage Strategy – Programme and Implementation Framework should be endorsed at Cabinet level as a national priority with sustainable management of the natural resources as basis of food safety and security. Establishment of National Veld and Forage Monitoring and Improvement Programme. Farmer support services.

Appendix C:

Links Between Selected Policies and SMMEs

No	Policy/ Strategy/ Program/ Initiative	Objective/ Description
1	National Skills Development Strategy III, 2011. Dept. of Higher Education and Training	Outcome 4.6: Encouraging and supporting cooperatives, small enterprises, worker-initiated, NGO and community training initiatives "...the NSDS III must support the training needs of the cooperatives, including relevant capacity building for the secondary, apex and cooperative movements as a whole..." page 19 Cooperatives supported with skills training and development expand and contribute to sector economic and employment growth Partnership projects to provide training and development support to small businesses are established in all sectors and their impact reported on Worker, NGO and community-based education programmes are supported and their impact measured and reported on
2	National Development Plan (NDP), 2030. The National Planning Commission, under	An integrated and inclusive rural economy (the whole chapter dedicated to agricultural sector of SMME's) "...The vision includes better integration of the country's rural areas, achieved through successful land reform, infrastructure development, job creation and poverty alleviation. In areas with some economic potential, non-agricultural activities (such as agro-industry, tourism, small enterprises and fisheries) will boost development..." page 218 The objective of creating a total of 969 500 jobs by 2030 through agriculture.
3	Integrated Resource Plan, 2010-30. Dept. of Energy	This policy does not mention any links towards SMME's.
4	Medium-Term Strategic Framework 2014- 2019. National Planning Commission, under the Presidency	Priority 6.4: Decent employment through inclusive growth "...Government will continue to vigorously implement its BBBEE policy in order to broaden the base of black economic empowerment. The new Ministry responsible for small business development will focus on the changes required to achieve a marked increase in the growth of the small business sector, as well as to sustain existing small businesses, which must be one of the largest contributors to job creation..." page 21 BBBEE implementation strategies by the Department of Small Business Development. Changes being made on the policy to focus on growth of small business sector and to sustain existing businesses to create jobs. Priority 6.12: An efficient, effective and development-oriented public service "...important for small businesses that government pays its suppliers promptly (within 30 days). National Treasury and the Department of Planning, Monitoring and Evaluation have put in place a system to monitor the payment of suppliers by national and provincial departments..." Page 32 A plan and a commitment by all public service institutions to pay SMME's within 30 days of invoicing and on time.
		Priority 6.13: A comprehensive, responsive and sustainable social protection system "...Support will be provided to establish community-based structures including cooperatives..." Page 34

No	Policy/ Strategy/ Program/ Initiative	Objective/ Description
5	National Strategy for Sustainable Development and Action Plan (NSSD I), 2009-2014.	Priority 3: "Towards a green economy" – Goal number 2 (Implement and upscale green economy programmes) "..Encouraging investment in renewable energy on a scale sufficiently large to justify the localisation of competitive technologies, along with active support for local renewable technology manufacturing to present an opportunity for sustainable economic development and job creation..", page 25. The intervention to be implemented (clean energy and energy efficiency) makes reference to incentivising production of green industry and promotion of programmes that create green jobs. It calls for govt. to create platforms to encourage sustainable economic development by SMME's.
6	Framework for Environmental Fiscal Reform, 2006. National Treasury	Priority 4: "Building sustainable communities" – Goal number 3 (Improve the quality of housing and other structures to optimise resource efficiency (energy, water, building materials, etc.) "..Introduction of government procurement programmes that support LED. Supporting alternative business models such as cooperatives and community associations" page 29. Govt. makes a commitment to create procurement set-asides projects earmarked for SMME's and supporting community businesses e.g. cooperatives and associations. This policy does not mention any links towards SMME's.

No	Policy/ Strategy/ Program/ Initiative	Objective/ Description
7	Industrial Policy Action Plan (IPAP), 2015. Dept. Trade & Industry	IPAP 2015/16 was reviewed in keeping with and building upon previous iterations. It emphasises the following critical programmes to achieve a higher-impact industrial policy: Advanced manufacturing-driven industrialisation “...with a continued focus on key spill over sectors with stronger conditionalities for public sector support allied to strong stakeholder engagement, particularly with global OEMs in these sectors...” page 26. Emerging black industrial entrepreneurs “:this work also encompasses a strong commitment to support emerging black industrial entrepreneurs – as set out in summary further ahead in IPAP 2015” Page 26 The ‘regulatory burden’ and investment constraints: Red tape “...excessive red tape across regulatory agencies and all three spheres of government – manifested in a wide range of difficult forms and onerous licensing requirements - severely complicates the operating environment for business...” In order to start seriously reducing the regulatory burden, government is initiating a number of interventions to make doing business simpler. These include the ‘One Stop Investment Centres’ championed by the dti; the co-location of SMME support agencies by the Small Business Department; and speedy resolution of Strategic Environmental Assessments (SEAs) by the Department of Environmental Affairs. Transversal Interventions – Industrial financing Key action programme:- Black Industrialists Development Programme “...will be aimed at promoting industrialisation, sustainable economic growth and transformation through support of black-owned entities in the mainstream of South African manufacturing industry and related manufacturing service sectors” page 55. The Programme envisages implementing key measures such as access to finance, access to markets, skills development, standards, quality and productivity improvements by black manufacturing companies. Sectoral Interventions – Clothing, Textile, Leather and Footwear Key action programme:- Establishment of Centres of Leather and Footwear Entrepreneurship “...establish Centres of Leather and Footwear Entrepreneurship at Further Education and Training Colleges (FETCs) as Public- Private Partnership (PPPs) in collaboration with the Fibre Processing and Manufacturing Sector Education and Training Authority (PF&M SETA), the National Footwear and Leather Cluster, Vaal University of Technology and University of Pretoria” page 85. Targeted outcome is to increase a number of skilled entrepreneurs within the Leather and Footwear sector, to enhance the sector’s competitiveness. Sectoral Interventions – Agro-processing Key action programme:- Establishment of a pilot domestic agri-business hub “...agribusiness cluster includes shared facilities and services (e.g. transport, storage and packaging) that allows for the provision of common infrastructure facilities where Enterprises gain advantages through co-location. This will also entail building the processing factory which will allow the cluster to sell processed food into the local market...” page 95 Agribusiness cluster will stimulate the local economy, create employment, optimise agricultural potential and agro-processing by creating a central processing and marketing hub, supplied by out growers and supported by localised distribution hubs run through local pack-sheds in selected and approved sites within the project area.

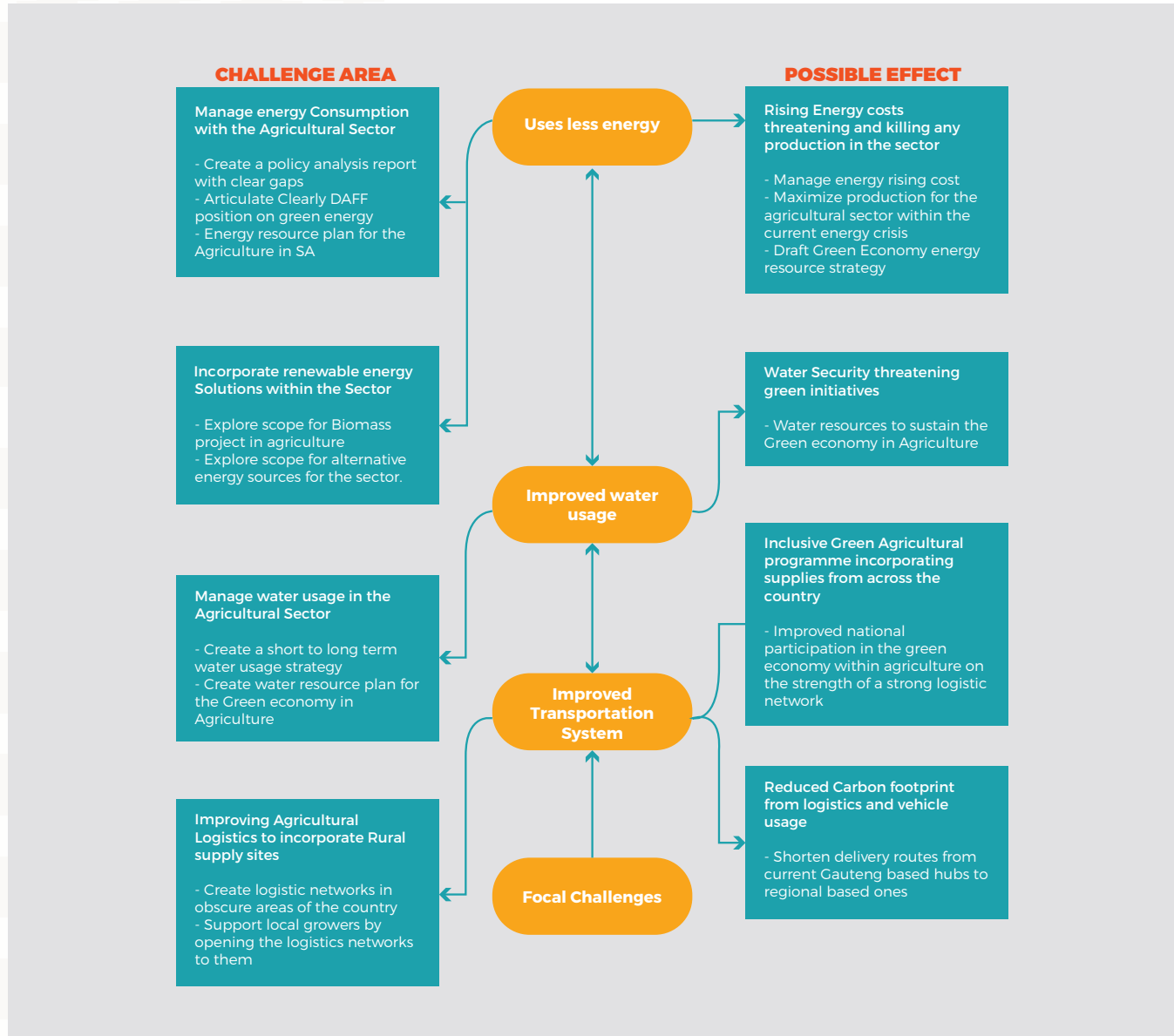
No	Policy/ Strategy/ Program/ Initiative	Objective/ Description
		Sectoral Interventions – Forestry, Timber, Paper, Pulp and Furniture - Key action programme:- Productivity improvement through technology upgrading “...programme is intended to assist small- and medium-scale sawmills to improve their productivity through technology upgrading.” page 103 Targeted outcome is to improve recovery rate and competitiveness of the sawmilling industry Sectoral Interventions – Forestry, Timber, Paper, Pulp and Furniture Key action programme:- Productivity improvement through technology upgrading “...programme is intended to assist small- and medium-scale sawmills to improve their productivity through technology upgrading.” page 103 Targeted outcome is to improve recovery rate and competitiveness of the sawmilling industry. Sectoral Interventions – Aerospace and Defence - Key action programme:- Broadening industry participation through a supplier development incentive scheme “...require critical support from a number of smaller suppliers, including SME machine shops, in order to deliver on their contracts and increase their output volumes to international OEMs.” page 145 Targeted outcome is the inclusion and integration of a representative and reliable supplier base which would otherwise not have had the opportunity to participate in the industry. Sectoral Interventions – Plastics, pharmaceuticals, chemicals and cosmetics Key action programme:- Development of a plastics production and innovation cluster. “...plastics conversion plants are generally small to medium-sized, family owned businesses with no or limited R&D activities, limited testing facilities and serious skills deficits..” page 106 Targeted outcome is a sustainable plastic cluster with access to markets. This will include: assisting unemployed learners to participate in accredited work programmes and acquire skills; and enhanced R&D to transform the training division into a value-added, high performance strategic partner to the industry.
8	New Growth Path (NGP): Framework, 2011. Dept. of Economic Development	Govt. made a commitment in 2011 of creating five million jobs by 2020. NGP developed job drivers to ensure implementation and achievement of that goal. Job driver 3: “Seizing the potential of new economies” – Strategy 3 (Technology innovations) “...Stronger programmes, institutions and systems to diffuse new technologies to SMEs and households...” page 31. Govt. hopes to achieve 300 000 direct jobs by 2020 to green the economy, with 80 000 in manufacturing and the rest in construction, operations and maintenance of new environmentally friendly infrastructure. Job driver 4: “Investing in social capital and public services” – (Investing to social economy) “...The social economy includes myriad not-for-profit institutions that provide goods and services, including co-operatives, non-governmental organisations (NGOs) and stokvels...” page 33. Govt. commits to providing comprehensive government support for social-economy initiatives, including assistance with marketing, bookkeeping, technological and financial services and training, based in part on a stronger co-operative support agency and possibly a training academy to achieve these targets. They further plan to develop linkages within the social economy to encourage learning and mutual support; work with union and community investment companies to develop a Charter with commitments to job creation; and increasing state procurement from and service delivery through organisations in the social economy. Job driver 5: “Spatial development” – (Rural development programmes) “...In addition, government must do more to support small-scale agriculture, including through community food gardens and marketing and service co-operatives as well as accessible banking facilities.” page 35. Government will step up its efforts to provide public infrastructure and housing in rural areas, both to lower the costs of economic activity and to foster sustainable communities.

No	Policy/ Strategy/ Program/ Initiative	Objective/ Description
		A development policy package for growth, decent work and equity: The microeconomic package The microeconomic package involves ten programmes to control inflationary pressures and inefficiencies combined with more proactive strategies to support an inclusive economy, social equity and regional development. Of all ten, only five have a specific focus to SME's: One: Active industrial policy (page 42) New economic developments around knowledge-intensive sectors and green technologies need new kinds of education and training, greater R&D support as well as the establishment of learning organisations in enterprises and state agencies Two: Rural development policy (page 43) An effective rural development strategy geared to improving livelihoods and employment on a large scale and specific measures Support for market and financial institutions, especially coops, that enable small producers to enter formal value chains and take advantage of economies of scale Three: Enterprise development: promoting small business and entrepreneurship; eliminating unnecessary red-tape (page 48) The New Growth Path will strengthen and consolidate initiatives to support small and micro enterprise, with a comprehensive strategy laid out by early 2011. This entire section is dedicated to SMME's. Four: Broad-based Black Economic Empowerment (BBBEE) (page 50) Government has adopted the position that black economic empowerment (BEE) should seek to empower all historically disadvantaged people rather than only a small group of black investors. This whole section is also dedicated to SMME's. Five: Technology policy (page 53) Adaptation and diffusion of technologies in targeted sectors to support employment creation and growth. Existing measures and institutions strengthened and scaled up to support: • Rural development • Small and micro enterprises and cooperatives • Expanded broadband access across the economy Resource drivers: A state owned bank "..Govt. commits to explore the possibility of establishing a state-owned bank that is able to provide services in rural areas and support the development of community and co-operative banking. Such a bank could build on the institutional structures provides by the PostBank. It would play a central role in encouraging more appropriate forms of financial institution to serve micro-enterprise as well as historically marginalised households and communities in the rural areas as well as the cities" page 61.

No	Policy/ Strategy/ Program/ Initiative	Objective/ Description
9	Ten Year Innovation Plan, 2008. Dept. of Science and Technology	The Grand Challenges: From Farmer to Pharma: life sciences and health “..there is tremendous yet untapped potential to develop the biotechnology industry. South Africa has the world's third largest biodiversity resource base, a solid foundation of human capital and a large store of indigenous knowledge, along with a strong industrial base ...” page 10 To provide support for start-up firms needs to be improved, to be conducting innovative, cutting-edge R&D. Science and Technology Across Governments: Public procurement and innovation
10	National Waste Management Strategy, 2011. Dept. of Environmental Affairs	Goal 3: Growing the contribution of the waste sector to the green economy “...to stimulate job creation and broaden participation by SMEs and marginalised communities in the waste sector. These objectives include creating decent work through formalising the role of waste pickers and expanding the role of SMEs and cooperatives in waste management....” page 27. “...government will provide financial and non-financial support to SMEs and cooperatives in the waste sector through Khula, the South African Micro-Finance Apex Fund and the IDCs small business fund. Government is considering merging these three agencies services to maximise administrative efficiency...” page 27

Appendix D:

Challenges Within the Drivers of the Green Economy in Agriculture



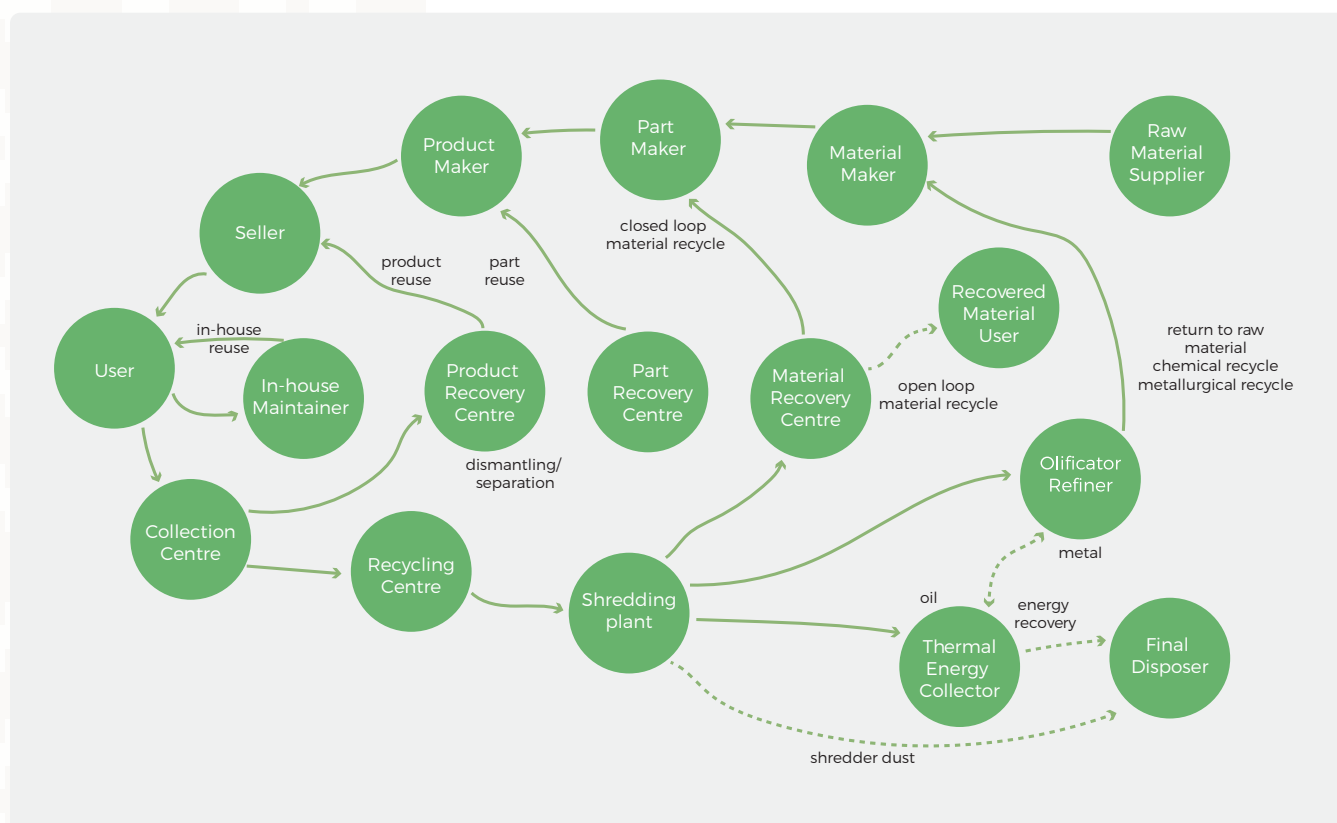
This challenge analysis identifies the negative aspects of an existing situation (centre column) and establishes the cause (left side headings) and effect (right side headings) relationships between the identified problems.

From the resulting “challenge-tree” we can establish that, for example, “if we fail to manage energy consumption within the agricultural sector” the resulting possible effect will be, “lowered production within the sector due to resulting high operational costs.”

The text under each heading identifies some options for addressing the issue raised in that heading.

An additional issue is land condition, management and degradation, e.g. alien invasive plants, soil erosion, and too frequent fires. For agricultural SMME development, the first step is for farmers to be able to produce sufficient healthy crops or livestock to access the market. A healthy environment provides essential services towards this.

Appendix E: Closed Loop Manufacturing

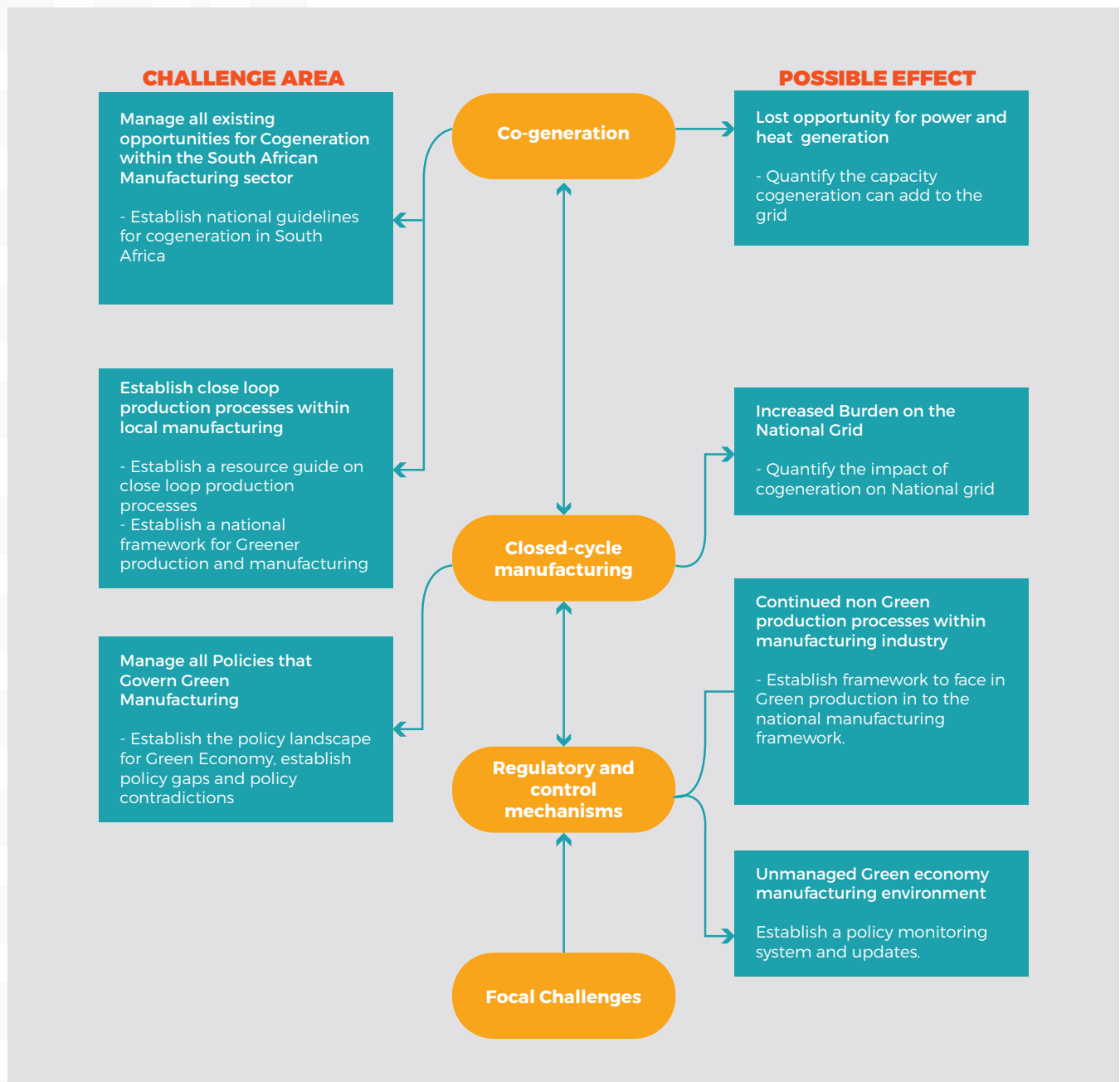


The concept of closed loop manufacturing is fairly new to the South African Manufacturing industry. This is in part because the incentives and costs associated with unsustainable waste management are less compelling than in many developed countries.

In the diagram, each orbit labelled in blue corresponds to a lifecycle option such as re-use, and recycling. A very simple case is the smallest, leftmost loop that denotes re-use at the household level. The larger loops towards the right entail more steps and stakeholders.

Appendix F:

Opportunities within Manufacturing Sector

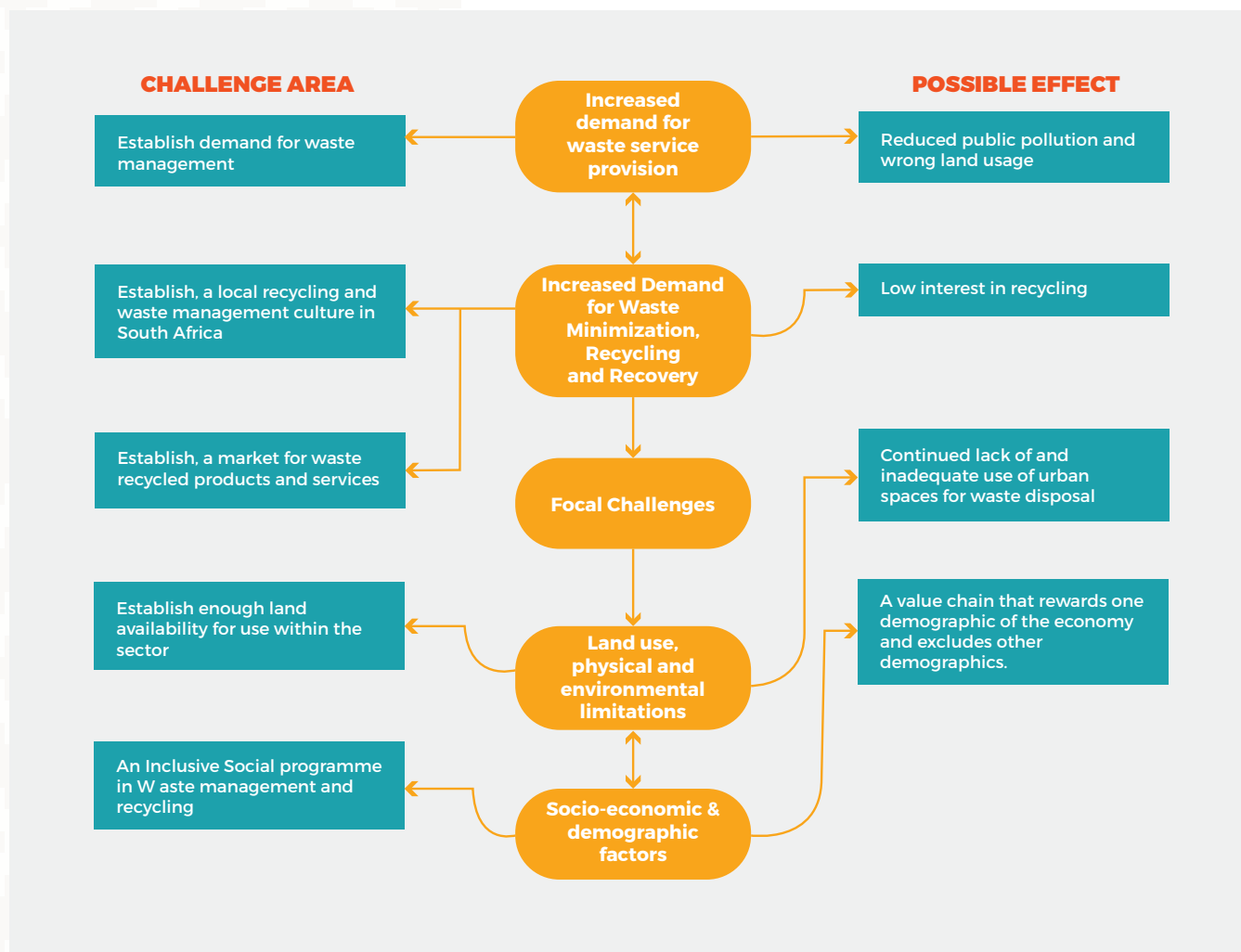


This challenge analysis identifies the negative aspects of an existing situation (centre column) and establishes the cause (left side headings) and effect (right side headings) relationships between the identified problems.

From the resulting “challenge-tree” we can establish that, for example, “if we fail to adopt co-generation” the resulting possible effect will be, “lost opportunity to augment power availability”. This will negatively affect manufacturing output in the current power-constrained situation in South Africa.

Appendix G:

Possible Activities within Waste Management



This challenge analysis identifies the negative aspects of an existing situation (centre column) and establishes the cause (left side headings) and effect (right side headings) relationships between the identified problems.

From the resulting "challenge-tree" we can establish that, using the last challenge for example, "if we do not take into account social and demographic factors" the resulting possible effect will be, "exclusion of some segments of society." This situation leads to lowered participation in sustainable waste management initiatives.

Appendix H:

Companies that Participated at the two Greencape Western Cape Industrial Symbiosis Programme Synergy Workshops

	Workshop 1	Workshop 2
1	ACA Threads	Amelia Jackson Industries
2	ACTOM	ArcelorMittal
3	Arcelor Mittal	Atlantis Foudries
4	Atlantis Foundries	Beekman Super Canopies
5	Cape Town Market	Cape Waste
6	Ceres Beverages	Chironchemistry
7	Closing the Loop	Chris Steytler Industries
8	Combo Timbers	Collotype Labels
9	Consol Glass	Creda
10	Creative Electronics	Distell
11	Eurochoc / HQ foods	EcoStruct
12	E-waste recycling	E-metals Cape
13	Fertplan	Extrupet
14	GlaxoSmithKline	Fabrinox
15	Green Diesel	Farmsecure
16	Group Five Pipe	Furntech
17	Impahla clothing	GUD Holdings
18	InTempo Trailer Manufacturers	John Thompson Boilers
19	LEDzShine	Just PCs
20	Lomotek Polymers	Kaytech Engineered Fabrics
21	LUNA Designs	Metnor Manufacturing
22	Nampak Tissue	Meyer and Ferreira Furniture
23	Performance Brands	Mielie
24	Peter Blond & Associates	Mpact Corrugated
25	Pick n Pay	Pallet Supply
26	Polyoak Packaging	Peninsula Drums
27	Polyp plank	Pepcor
28	Manufacturing	Kansai Plascon
29	Premier Foods	Plastic Timber
30	Reliance Compost	PPC Cement
31	Rhodes Food Group	Qualipak
32	Robor	re-sa
33	SABMiller	Sandblast Plastic Injection Moulding
34	Saint-Gobain Gyproc	Skoon Bio-Diesel
35	Sasko Bakeries	Spier
36	Seamless Flooring Systems	SYZGY Renewables
37	Tuffy Bags	T.L.M Group
38	Wasteman	UVP Group (United Foils)
39	Western Granite	V & A Waterfront
40	Woodbender	Wastemart
41	Woolworths	ZTLOrganics

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