REPUBLIC OF SOUTH AFRICA

MILLENNIUM DEVELOPMENT GOALS

Ensure Environmental Sustainability

The South Africa I know, the Home I understand

Published by
Statistics South Africa, Private Bag X44, Pretoria 0001
Website: www.statssa.gov.za

Stats SA Library Cataloguing-in-Publication (CIP) Data

MILLENNIUM DEVELOPMENT GOALS- Goal 7: Ensure environmental sustainability / Statistics South Africa- Pretoria: Statistics South Africa, 2013

86 pp

ISBN: 978-0-621-42338-9

MILLENNIUM DEVELOPMENT GOALS

Goal 7: Ensure Environmental Sustainability

October 2013

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ACRONYMS

BAU	Business As Usual
BCM	Bromochloromethane
CBD	Convention on Biological Diversity
COPX	10th Conference of Parties
CFC	chlorofluorocarbon
CO2	carbon dioxide
CSOs	Civil Society Organisations
DAFF	Department of Agriculture, Forestry and Fisheries
DBSA	Development Bank of South Africa
DEA	Department of Environmental Affairs
DHS	Department of Human Settlements
DMIs	Domesticated Indicators
DoE	Department of Energy
DWA	Department of Water Affairs
FBE	Free Basic Electricity
FBAE	Free Basic Alternative Energy
FAO	Food and Agriculture Organizations
GCT	Green Cities and Towns
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GHS	General Household Survey
GWC	Growth Without Constraints
HDA	Housing Development Agency
HCFC	hydrochlorofluorocarbons
IBT	Inclined Block Tariff
IEA	International Energy Agency
INEP	Integrated National Electrification Programme
IPAP	Industrial Policy Action Plan
ITAC	International Trade Administration Commission of South Africa
IUCN	International Union for Conservation of Nature
JPOI	Johannesburg Plan of Implementation
KZN	KwaZulu-Natal
LCE	Low Carbon Economy
LTMS	Long-Term Emission Scenarios
LULUCF	land-use, land-use change and forestry
MDGs	Millennium Development Goals
MTSF	Medium-Term Strategic Framework
NAMA	Nationally Appropriate Mitigation Actions
NBF	National Biodiversity Framework
NBSAP	National Biodiversity Strategy and Action-plan
NCC	National Coordinating Committee
NDP	National Development Plan
NEMA	National Environmental Management Act
NLC	National Land Cover
NPAES	National Protected Area Expansion Strategy
NPC	National Planning Commission

NRM	Environmental and Natural Resource Management
NSSD	National Strategy for Sustainable Development
ODP	Ozone Depletion Potential
ODSs	Ozone Depleting Substances
PMG	Parliamentary Monitoring Group
PPD	Peak, Plateau and Decline
PPP	Purchasing Power Parity
R&D	Research and Development
RDP	Reconstruction and Development Programme
RDT	Report Drafting Team
SANBI	South African National Biodiversity Institute
SANGOCO	South African National NGO Coalition
STATS SA	Statistics South Africa
SWG	Sectoral Working Group
UN	United Nations
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
WHO	World Health Organization

STATUS AT A GLANCE

Goal 7: Ensure Environmental Sustainability						
Indicator	**1994 baseline (or nearest year)**	**2010 Status (or neares t year)**	**Current status (2013 or nearest year)**	**2015 Target**	**Target achievabil ity**	**Indicator type**
Target 7 A: Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources						
Proportion of land area covered by forest[1]	No data	No data	No data	No Target	NA	MDG
Proportion of land area covered by (%):						
• **Natural Forests**	0.4 (2005)	No data	No data	NA	NA	Domesticated
• **Savannah Woodlands**	32.62 (2005)	No data	No data	NA		Domesticated
• **Albany Thicket**	2.37 (2005)	No data	No data	NA		Domesticated
• **Commercial Plantations**	1.8 (2005)	1.3 (2010)	No data	NA		Domesticated
Proportion of Natural Habitat (%):						
• **Urban**	0.85 (1994)	1.98 (2005)	No data	No Target	NA	Domesticated
• **Forestry & Plantations**	1.16 (1994)	1.62 (2005)	No data	No Target		Domesticated
• **Mining and Quarries**	0.13 (1994)	0.17 (2005)	No data	No Target		Domesticated
• **Cultivation/ Agriculture**	12.43 (1994)	11.92 (2005)	No data	No Target		Domesticated
• **Natural**	85.44 (1994)	84.31 (20005)	No data	No Target		Domesticated
Carbon Dioxide (CO_2) emissions:						
• **Total**	258 (1994)	330 (2005)	369 (2009)	Reductio n by 34% below business as usual (2020)	**Likely**[2]	MDG
• **CO_2 emissions per capita**	6.75 (1994)	7.00 (2005)	7.49 (2009)			
• **CO_2 emissions per $1 GDP (PPP)**	0.79 (1994)	0.71 (2005)	0.70 (2009)			

[1] No data is available for this indicator and the indicator will not be reported on for this current MDG report.
[2] Achievement indicated as possible are based on government efforts in terms of strategies and programmes put in place, which are dependent on other conditions such as funding. Details are presented in sub-section 4.2.1of the MDG 7 Goal report

Goal 7: Ensure Environmental Sustainability						
Indicator	**1994 baseline (or nearest year)**	**2010 Status (or neares t year)**	**Current status (2013 or nearest year)**	**2015 Target**	**Target achievabil ity**	**Indicator type**
Consumption of ozone-depleting substances[3] • **HCFC**	No data	222.6 (2006)	400.1 (2010)	Freeze by 2013 and phase out by 2015	**Likely**	Domesticated
• **BCM**	No data	0 (2006)	-6.9 (2010)		**Achieved**	
• **MeBr**	No data	330 (2006)	0 (2010)	Phase out by 2015	**Achieved**	
Target 7B: Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss						
Proportion of total water resources used[4]	No data	No data	No data	No Target		MDG
Proportion of terrestrial areas protected (% of total)[5]	5.18 (1994)	6.20 (2010)	6.71 (2012)	17 (2020)	**Unlikely**	MDG
Proportion of marine areas protected (% of total)	No data	6.54 (2010)	7.34 (2012)	10 (2020)	**Likely**	MDG
Proportion of species threatened with extinction (% of total):[6] • **Plants**	No data	No data	12 (2011)	Reduce loss	Not Clear[7]	MDG
• **Inland mammals**	20 (2004)	No data	No data	Reduce loss		
• **Birds**	14.5 (2000)	No data	No data	Reduce loss		
• **Amphibians**	No data	No data	14 (2010)	Reduce loss		
• **Reptiles**	No data	No data	9 (2011)	Reduce loss		
• **Freshwater fish**	No data	No data	21	Reduce loss		

[3] This was reported as an MDG in 2010. However, for the current reporting cycle, the indicator is classified as domesticated since the method of computation by South Africa does not comply with what is prescribed by the UN. In particular, the UN prescribes the method of computation to be: ODS (Imports) + ODS (Local production) – ODS (Exports). For South Africa the estimate on ODS reflects imports only.

[4] No data is available for this indicator and the indicator will not be reported on for this current MDG report.

[5] Include conservation areas and privately owned nature reserves not reported here as data is not available at present.

[6] The indicator was not reported in 2010 and the disaggregation did not apply

[7] Achievement of 7.7 is not clear, since it is based on two targets at two different periods 2010 and 2020, but yet data provided don't give a trend over time to see if the number or level of threatened species are declining or not.

Goal 7: Ensure Environmental Sustainability						
Indicator	**1994 baseline (or nearest year)**	**2010 Status (or neares t year)**	**Current status (2013 or nearest year)**	**2015 Target**	**Target achievabil ity**	**Indicator type**
• **Butterflies**	No data	No data	(2007) 7 (2011)	Reduce loss		
Target 7C: Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation						
Proportion of population using an improved drinking water source (%)	76.6 (1996)	84.4 (2001)	90.8 (2011)	88.3 (2015)	**Achieved**	MDG
Stability of water supply[8] (%)	23.6 (2009)	25.5 (2010)	23 (2011)	No Target	NA	Domesticated
Proportion of population using an improved sanitation facility (%)	49.3 (1996)	53.6 (2001)	66.5 (2011)	74.65	**Likely[9]**	MDG
Proportion of households with access to electricity (%)	30 (1994)	76.8 (2000)	82.8 (2011)	by 2025 to achieve 90% grid technol ogy and 10% non-grid technol ogy	NA	Domesticated

[8] This is defined as a household having uninterrupted flowing water for at least eleven and half months which forms part of South Africa definition of a water service

[9] This is defined as a household having unlimited flowing water for at least eleven and a halve months which forms part of the South African definition of a water service. Of the regional water supply schemes (Census and GHS data refer to access to a water source) which supplies 80% of the domestic water; 77% of these schemes provided a water service (stability of supply). DWA and Stats SA are in partnership to develop a Monitoring and Evaluation system to track this indicator. Its importance resides in 2015. The data used does not include access to pit latrines due to the fact that in 1996 the Census made no distinction between access to a ventilated improved pit latrine and a pit latrine. It is not possible with any reasonable degree of confidence to estimate the number of pit latrines that were provided with a slab (or a superstructure), hence this data was not included as part of percentage to determine access to sanitation. As a consequence all the data provided in this report does not include access to a pit latrine. In the 2011 Census it was recorded that 20.36% of people had access to a pit latrine and from anecdotal evidence most of these had a superstructure. There is a high probability that South Africa has achieved the MDG target for this indicator but according to the data used, which errs on the conservative side, it needs to be recorded as likely to meet the target.

Goal 7: Ensure Environmental Sustainability						
Indicator	**1994 baseline (or nearest year)**	**2010 Status (or neares t year)**	**Current status (2013 or nearest year)**	**2015 Target**	**Target achievabil ity**	**Indicator type**
Proportion of population using solid fuels as primary source of energy: Cooking	22.9 (2000)	18.2 (2005	14.4 (2011)	NA	NA	Domesticated
Proportion of population using solid fuels as primary source of energy: Heating	29.1 (2000)	23.9 (2005)	20.8 (2011)	NA	NA	Domesticated
Target 7D: By 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers[10]						
Proportion of urban population living in slums	No data	No data	No data	NA	NA	MDG
Percentage living in Informal Settlements (%): • **Households**	9.9 (2001)	No data	6.0 (2011)	No Target	NA	Domesticated
• **Population**	7.9 (2001)	No data	7.6 (2011)	No Target	NA	Domesticated

INTRODUCTION

Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs (WCED, 1987). The primary objective of sustainable development is to reduce the absolute poverty of the world's poor through providing lasting and secure livelihoods that minimise resource depletion, environmental degradation, cultural disruption and social instability. Since the Brundtland Commission Report in 1987 (WCED, 1987), the 2000 United Nations (UN) Millennium

[10] Although the MDG globally refers to "slum dwellers", in the South African context slums do not exist and those areas are referred to as "informal settlements".

Development Goals (MDGS) (particularly MDG 1 and MDG 711, which articulate poverty eradication and environmental protection respectively) and the 2012 Rio+20 conference on sustainable development, the concept of sustainability has been gaining increasing popularity across various sectors. The challenges of ensuring environmentally sustainable economic and human development paths remain (Wlokas et al., 2012). Although these problems are more pressing than ever, they remain unresolved.

South Africa is an emerging economy and, while significant macroeconomic development progress has been made over the past 19 years, there are still significant development challenges that need to be addressed in a sustainable development manner, such as poverty, inequality and unemployment. On the other hand, the South African economy is highly energy-intensive and its per capita carbon emissions rank among the highest in the world, like those of a number of developed countries.12 The South African government recognises the need for the economy to "decouple" from the environment, breaking the links between economic activity, environmental degradation and carbon-intensive energy consumption (NPC, 2012). This entails moving away from past unjust exploitation of resources, which excluded many communities from economic opportunities and benefits while degrading the environment. MDG 7 is unique in that it speaks to the natural environment and to delivery of services. The environment is a balancing act between development in a young democracy and finding that balance between growth and managed environmental loss. Service delivery is different and speaks to developing a built environment that addresses meeting basic human needs in harmony with a sustainable environment.

South Africa's 2010 MDG report showed that the timetable for implementing some of the targeted indicators will not be met in South Africa at the current pace. The report argued that to reverse the situation greater effort is required to deal with the complex environmental issues to achieve the broader sustainability goals (Statistics South Africa, 2010). This MDG report reviews progress made towards achieving MDG 7 in South Africa identifies key challenges faced in the achievement of MDG 7 and draws key lessons learnt for preparation of the post-2015 development agenda. The 2013 MDG 7 report further suggests potential policies and strategies for fast tracking the achievement of the goal targets and indicators. MDG 7 focuses on ensuring environmental sustainability and its targets and indicators are reviewed within the context of other local, national and global development initiatives of South Africa.

Objectives

The main objective of this report is to document progress made towards achieving MDG 7 within the context of other national indicators and targets in line with global standards and principles as stipulated in other short- and long-term development initiatives of South Africa.

[11] MDG 7 is one of the eight MDGs to be achieved by 2015 that respond to the world's main development challenges. The MDGs are drawn from the actions and targets stated in the Millennium Declaration that was adopted by 189 nations and signed by 147 heads of state and government during the United Nations Millennium Summit in September 2000.

[12] South Africa is ranked 42nd largest emitter per capita and is likely to face globally imposed emissions constraints in the near future (NPC, 2012).

The specific objectives are to:

1. Examine progress made to date on MDG 7 targets and indicators on the basis of data availability;
2. Ensure representation of all stakeholders' contribution to the report;
3. Review the key challenges to the achievement of MDG 7 in South Africa;
4. Suggest possible policies and strategies to fast track the achievement of MDG 7; and
5. Provide lessons learnt and strategies for post 2015 development agenda

Methodology

The data used to review progress was provided by the Sectoral Working Group 5 (SWG 5), which was tasked with collecting and collating data on MDG 7 targets and indicators. SWG 5 ensured that the data-gathering process was widely consultative. SWG 5 consists of representatives from: the Department of Environmental Affairs (DEA); Department of Water Affairs (DWA); Department of Agriculture, Forestry and Fisheries (DAFF); Department of Energy (DoE); Department of Human Settlements (DHS); South African National Biodiversity Institute (SANBI); South African National NGO Coalition (SANGOCO); Mpumalanga Leadership Foundation; and Statistics South Africa (Stats SA). Stats SA provided data on some of the indicators including facilitating and providing guidance on the process of computing, measuring, and sourcing data for MDG 7 indicators from its external member institutions. The data used to review progress on MDG 7 was provided and agreed upon by all the SWG 5 member institutions and there have been consultations between SWG 5 and the authors.

The MDGs and targets emanate from the Millennium Declaration, which was signed by 189 countries, including 147 heads of state and government, in September 2000[13] and from further agreement by member states at the 2005 World Summit (Resolution adopted by the General Assembly – A/RES/60/1).[14] The goals and targets represent a partnership between the developed countries and the developing countries "to create an environment – at the national and global levels alike – which is conducive to development and the elimination of poverty" (UNECA/AUC/AfDB/UNDP-RBA, 2010; 2011). **Error! Reference source not found.** below summarises MDG 7 targets and indicators from the Millennium Declaration.

Table 1: Goal 7 – Ensure environmental sustainability targets and indicators

Goals and Targets (from the Millennium Declaration)	Indicators for Monitoring Progress

[13] http://www.un.org/millennium/declaration/ares552e.htm. Accessed 3 June 2013.
[14] http://www.un.org/Docs/journal/asp/ws.asp?m=A/RES/60/1. Accessed 3 June 2013.

Target 7A: Integrate the principles of sustainable development into country policies and programs and reverse the loss of environmental resources	*7.1 Proportion of land area covered by forest* 7.2 CO_2 emissions: total, per capita & per $1 GDP (PPP) *7.3 Consumption of ozone-depleting substances*[15] 7.4 Proportion of fish stocks within safe biological limits *7.5 Proportion of total water resources used*
Target 7B: Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss	7.6 Proportion of terrestrial and marine areas protected 7.7 Proportion of species threatened with extinction
Target 7C: Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation	7.8 Proportion of population using an improved drinking water source 7.9 Proportion of population using an improved sanitation facility
Target 7D: By 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers	7.10 Proportion of urban population living in slums[16]

The MDG and domesticated indicators (DMIs) reviewed in this report are summarised in Table 2 below.

Table 2: Goal 7 – MDG and domesticated indicators

MDG Indicators	Domesticated Indicators
1. *7.1 Proportion of land area covered by forest* 2. 7.2 CO_2 emissions, total, per capita & per $1 GDP (PPP) 3. *7.3 Consumption of ozone-depleting substances* 4. 7.4 Proportion of fish stocks within safe biological limits 5. *7.5 Proportion of total water resources used* 6. 7.6 Proportion of terrestrial and marine areas protected 7. 7.7 Proportion of species threatened with extinction 8. 7.8 Proportion of population using an improved drinking water source 9. 7.9 Proportion of population using an improved sanitation facility 10. 7.10 Proportion of urban population living in slums	1. DMI 1: Proportion of Natural Habitat 2. DMI 2: Ecosystem Threat Status 3. *DMI 3: Number of Legally Designated landfill sites* 4. DMI 4: Percentage of permitted landfill sites (Decrease in number of unlicensed waste disposal sites) 5. *DMI 5: Proportion of area protected (Conservation areas)* 6. DMI 6: Proportion of land area covered by Natural Forests 7. DMI 7: Proportion of land area covered by Savannah Woodlands 8. DMI 8: Proportion of land area covered by Albany Thicket 9. DMI 9: Proportion of land area covered by Commercial Plantations 10. DMI 10: Proportion of households with access to electricity 11. DMI 11: Proportion of population using solid

[15] South Africa will not be reporting this as an MDG indicator but rather a DMI as the values that are reported on reflect the difference in the recommended import and export amounts rather than absolute consumption.

[16] The actual proportion of people living in slums is measured by a proxy, represented by the urban population living in households with at least one of the four characteristics: (a) lack of access to improved water supply; (b) lack of access to improved sanitation; (c) overcrowding (three or more people per room); and (d) dwellings made of non-durable material.

	fuels as primary source of energy: Cooking 12. DMI 12: Proportion of population using solid fuels as primary source of energy: Heating 13. DMI 13: Stability of water supply 14. DMI 14: Consumption of ozone-depleting substances: HCFC 15. DMI 15: Consumption of ozone-depleting substances: BCM 16. DMI 16 Consumption of ozone-depleting substances: MeBr

To interpret the results from the analyses of the data, the Report Drafting Team (RDT) consulted relevant documents from various sources, including government departments, other government agencies, research institutions, National Development Plan (NDP), Integrated Resources Plan (IRP), Outcome Based Approach from the Presidency and Civil Society Organisations (CSOs). The process of writing the MDG 7 country report included presenting trends of key indicators at a methodological workshop and interactions with the SWG 5 secretariat. The draft report was presented and discussed at a broader stakeholder at the validation workshop and presented to the National Coordinating Committee (NCC) and SWGs. Comments received from the various stakeholders' fora and the NCC were integrated into the final report.

SOUTH AFRICA POLICY DEVELOPMENTS IN CONTEXT OF MDG 7

Ensuring environmental sustainability is the cornerstone of efforts to achieve sustainable development and poverty alleviation and failure to achieve biodiversity stability undermines social and economic development efforts (UNECA/AUC/AfDB/UNDP-RBA, 2010; 2011; AUC, UNECA, AfDB and UNDP, 2012). The South African government embraces the urgent need for implementing inclusive sustainable development initiatives that address national challenges such as poverty, inequality and unemployment (DBSA, 2011). South Africa has adopted various initiatives aimed at promoting sustainable development such as the Millennium Declaration, Johannesburg Plan of Implementation and the South African Outcomes Based Approach adopted by cabinet in January 2010 (DEA, 2011c).

Figure 1 provides the broad background to sustainability policy development for South Africa. Section 24(b) of South Africa's 1996 Constitution commits the state to "secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development". Paragraph 162 of the World Summit on Sustainable Development's 2002 Johannesburg Plan of Implementation (JPOI) commits countries to "…take steps to make progress in the formulation and elaboration of national strategies for sustainable development…" (WSSD, 2003, p. 59). The JPOI identifies sustainability effects and outcomes in the form of implementation plans, which promote the integration of the three components of sustainable development – economic development, social development and environmental protection. Plans relevant to the South Africa context include:

1. Poverty eradication
2. Changing unsustainable patterns of consumption and production

3. Protecting and managing the natural resources base of economic and social development
4. Sustainable development in a globalising world
5. Health and sustainable development
6. Sustainable development in Africa
7. Means of implementation
8. Institutional framework for sustainable development

In 2008, the South African Cabinet approved the National Framework for Sustainable Development and the National Strategy for Sustainable Development (NSSD) in 2011. The 2012 Rio+20 conference's theme was Sustainable Development in the context of Green Economy and Poverty eradication. In 2010, the South African government agreed on 12 outcomes (the Outcomes Based Approach), which outline the main strategic priorities of government between 2010 and 2014. Outcome 10 focuses specifically on "Environmental Assets" and the protection and continual enhancement of the country's natural resources (Presidency[17]). The outcome consists of four outputs with 18 sub-outputs and 41 indicators. The four main outputs outlined under Outcome 10 are:

1. Output 1: Enhanced quality and quantity of water resources
2. Output 2: Reduced greenhouse gas (GHG) emissions, climate change and improved air/atmospheric quality
3. Output 3: Sustainable environmental management
4. Output 4: Biodiversity protected
5. National Strategy for Sustainable Development (NSSD)

The Environmental Sector Plan's vision, "A prosperous and equitable society living in harmony with our natural resources", is informed by the human and environmental rights enshrined in the Constitution, National Environmental Management Act (NEMA), priorities captured in the MDGs, JPOI, and National Strategy for Sustainable Development (NSSD) and other key government socio-economic policies (DEA, 2012).

Figure 1: Background to sustainable development in South Africa

[17] The Presidency at: www.thepresidency.gov.za/pebble.asp?relid=24463

Source: Adapted from DEA (2011)

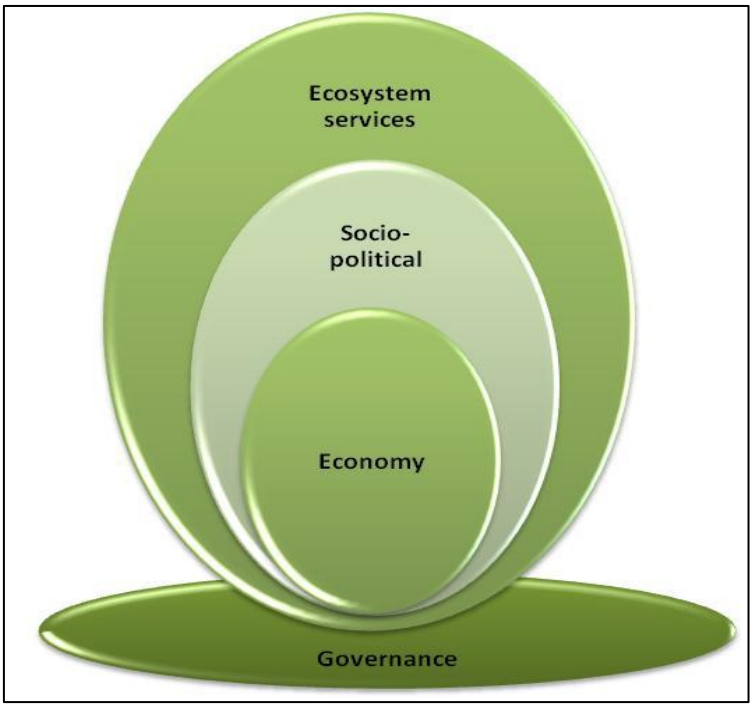
Recent national policies and plans emphasise the need to ensure that the country follows a sustainable development trajectory. Examples include: South Africa framework for responding to economic crisis; 2009-2014 Medium-Term Strategic Framework (MTSF) and its associated Outcomes; National Green Economy Summit Report; Green Economy Accord; Long-Term Mitigation Strategy; New Growth Path; Industrial Policy Action Plan (IPAP-2); National Strategy for Sustainable Development; National Climate Change Policy; National Development Plan – Vision 2030; Ten Year Innovation Plan; Integrated Resource Plan 2010 and Integrated Energy Plan; Environmental Fiscal Instruments (e.g. carbon tax); and National Skills Development Strategy 3; Towards an Anti-Poverty Strategy for South Africa 2008.

To steer the economy onto a green and sustainable development path, South Africa has adopted a systems approach to sustainability. The systems approach (Figure 2) views the economic, socio-political & morality and ecosystem services as embedded within each other, and integrated through the governance system that holds all the other systems together within a legitimate regulatory framework (DEA, 2011). South Africa's sustainable development vision as outlined in the NSSD 2011 – 2014 is: "South Africa aspires to be a sustainable, economically prosperous and self-reliant nation state that safeguards its democracy by meeting the fundamental human needs of its people, by managing its limited ecological resources responsibly for current and future generations, and by advancing efficient and effective integrated planning and governance through national, regional and global collaboration" (DEA, 2011, p. 2). In addition, the National Strategy for Sustainable Development identified five main sustainable development priorities and objectives (DEA, 2011):

1. Enhancing Systems for Integrated Planning and Implementation
    (a) Governance and institutional structures and mechanisms
    (b) Monitoring and reporting

2. Sustaining Our Ecosystems and Using Natural Resources Efficiently
    (a) Environmental assets and natural resources
3. Towards a Green Economy
    (a) A just transition towards a resource efficient, low carbon and pro-employment growth path
4. Building Sustainable Communities
    (a) Changing the attitudes and behaviour
    (b) Building self-sufficient communities
5. Responding Effectively to Climate Change
    (a) Stabilisation of GHG concentrations
    (b) Adapt to and manage unavoidable impacts

Figure 2: South Africa's systems approach to sustainability



Source: DEA (2011)

The policies provide the overarching national framework and enabling environment for advancing the concept of sustainable growth and achievement of MDG 7 targets in South Africa. Furthermore, the policies and plans acknowledge that the country's economic growth and development path is too resource-intensive and that this needs to change. Generally, policy developments have witnessed an emerging trend in South Africa's national policy discourse, which calls for more responsible use of natural resources. The South African government recognises the current natural resource constraints and ecosystem pressures and the need to transition into sustainable consumption and production patterns, and greener economic growth trajectories (DBSA, 2011). However, addressing the tradeoffs associated with the transition to a greener and more environmentally sustainable economy requires careful design and sequencing of decisions to ensure that the decline of legacy sectors (e.g. coal-fired electricity generation) is balanced by concurrent growth in green economy sectors (NPC, 2012; IRP, 2010).

PROGRESS IN ACHIEVING MDG 7 INDICATORS

Using 1994 as the baseline year where data were available, reporting was done for the years 2000, 2005 and 2010[18]. In cases where data for 1994 was not available, the earliest year from which data was available was used as the base year for that indicator. Therefore, the analysis of MDG 7 targets and indicators is based on these periods, including progress beyond 2010 to date for indicators where data is available.

The first part of the analysis focuses on MDG indicators. DMIs are analysed in Section 4.2.

[18] 2000 was selected as the year when countries signed and agreed to the United Nations MDGs, 2005 and 2010 were selected as the years when South Africa reported on MDGs.

Table 3: MDG 7 indicators and targets: facts and findings

MDG Goal 7: Ensure Environmental Sustainability – MDG Indicators and Targets: Facts and Findings							
Target 7A: Integrate the principles of sustainable development into country policies and programs and reverse the loss of environmental resources							
Original Indicator for Monitoring Progress	**Goals & Targets (date when adopted)**	**1994 Baseline (or closest)**	**2000**	**2005**	**Current Status 2013 (latest year of data)**	**Target Achievability**	**Indicator Type**
7.1 Proportion of land area covered by forest[19]	Not applicable	No data	No data	No data	No data	Not applicable	MDG
7.2.1 Carbon Dioxide (CO_2) emissions: Total	The target is to reduce CO_2 emissions by 34% from "business as usual" by 2020 (2009)	258	298	330	369 (2009)	Possible[20]	MDG
7.2.2 CO_2 emissions per capita		6.75	6.78	7.00	7.49 (2009)		
7.2.3 CO_2 emissions per $1 GDP (PPP)		0.79	0.77	0.71	0.70 (2009)		
7.5 Proportion of total water resources used[21]	Not Applicable	No data	No data	No data	No data	Not Applicable	MDG
Target 7B: Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss							
Original Indicator for Monitoring Progress	**Nationally Adopted Goals & Targets (date when adopted)**	**1994 Baseline (or closest)**	**2000**	**2005**	**Current Status (latest year of data)**	**Target Achievability**	**Indicator Type**
7.6.1 Proportion of terrestrial areas protected (% of total)[22]	Have at least 17% of terrestrial and inland water areas protected by 2020 (2011)[23]	5.18	No data	No data	6.71 (2012)	Unlikely	

[19] No data is available for this indicator and the indicator will not be reported on for this current MDG report.
[20] Achievement indicated as possible are based on government efforts in terms of strategies and programmes put in place, which are dependent on other conditions such as funding. Details are presented in sub-section 4.2.1
[21] No data is available for this indicator and the indicator will not be reported on for this current MDG report.
[22] Include conservation areas and privately owned nature reserves not reported here as data is not available at present.
[23] UNEP/CBD/COP/10/27 (2011)

7.6.2 Proportion of marine areas protected (% of total)	Have at least 10% of marine areas protected by 2020 (2011)	No data	No data	No data	7.34 (2012)	Possible	MDG
7.7 Proportion of species threatened with extinction (% of total)	South Africa's National Biodiversity Strategy and Action-plan and The United Nations Convention on Biological Diversity set the target to, by 2010, restore, maintain or reduce the decline of populations of species of selected taxonomic groups and improve the status of threatened species [CBD TARGET 2.1 & 2.2]. A further target is set that, by 2020, there should be no decline in the status of threatened species					Not Clear[24]	MDG
Plants		No data	No data	No data	12 (2011)		
Inland mammals		No data	No data	20 (2004)	No data		
Birds		No data	14.5 (2000)	No data	No data		
Amphibians		No data	No data	No data	14 (2010)		
Reptiles		No data	No data	No data	9 (2011)		
Freshwater fish		No data	No data	No data	21 (2007)		
Butterflies		No data	No data	No data	7 (2011)		
Target 7C: Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation							
Original Indicator for Monitoring Progress	**Nationally Adopted Goals & Targets (date when adopted)**	**1994 Baseline (or closest)**	**2000**	**2005**	**Current Status (latest year of data)**	**Target Achievability**	**Indicator Type**
7.8 Proportion of population using an improved drinking water source (%)	MDG target was to address and resolve all water backlogs, and achieve 88.3% coverage of water access for all South Africans by 2015 (2000)	76.6 (1996)	84.4 (2001)	88.4	89.4 (2011)	Achieved	MDG

[24] Achievement of 7.7 is not clear, since it is based on two targets at two different periods 2010 and 2020, but yet data provided don't give a trend over time to see if the number or level of threatened species are declining or not.

	National target was set to achieve 100% coverage of water access for all South Africans by 2014 (2009)[25]						
7.9 Proportion of population using an improved sanitation facility (%)	MDG target was to achieve 77.05 access to improved sanitation facilities for all South Africans by 2015 (2000) National target was to achieve 100% access to improved sanitation facilities for all South Africans by 2014 (2009)	No data	54.1 (2002)	60.6	71.9	Likely[26]	MDG
Target 7D: By 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers[27]							
Original Indicator for Monitoring Progress	**Nationally Adopted Goals & Targets (date when adopted)**	**1994 Baseline (or closest)**	**2002**	**2005**	**Current Status (latest year of data)**	**Target Achievability**	**Indicator Type**
7.10 Proportion of urban population living in slums[28]	Improve the lives of 400 000 households living in informal settlements by 2014 (2009)	No data	52 383 (2010/11)	67 130 (2011/12)	22 460 (20120/13)	Unlikely[29]	Domestic

Source: Constructed from data provided in graphs. Key for MDG 2010 report is used to indicate level of achievement where possible.

[25] The South African target was to achieve 100% access by 2014 and this is not likely to be achieved owing to infrastructure and capacity constraints.
[26] Using the two data sets reflect different levels of achievement due to the disparity between the data sets. While the Census data show that it is not feasible to achieve the target of 77%, the GHS data of 71.9% in 2011 show that achievement is likely. See table on summaries of MDG in Executive Summary and conclusions for details.
[27] Although the MDG globally refers to "slum dwellers", in the South African context slums do not exist and those areas are referred to as "informal settlements".
[28] The actual proportion of people that live in slums is measured by a proxy, represented by the urban population living in households with at least one of the four characteristics: (a) lack of access to improved water supply; (b) lack of access to improved sanitation; (c) overcrowding (three or more people per room); and (d) dwellings made of non-durable material.
[29] Unlikely to achieve the target due to capacity constraints at municipal levels (DPME, 2012).

Target 7A: Integrate the principles of sustainable development into country policies and programs and reverse the loss of environmental resources

Indicator 7.2: CO2 emissions – total, per capita, and per $1 GDP (PPP)

Target	Definition
34% reduction from "business as usual" by 2020[30]	**MDG indicator 7.2.1: Carbon dioxide emissions: thousand metric tons** Estimates of total carbon dioxide (CO_2) emissions include anthropogenic emissions, less removal by sinks, of CO_2. The term "total" implies that emissions from all national activities are considered. The typical sectors for which CO_2 emissions/removals are estimated are energy, industrial processes, agriculture, waste, and the sector of land use, land-use change and forestry (LULUCF). National reporting to the United Nations Framework Convention on Climate Change (UNFCCC) that follows the Intergovernmental Panel on Climate Change guidelines is based on national emission inventories and covers all sources of anthropogenic CO_2 emissions as well as carbon sinks (such as forests). CO_2 emissions/removals by LULUCF are often known with much less certainty than emissions from the other sectors, or emissions/removals estimates for LULUCF may not be available at all. In such cases, "total" emissions can be calculated as the sum of emissions for the sectors of energy, industrial processes, agriculture, and waste. In the South African case, "Total Emissions" exclude emissions/removals for LULUCF.
	MDG indicator 7.2.2: Carbon dioxide emissions (per capita)[31] Carbon emissions per capita are measured as the total amount of CO_2 emitted by the country as a consequence of all relevant human (production and consumption) activities, divided by the population of the country.
	MDG indicator 7.2.3 Carbon dioxide emissions: per $1 GDP (PPP): kg CO_2 per $1 GDP (PPP) Total CO_2 emissions divided by the total value of the gross domestic product (GDP) expressed in purchasing power parities (PPPs).

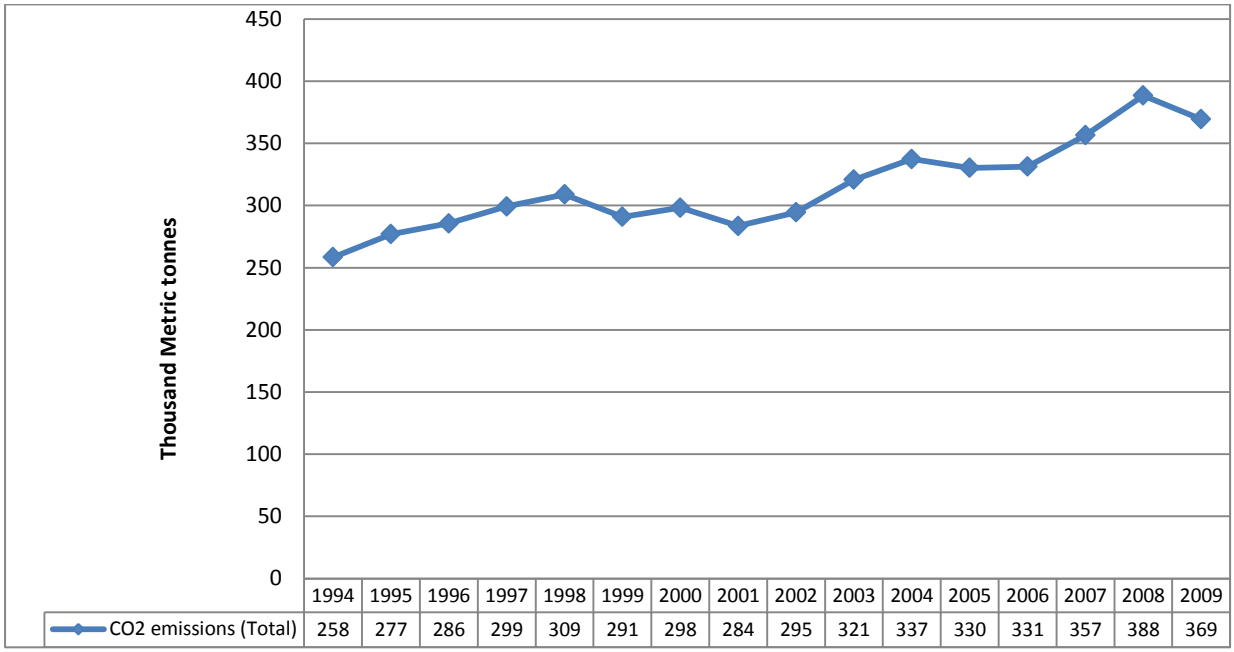
Figures 3 to 5 present trends of Indicator 7.2: CO_2 emissions – total, per capita, and per USD 1 GDP (PPP) respectively. In terms of total CO_2 emissions, the trend has been increasing, from 258.4 (in 1994) to 298.2 metric tons (in 2000), to 330.3 metric tons (in 2005)

[30] This target is applicable to all MDG 7.2 indicators: CO_2 emissions – total, per capita, and per $ 1 GDP (PPP). In accordance with article 4.7 of the UNFCCC, the extent to which this outcome can be achieved depends on the extent to which developed countries meet their commitment to provide financial capacity building, technology development and transfer support to developing countries.

[31] Figures are based on population values as reported in the International Energy Agency (IEA). The population figures used to use the do the calculations differ from official South African values.

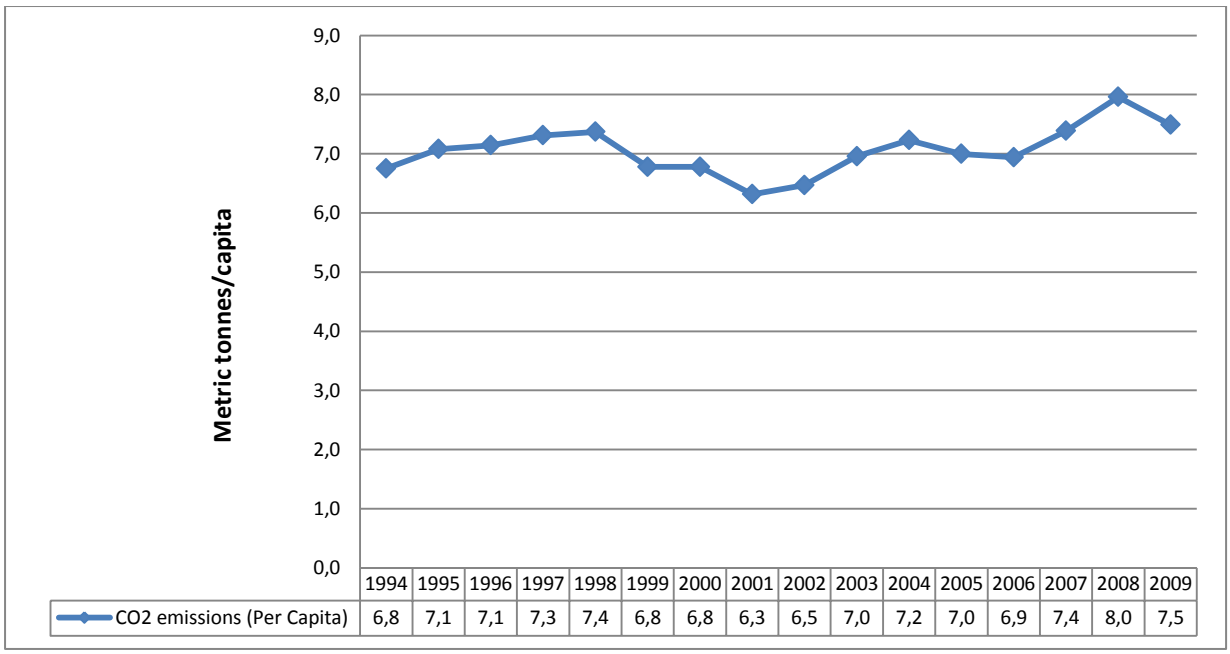
before reaching 369.4 metric tons in 2009 (Figure 3). CO_2 emissions per capita, measured in metric tons, is an important indicator for assessing progress towards addressing climate change (UNECA/AUC/AfDB/UNDP-RBA, 2010; 2011; AUC, UNECA, AfDB and UNDP, 2012).

Figure 3: Carbon dioxide emissions (total) and Carbon dioxide emissions (thousand metric tons)



Source: IEA (2012)

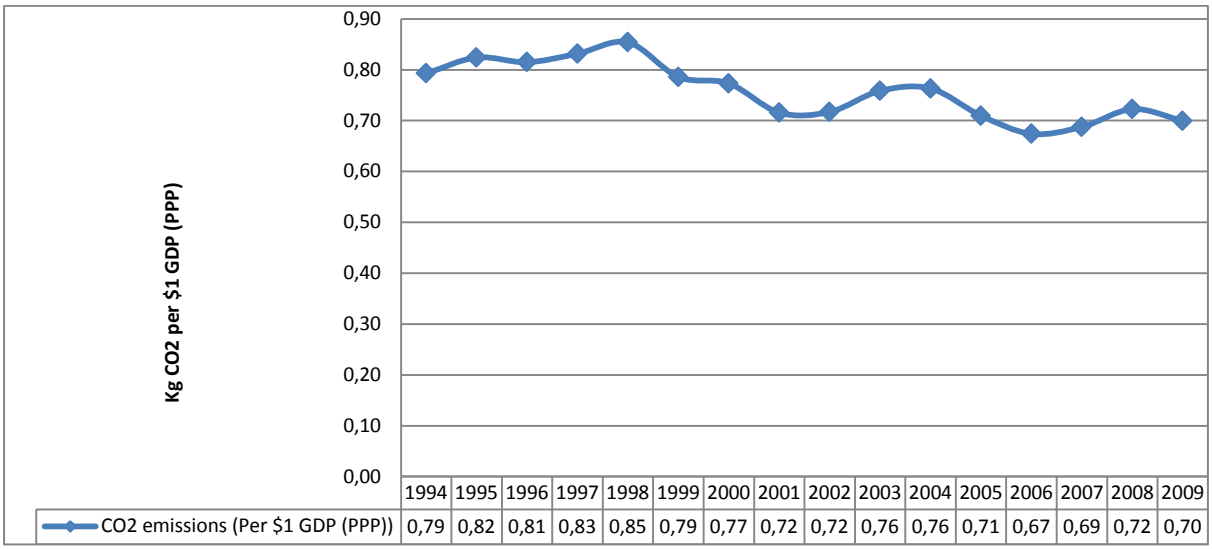
Figure 4: Carbon dioxide emissions and metric tons (per capita)



Source: IEA (2012)

South African per capita emissions are higher than those of many European countries, and more than 3.5 times the average for developing countries (DEA, 2011d). The metric tons per capita for 1994; 2000; 2005; and 2009 are respectively 6.75; 6.78; 7.00 and 7.49 (Figure 4). Between 1998 and 2001, there was a slight decline in the per capita emissions, with the lowest value of 6.31 recorded in 2001. The increase then resumed from 2002 to 2004, with a slight decline in 2005 before the trend increased to the maximum of 7.96 tons in 2008 (Figure 4).

Figure 5: Carbon dioxide emissions: per $1 GDP (PPP) and kg CO2 per $1 GDP (PPP)



Source: IEA (2012)

South Africa is a major emitter of CO_2 and accounts for about 65% of Africa's emissions (AUC, UNECA, AfDB and UNDP, 2012). South Africa is currently an energy-intensive economy based on an unsustainable economic development path primarily based on maximising economic growth, as measured by the GDP, particularly through mining, manufacturing and agricultural activities (DEA, 2011). Most of South Africa's emissions have their source in the energy sector, mainly from electricity supply, industry, transport and liquid fuels supply. However, this presents a major disadvantage for South Africa in the context of climate change as the country has developed its primary technological competence with the associated scientific research and development (R&D) capacity to support fossil fuel-dependent technologies (Pouris and Naidoo, 2011). In the context of climate change, the challenge for South Africa is to develop and implement robust mitigation and adaptation measures that would steer the country into an internationally competitive economic trajectory. Sustaining the progress made on MDG 7 and other MDGs will require South Africa to strengthen capacities to anticipate and respond to adverse impacts of climate change and to capitalise on mitigation opportunities.

Empirical evidence shows that despite being recognised as a relatively significant contributor to global climate change, South Africa, along with other developing countries, is extremely vulnerable and exposed to the impacts of climate change and variability due to the socio-

economic and environmental context (GoSA, 2011). The adverse impacts of climate change threaten to have severe impacts on South Africa's economy, natural environment and people, and to derail development gains (Marquard, Trollip and Winkler, 2011). The South African government regards climate change as one of the greatest threats to sustainable development and believes that climate change, if unmitigated, has the potential to undo or undermine many of the positive advances made in meeting South Africa's own development goals and the MDGs (GoSA, 2011).

The South African Cabinet in 2008 approved the Long Term Mitigation Scenario study of the country's mitigation potential in the context of the country's moral and legal obligation to make a fair contribution to global mitigation effort under the UNFCCC and its Kyoto Protocol. South Africa is a signatory to the UNFCCC and the Kyoto Protocol. The Department of Environmental Affairs' 2011 publication "Defining South Africa's Peak, Plateau and Decline Greenhouse Gas Emission Trajectory" provides detailed discussion and clarification of the country's Peak, Plateau and Decline (PPD) GHG emission trajectory, used as the benchmark against which the efficacy of South Africa's mitigation action will be measured as referenced in section 6.4 and particularly 6.4.2 of the National Climate Change Response White Paper, 2011 (GoSA, 2011). South Africa announced that emissions are expected to peak in the period from 2020 to 2025, remain stable for around a decade, and decline thereafter in absolute terms. This strategic policy direction was confirmed by the President at the 2009 National Climate Summit and as a South African undertaking in the context of all legal obligations under the UNFCCC and its Kyoto Protocol prior to the international UNFCCC Climate Change Conference in 2009. The National GHG Emissions Trajectory Range to be used as the benchmark against which the efficacy of mitigation action will be measured has been informed by the above strategic policy direction and international undertaking of the South African government (DEA, 2011d).

According to the DEA (2011d), the benchmark National GHG Emissions Trajectory Range:

1) "Reflects South Africa's fair contribution to the global effort to limit anthropogenic climate change to well below a maximum of $2^{o}C$ above pre-industrial levels.
2) Details the 'peak, plateau and decline trajectory' used as the initial benchmark against which the efficacy of mitigation actions will be measured. In summary:
    a. South Africa's GHG emissions peak in the period 2020 to 2025 in a range with a lower limit of 398 Mega tonnes (109 kg) (Mt) CO_2-eq and upper limits of 583 Mt CO_2-eq and 614 Mt CO_2-eq for 2020 and 2025 respectively.
    b. South Africa's GHG emissions will plateau for up to ten years after the peak within the range with a lower limit of 398 Mt CO_2-eq and upper limit of 614 Mt CO_2-eq.
    c. From 2036 onwards, emissions will decline in absolute terms to a range with lower limit of 212 Mt CO_2-eq and upper limit of 428 Mt CO_2-eq by 2050.
3) Defines an initial National GHG Emissions Trajectory Range, which may be reviewed in the light of monitoring and evaluation results, technological advances or new science, evidence and information." (DEA, 2011d, p.1)

The South African "Business As Usual" (BAU) estimate of future emission trends is based on the "Growth Without Constraints (GWC)" scenario contained in the Long-Term Emission Scenarios (LTMS) (see DEA 2011d and LTMS study for detailed discussion). According to the DEA (2011d, p.5), based on the BAU baseline, "South Africa's desired peak, plateau and decline greenhouse gas emissions trajectory (PPD Trajectory) is based on the 6 December 2009, Presidential announcement that South Africa would undertake a range of voluntary nationally appropriate mitigation actions (NAMAs) to ensure that the country's emissions deviate below the 'Business as Usual' baseline by around 34% by 2020 and by 42% by 2025." It is important to note that the achievement of the 34% below BAU was undertaken with the understanding that the action will be supported by international finance, technology and capacity building. These conditions are critical for South Africa to achieve the set targets related to the MDG 7.2 indicators.

South Africa's climate change mitigation policy is centred on the need to meet national development challenges. In addition, the mitigation policy has two dimensions: (a) participating in international efforts to limit GHG emissions from all countries to a level that would not result in dangerous climate change and (b) national dimension focused on ensuring that mitigation policies integrate developmental challenges facing the country (NCCRP, 2011; Marquard et al., 2011). According to Marquard et al. (2011), climate change mitigation through high investment costs can threaten development but can also offer massive investment opportunities for development of new industries and other potential co-benefits if implemented effectively. It is therefore important that climate change mitigation measures integrate national development imperatives such as poverty reduction and job creation, among others.

Recent national policies and plans stress the need for transforming the South African economy to embrace equity and sustainable development. For example, the South African framework for responding to economic crisis and the United Nations Environment Programme's (UNEP) Global Green New Deal, "recognises the opportunities in the development of industries that combat the negative effects of climate change and urges South Africa to develop strong capacity in green technologies and industries" (DEA, 2010). The framework, together with many other national policy documents and plans (e.g. NDP, vision 2030, NGP, NSSD), emphasises the need for implementation of pro-employment programmes that promote sustainable and inclusive growth. The transformation of businesses and adoption of sustainable consumption and production processes are expected to ensure growth in green sectors, more green and decent jobs, reduced energy and material intensities in production processes, less waste and pollution, and significantly reduced GHG emissions (DEA, 2010). South Africa has in recent years prepared and is in the process of implementing green economy policies and programmes as part of efforts to steer the economy into a low-carbon transition. The country has identified key flagship mitigation programmes and has started promoting and implementing clean energy resources such as the following renewable energy and energy efficient initiatives: Solar Water Heating Programme, Energy Efficiency and Demand Management Programme, and the Green Fund (Box 1). South Africa is set to release the National Greenhouse Gas inventory in late 2013.

Box 1: The Green Fund

The Government of South Africa through the Department of Environmental Affairs (DEA) has made available R1, 1 Billion over three years to initiate 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 collaboration between the Development Bank of Southern Africa (DBSA) as the implementing agent of the Green Fund and the Department of Environmental Affairs (DEA) (DEA, 2013). The Green Fund aims to provide catalytic finance to facilitate investment in green initiatives that will support poverty reduction and job creation. The Green Fund is designed as an additional and complementary resource to existing fiscal allocations that support the transitioning of the South African economy to a low-carbon, resource efficient and climate resilient growth path. In addition, the Green Fund is designed to respond to market weaknesses that are currently hampering South Africa's transition to a green economy by:

- Promoting innovative and high impact green programmes and projects;
- Reinforcing climate policy objectives through green interventions;
- Building an evidence base for the expansion of the green economy; and
- Attracting additional resources to support South Africa's green economy development.

The Green Fund has identified three thematic funding windows, which will contribute to the transition to a green economy:

- Green Cities and Towns (GCT) –The vision of the GCT window is to strive for well-run, compact and efficient cities and towns that deliver essential services to their residents, utilising available natural resources efficiently and sustainably.
- Low Carbon Economy (LCE) – The vision of the LCE window is to strive towards a low carbon growth trajectory in line with national climate change policy principles.
- Environmental and Natural Resource Management (NRM) – The vision of the NRM window is to strive for protected and conserved resources for sustained ecosystem services to support South Africa's development path.

Indicator 7.2 Lessons Learnt and post 2015 agenda

The impacts of climate change, if unmitigated, have the potential to undo or undermine many of the positive advances made in meeting South Africa's own development goals and the MDGs. Sustaining the progress made on MDG 7 and other MDGs will require South Africa to strengthen capacities to anticipate and respond to adverse impacts of climate change and capitalise on mitigation opportunities.

South Africa has committed to stringent CO_2 emission reduction targets (to achieve 34% below "business as usual" by 2020), undertaken with the understanding that the actions will be supported by international finance, technology and capacity building. These conditions are critical for South Africa to achieve the set targets related to the MDG 7.2 indicators.

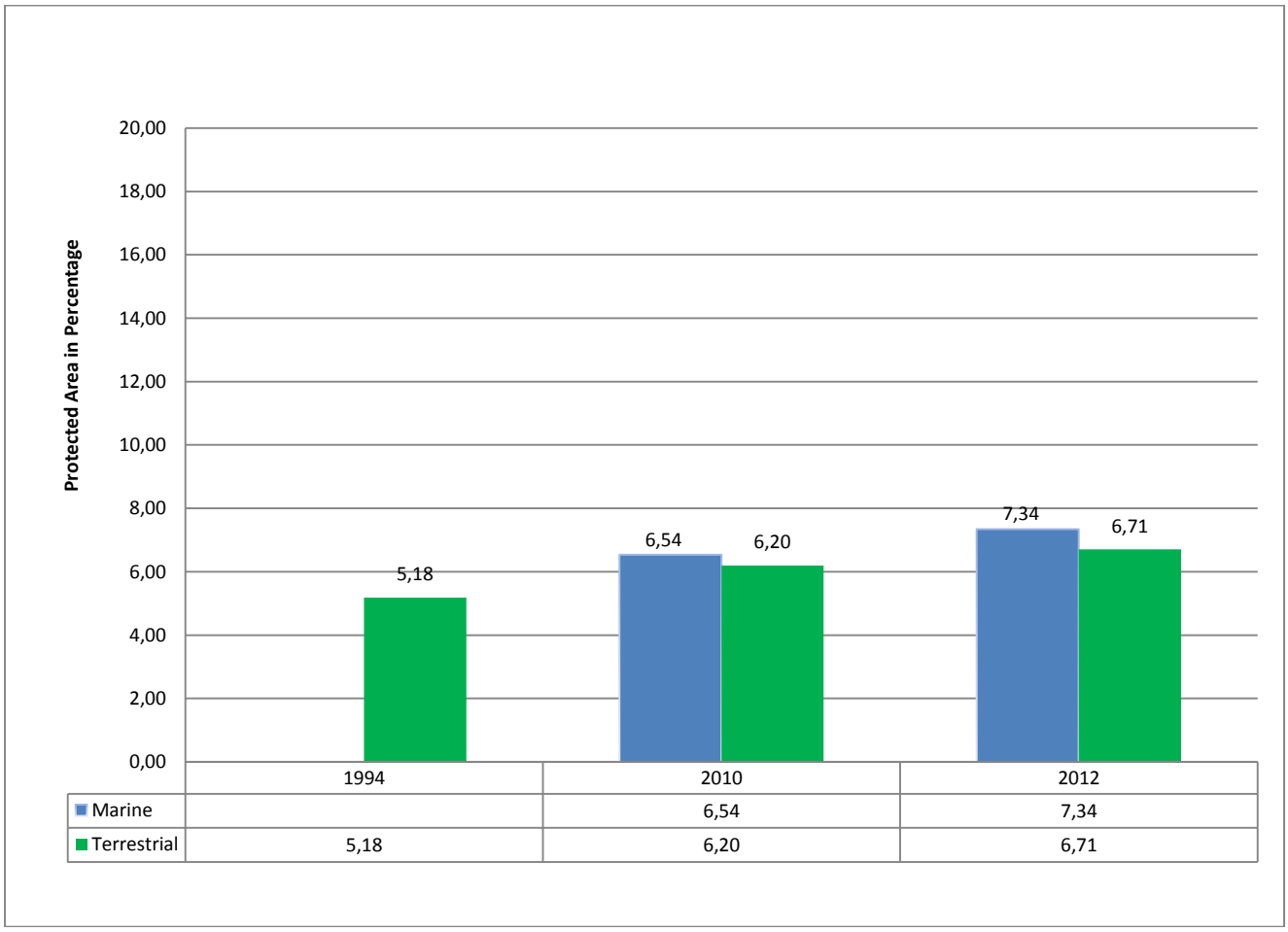
Target 7.B: Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss

Indicator 7.6: Proportion of terrestrial and marine areas protected

Target	Definition
Indicator 7.6.1 (Proportion of terrestrial areas protected) **Target:** By 2020, at least 17 % of terrestrial and inland water areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.	The units of measure in this indicator are terrestrial protected areas, conservation areas and marine protected areas in territorial waters (up to 12 nautical miles from the coast). The International Union for Conservation of Nature (IUCN) defines a protected area as "a clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values" (Dudley, 2008). This indicator is calculated using all the nationally declared protected areas; i.e. national parks, provincial, and local reserves (including stewardship programme), special nature reserves, mountain catchments, forest nature reserves, forest wilderness areas, protected environments, specially protected forest areas, world heritage sites, areas that are managed for conservation but at this stage not yet declared (under stewardship) as well as buffer zones of biosphere reserves and areas adjacent to protected areas called game parks, provincial and local nature reserves that are not yet declared. Also included are areas being managed by provinces such as nature reserves but for which proof of declaration is not available (example: Makuya Park and Letaba Ranch) and marine protected areas.
Indicator 7.6.1 (Proportion of marine areas protected) **Target:** By 2020, at least 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.	Definition is the same as MDG 7.6.1

The indicator of the proportion of protected terrestrial[32] and marine areas measures formal protection of components of biodiversity. In 1994, the proportion of terrestrial areas under protection was 5.18% and there was no data reported for marine protected areas. The proportion for both terrestrial and marine protected areas increased to 6.20% and 6.54% respectively in 2010, before reaching 6.71% and 7.34% in 2012 (Figure 6). The target for protected terrestrial areas is 17% by 2020 and 10% for marine areas by 2020. South Africa registered a 1.5% improvement in the proportion of protected terrestrial areas during the period between 1994 and 2012 (and a 0.5% increase between 2010 and 2012). At this rate of increase in protected terrestrial areas, the country is unlikely to meet the 2020 target of 17% by 2020. On the other hand, marine protected areas improved by 0.8% between 2010 and 2012 and, if this rate is at least maintained, the country will reach 10.54% of protected marine areas by 2020. The results imply that the country is on course to meet the protected marine areas target if the current rate of increase is at least maintained while the target for protected terrestrial areas is unlikely to be met.

Figure 6: Proportion of terrestrial and marine areas protected



Source: DEA (2013)

[32] In the South African National Protected Area Expansion Strategy and National Biodiversity Assessment Strategy, terrestrial protected areas are referred to as "Land Based Protected Areas".

South Africa has developed a national framework for an integrated approach for all stakeholders to manage biodiversity. The framework identifies priority actions for conserving biodiversity and sets out the implications of these priority actions for agencies that lead implementation. In addition, various national policies and strategies have been put in place by the DEA to protect both terrestrial and marine and coastal resources. Examples include: the National Protected Area Expansion Strategy (NPAES); Provincial Protected Area Expansion Strategies; SANParks – Land acquisition plan; National Environmental Management: Protected Areas Act; National Protected Areas Database; and the National Biodiversity Framework) (DEA, 2012). In addition, South Africa has successfully established biodiversity stewardship programmes in the last seven years, which are making a significant contribution to meeting national protected area targets (Driver et al., 2012).

Indicator 7.6 lessons learnt and the post-2015 agenda

Achievement of protected terrestrial areas by 2020 largely depends on stepping up implementation of current and future national policies and strategies.

Indicator 7.7: Proportion of species threatened with extinction

Target	**Definition**
South Africa's National Biodiversity Strategy and Action-plan and The United Nations Convention on Biological Diversity set the target to, by 2010, restore, maintain or reduce the decline of populations of species of selected taxonomic groups and improve the status of threatened species [CBD TARGET 2.1 & 2.2]. A further target is set that, by 2020, there should be no decline in the status of threatened	The indicator "Changes in the Status of Species" indicates the change in threat status of species in their natural habitat, based on population and range size and trends, as quantified by the categories of the IUCN Red List of Threatened Species. Species are the building blocks of ecosystems and play a fundamental role in maintaining well-functioning ecosystems and thus in supporting the provision of ecosystem services.

South Africa boasts a wealth of species, with over 95 000 known species and many more still to be described (Driver et al., 2012). Tracking changes in the percentage of threatened species gives a good indication of the country's success in preserving its biodiversity. Knowledge of species threatened or of particular concern for other reasons such as rarity helps in prioritising conservation resources. Species threat status has traditionally been assessed in the form of national or global Red Lists. The conservation assessments (Red Lists) tell us how threatened different species are, based on the likelihood of a species becoming extinct.[33] According to Driver et al. (2012), South Africa is a world leader in Red Listing, and one of the few countries with a dedicated Threatened Species Programme that promotes Red Listing of a range of taxonomic groups.

[33] The IUCN has developed a standard set of criteria and terminology for classifying species from highest to lowest risk of extinction, enabling comparison among different countries.

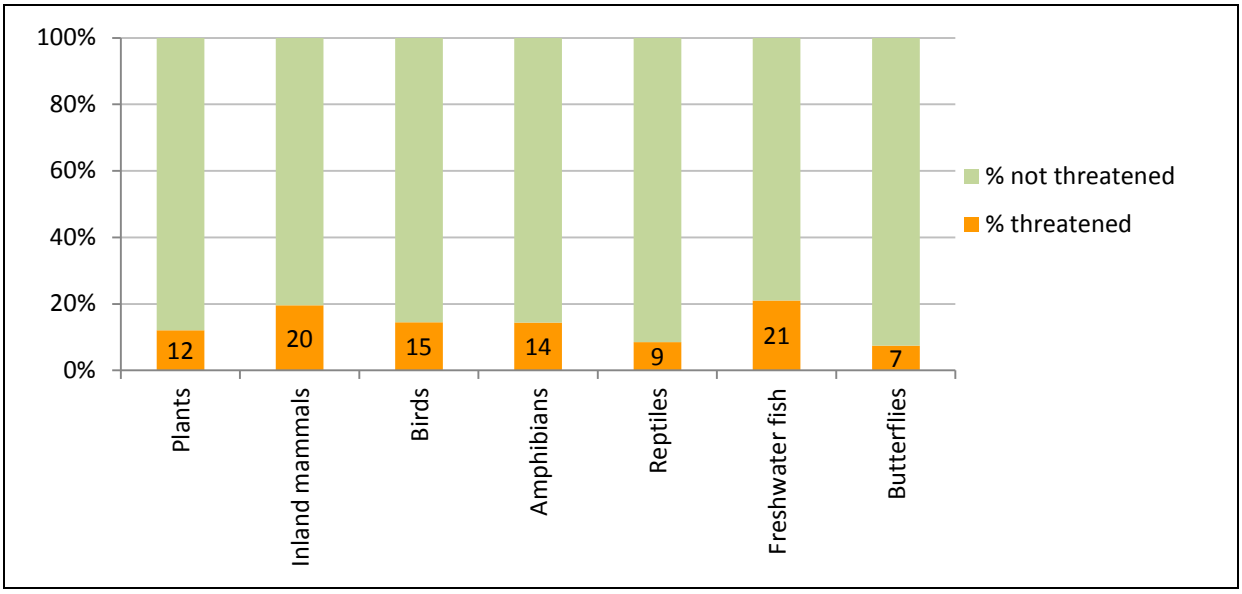
Figure 7 shows the proportion of threatened species for those taxonomic groups that have been comprehensively assessed, based on the most recent available Red Lists. The proportion of threatened species is highest for freshwater fish (21%) and inland mammals (20%). According to Driver et al. (2012), the highest numbers of threatened species (over 2 500) are found among the plant group (see

Table 4). Overall, the results of Red List assessments for South Africa to date (

Table 4 and Figure 7) show that (Driver et al., 2012):

1. One in every five inland mammal species is threatened.
2. One in every five freshwater fish species is threatened.
3. One in every seven frog species is threatened.
4. One in every seven bird species is threatened.
5. One in every eight plant species is threatened.
6. One in every 12 reptile species is threatened.
7. One in every 12 butterfly species is threatened

Figure 7: Proportion of threatened species for those taxonomic groups that have been comprehensively assessed, based on the most recent available Red Lists



Source: Driver et al. (2012)

Table 4: Summary of species status in South Africa, for those groups that have been comprehensively assessed

Taxonomic group	# described taxa*	# threatened	% threatened	# extinct	# endemic to SA	% of Earth's taxa	Most recent Red List
Plants	20 692	2 505	12	40	13 203	64	2011
Inland mammals	307	60	20	3	57	19	2004
Birds	841	122	14.5	2	68	8	2000
Amphibians	118	17	14	0	51	43	2010
Reptiles	421	36	9	2	196	47	2011
Freshwater fish	114	24	21	0	58	51	2007
Butterflies	793	59	7	3	415	52	2011

Source: Driver et al (2012)

* A taxon (plural taxa) is usually a species but in some cases may be a subspecies or variety.

Red Lists also provide information on factors that contribute to threat status of species. For example, recent conservation assessments completed in South Africa (for plants in 2011, reptiles in 2011 and amphibians in 2010) show that loss of natural habitat or land cover change, particularly as a result of cultivation, is the primary threat to species (Driver et al., 2012), while invasive alien species threaten species in both terrestrial and freshwater environments (DEA, 2011c).

Indicator 7.7 lessons learnt and the post-2015 agenda

There is a critical need to ensure future data collection to allow continuous tracking of changes in threatened species and targeting of conservation resources. There is a need to set up conservation activities around agricultural areas as well as to control land use changes in both protected and unprotected areas.

Target 7C: Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation

Indicator 7.8: Proportion of population using an improved drinking water source

Target	Definition
Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation	The proportion of the population using an improved drinking water source, total, urban, and rural, is the percentage of the population that uses any of the following types of water supply for drinking: piped water into dwelling, plot or yard; public tap/standpipe; borehole/tube well; protected dug well; protected spring; rainwater collection and bottled water (if a secondary available source is also improved). An improved drinking water source does not include unprotected well, unprotected spring, water provided by carts with small tanks/drums, tanker truck-provided water and bottled water (if secondary source is not an improved source) or surface water taken directly from rivers, ponds, streams, lakes, dams, or irrigation channels.

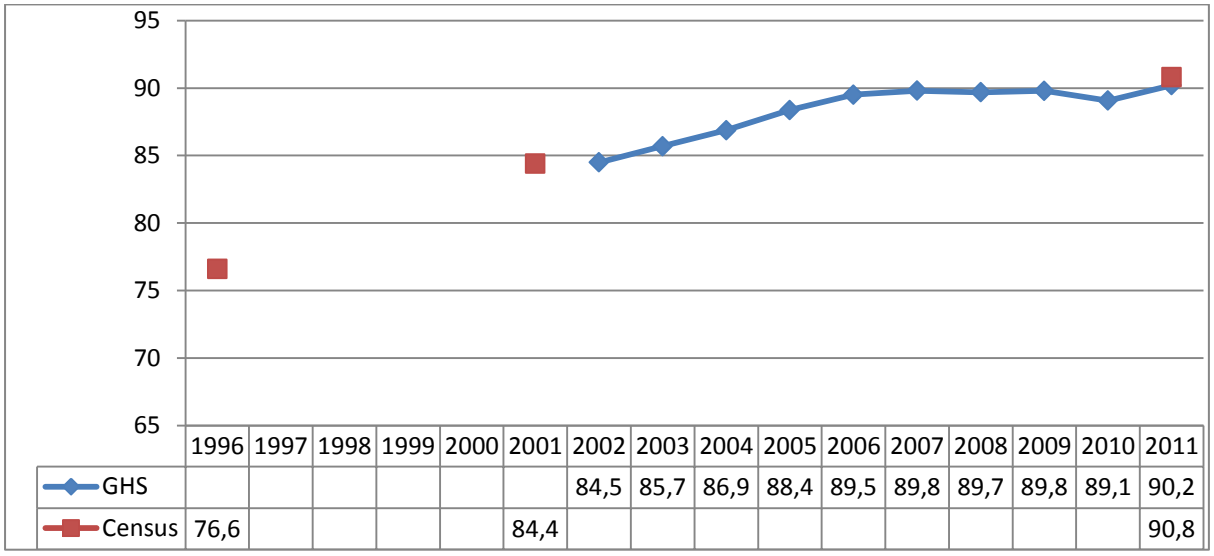
According to the UN and the World Health Organization (WHO), the target of halving the proportion of the population without access to improved water was achieved by 2010 (UNICEF-WHO, 2012). In 1990, the proportion of the global population without access to improved water sources was 24%, compared to 11% by 2010, which is less than half of the 24% estimated by 1990. This is supported by the fact that over 2.1 billion people globally gained access to improved water sources from 1990 to 2010, almost 6.1 billion people (or 89% of the world's population) were using an improved water source in 2010 up from 76 per cent in 1990 (United Nations, 2013; UNICEF-WHO, 2012).

However, the global report acknowledges the disparities among countries in achieving that target. Other developing countries, such as Latin America and the Caribbean, North Africa and large parts of Asia, have achieved a target of 90% access to improved drinking water

sources, while Sub-Saharan Africa had only a 61% access by 2010. Another caveat in applauding the global success on water access achievement is that complete information about drinking water safety is not available for global monitoring, and more than 780 million people globally still do not have access to improved water sources. This clearly shows how the definition of targets plays a role, since the MDG drinking water target focuses on halving the proportion of people without safe drinking water, which was achieved by 2010, but more than 10% of the global population still relied on unimproved drinking water sources by the same period (United Nations, 2013; UNICEF-WHO, 2012). Nevertheless, the UN concluded that the drinking water target had become one of the first MDG targets to be met by 2010.

Data on water access for South Africa is shown in Figure 9, using the two main data sources from the General Household Survey (GHS) and the Census taken every 10 years (1996; 2001; and 2011) (Stats SA, 2011).

Figure 8: Proportion of population using an improved drinking water source



	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
GHS							84,5	85,7	86,9	88,4	89,5	89,8	89,7	89,8	89,1	90,2
Census	76,6					84,4										90,8

Source: Stats SA, 2011. GHS, 2002 – 2011; Census 1996, 2001 and 2011

The GHS data shows that South Africa had already achieved the water access MDG target in 2005, where 88.4% of the population had access to improved drinking water services (leaving only 11.6% of the backlog) and by 2011 (latest year reported) 90.2% of population was reported to be using an improved drinking water source (Stats SA, 2011). The Census data show that the proportion of the South African population without access to safe drinking water was 23.4% in 1996; 15.6% in 2001 and 9.2% in 2011 respectively (see Figure 8).

In South Africa, the DWA is responsible for water-related goals for MDG 7, which involves access to water while access to sanitation services resides with the Department of Human Settlements (Target 7C). The original MDG target adopted in 2000 was to halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation, which in 2008 was extended to include both urban and rural areas, by 2015 (PMG, 2012). According to the Parliamentary Monitoring Group (PMG) Water MDG report of 2012, although the MDGs were adopted in 2000 (with 1994 as the base year), South Africa had already set its own targets[34] towards water access and infrastructure by 2014 (PMG, 2012). The national domesticated target for water access was to address and resolve all backlogs and achieve 100% coverage of water access for all South Africans, by 2014. However, despite progress made in addressing national goals and targets related to water access, South Africa is unlikely to achieve 100% coverage of water access on the basis of existing delivery trends (PMG, 2012).

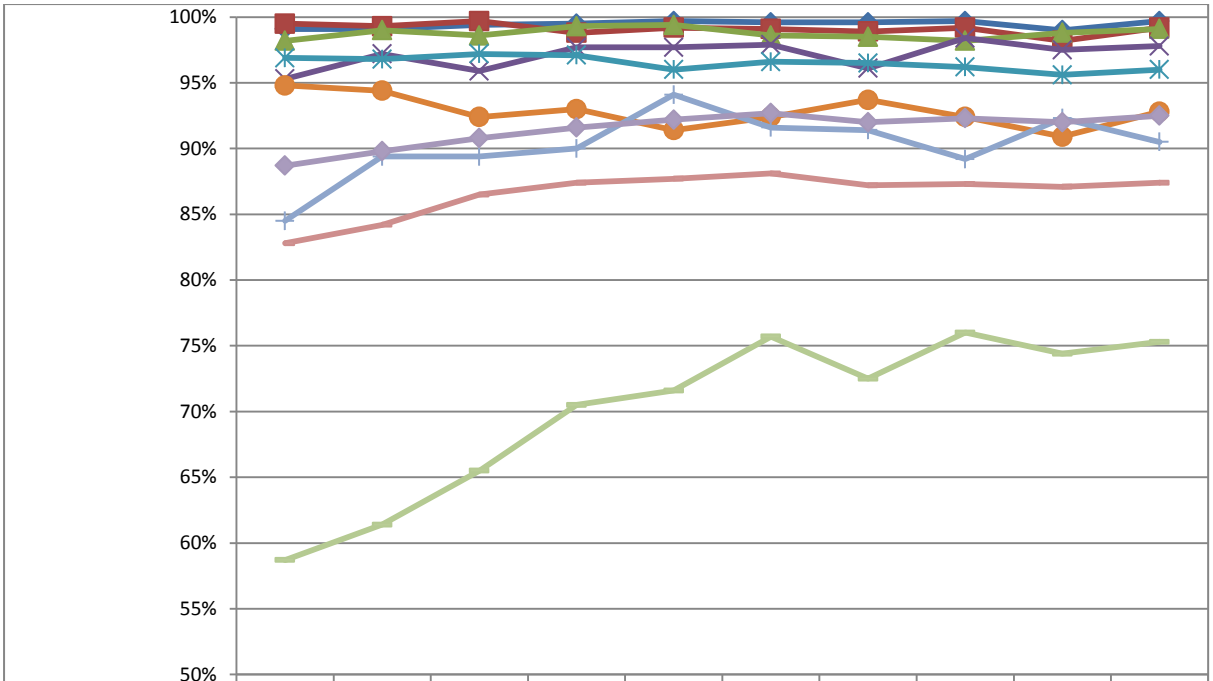
As noted at the global level, the disparities in terms of access to water are noticeable between the rural and urban areas of South Africa. The GHS household data shows that, on average, the proportion of households with improved water access in the urban areas was approximately 99% between 2008 and 2011, while the average proportion of rural households was about 79% over the same period. According to Behrmann (2013), further analysis on access to rural water supply shows a disturbing overall growth of 1.4%; however, when this percentage is unpacked in access to street tap and access to yard or in-house connection the following is observed:

1. Growth rate in street taps declined by 2% over the period; and
2. Growth rate for yard connection or in-house connection increased by 13% over the same period.

The focus of the grant funding provided by Treasury was for basic service (i.e. street taps) and not for higher levels of service (i.e. in-house connection). An important lesson is that various provincial authorities interpret the definition of basic services differently. For example by providing higher levels of service you will be putting pressure on the water resources and the knock on effect of the bulk supply mains becoming inadequate have occurred as a result.

Figure 9: Proportion of population using an improved drinking water source

[34] South African became democratic in 1994 and thus the domesticated targets for services are based on data for 1996, where such data is available. Therefore, the MDG base year of 1990 is not feasible for these targets as data is unavailable.



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Western Cape	99,1%	99,1%	99,4%	99,5%	99,7%	99,6%	99,6%	99,7%	99,0%	99,7%
Gauteng	99,5%	99,3%	99,7%	98,8%	99,2%	99,1%	98,9%	99,2%	98,2%	99,2%
Free State	98,2%	99,0%	98,6%	99,3%	99,4%	98,6%	98,5%	98,2%	98,8%	99,1%
Northern Cape	95,3%	97,2%	95,9%	97,7%	97,7%	97,9%	96,1%	98,4%	97,5%	97,8%
North West	96,9%	96,8%	97,2%	97,1%	96,0%	96,6%	96,5%	96,2%	95,6%	96,0%
Mpumalanga	94,8%	94,4%	92,4%	93,0%	91,4%	92,4%	93,7%	92,4%	90,9%	92,8%
Limpopo	84,5%	89,4%	89,4%	90,0%	94,1%	91,6%	91,4%	89,2%	92,3%	90,5%
Kwazulu-Natal	82,8%	84,2%	86,5%	87,4%	87,7%	88,1%	87,2%	87,3%	87,1%	87,4%
Eastern Cape	58,7%	61,4%	65,5%	70,5%	71,6%	75,7%	72,5%	76,0%	74,4%	75,3%
National	88,7%	89,8%	90,8%	91,6%	92,2%	92,7%	92,0%	92,3%	92,0%	92,5%

Source: GHS, 2002 – 2011

Although at the national level the country achieved the target of halving the proportion of the population without access to improved water sources by 2005, as discussed earlier, there have been disparities in the level of achievement among the different provinces in South Africa, as shown in Figure 9.

The data on the proportion of population using improved drinking water sources shows that some provinces are performing better than the national average for South Africa. The proportion of the population with access to improved water sources is higher for the Western Cape, Northern Cape, Free State, North West and Gauteng provinces respectively for all the four periods (2002; 2005; 2010 and 2011) recorded. In 2011, the Western Cape and Gauteng provinces had the highest proportion (99%) of the population with access, while the Eastern Cape's proportion of the population with improved access was 75.3% for that year (Figure 9). The level of access shows disparities reflected by the level of development and economic infrastructure among provinces, where those with lower access to improved drinking water sources have higher proportions of rural areas compared to those with higher access. Further analysis of progress among the provinces shows that the Eastern Cape

came from a very low base of 58.7% in 2002 but had the best improvement in eradicating its backlogs. On the other hand, Mpumalanga and Limpopo provinces' rates are almost flat and in some instances declining (e.g. Limpopo in 2011). The data from Mpumalanga and Limpopo indicates worrying trends, which strongly suggest that existing infrastructure to supply water is failing and requires intervention, especially with regard to operations and maintenance and refurbishment of infrastructure. This implies that post-2015 water services which include functionality and not new infrastructure should be the focus.

Most of the achievements made towards meeting the water targets can be attributed to South African government interventions of introducing various strategies, policies and frameworks. The list is extensive; a few of those initiatives and policies include: the 2.8 billion spent on an infrastructure delivery programme of 1994; the National Water Act of 1998; the R8 billion capital grant on 2 300 municipal infrastructure projects between 1997 and 2003; the 2001 Masibambane water and sanitation sector support programme; the 2003 Strategic Framework for Water Services; the 2004 national Water Services Resource Strategy 1; the 2007 Regional Bulk Infrastructure Fund; the 2008 MIG Cities Fund; and, lately, the review of the 2013 National Water Resources Strategy 2, which is currently in progress (Presidency, 2013[35]).

Although government is well on its way to reaching its target of eradicating the historical backlog in water service delivery, it has acknowledged that the rate of delivery of water infrastructure has been slowing down recently, due to the lack of bulk infrastructure in the remaining areas that have not yet received services and the lack of professional and engineering expertise for maintenance, operation and building of new water systems. This infrastructure availability and maintenance challenge applies to all the other basic services (Presidency, 2012).

Indicator 7.8 lessons learnt and the post-2015 agenda

Although South Africa has achieved the target of halving the proportion of population without water access by 2011, this achievement is not for all provinces. The data from Mpumalanga and Limpopo indicates worrying trends, which strongly suggest that existing infrastructure to supply water is failing, requiring intervention, especially with regard to operations and maintenance and refurbishment of infrastructure.

The post-2015 agenda should focus on providing a water service which embraces sustainability into the definition of water service. An important lesson is that various provincial authorities interpret the definition of basic services differently.

Indicator 7.9: Proportion of population using an improved sanitation facility

Target	Definition
Halve, by 2015, the proportion of people without sustainable	The proportion of the population that uses an improved sanitation facility, total, urban, and rural, is the percentage of the population with access to facilities that hygienically separate human excreta from human contact. Improved facilities include flush/pour-flush toilets or latrines connected to

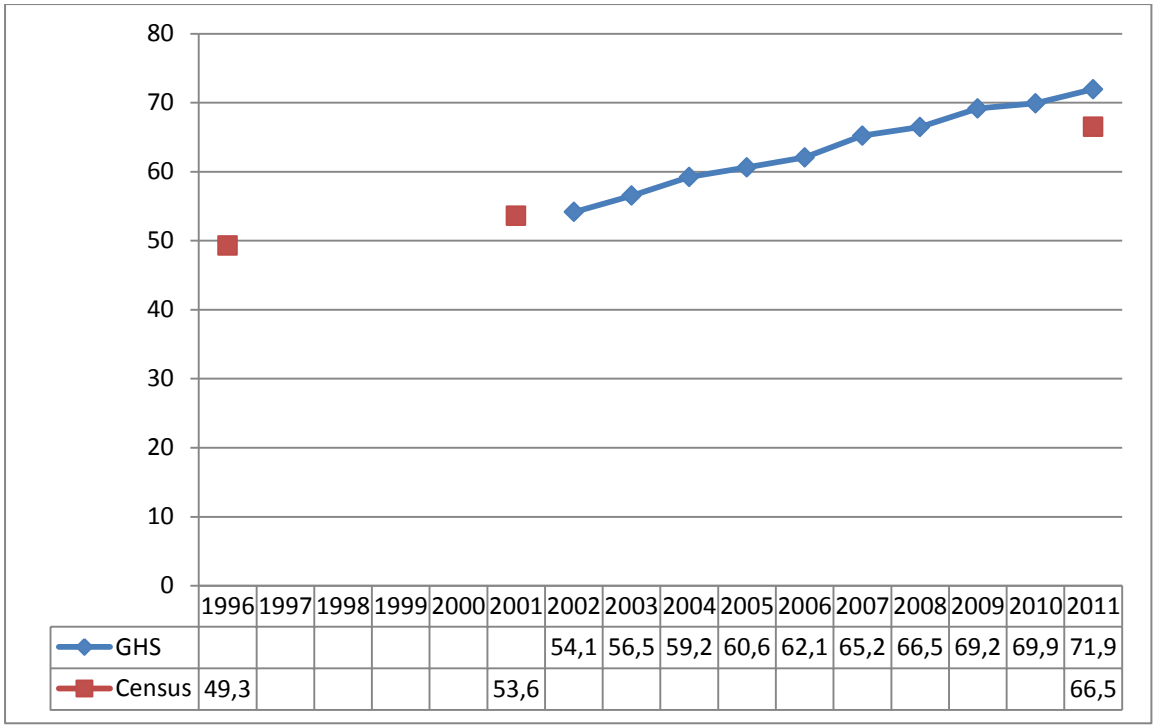
[35] These sources were compiled and presented at the 20 Years Review Roundtable on Environment, Sustainable Development, Water Governance and Management "from source to tap" organised by the Department of Monitoring and Evaluation in the Presidency on 14 June 2013.

access to safe drinking water and basic sanitation	a sewer, -septic tank, or -pit, ventilated improved pit latrines, pit latrines with a slab or platform of any material which covers the pit entirely, except for the drop hole and composting toilets/latrines. Unimproved facilities include public or shared facilities of an otherwise acceptable type, flush/pour-flush toilets or latrines which discharge directly into an open sewer or ditch, pit latrines without a slab, bucket latrines, hanging toilets or latrines which directly discharge into water bodies or in the open and the practice of open defecation in the bush, field or bodies of water.

According to the UNICEF-WHO (2012) update on progress towards water and sanitation MDGs, the world is unlikely to meet the MDG sanitation target of halving the proportion of the global population without access to improved sanitation facilities by 2015, although encouraging progress has been made to date. In 1990, the proportion of the global population with access to improved sanitation facilities was 49%, which required 75% coverage to meet the target by 2015. By 2010, this proportion of global access to improved sanitation had reached 63%, showing an improvement of 14% over two decades – which implies that the world is within 10% of being 'on track' (UNICEF-WHO, 2012). The UN predicts that at current rates of progress, global access to improved sanitation facilities will reach 67% coverage in 2015, which is better than previous projections but still far from the 75% needed to reach the target. The global institutions continue to state that, unless drastic efforts are made to accelerate services in the sanitation sector, the MDG target may not be reached until 2026, since an estimated 2.5 billion people were still without improved sanitation by 2010. Many countries are off track in meeting the MDG sanitation target, including much of Sub-Saharan Africa and several of the most populous countries in Asia (UNICEF-WHO, 2012).

Nationally, the South African government has committed to accelerating the provision of access to basic services, by having 100% access to improved sanitation facilities in 2014, from 69% in 2009 (DPME, 2012). By 2011, only 71.9% of the population (as shown in Figure 10) had access to improved sanitation facilities, which falls far below the 100% target by 2014. The challenge of inadequate infrastructure and lack of availability, coupled with maintenance, also affects the sanitation sector (DPME, 2012).

Figure 10: Proportion of population using an improved sanitation facility



Source: Census 1996, 2001, 2011; GHS, 2002 – 2011

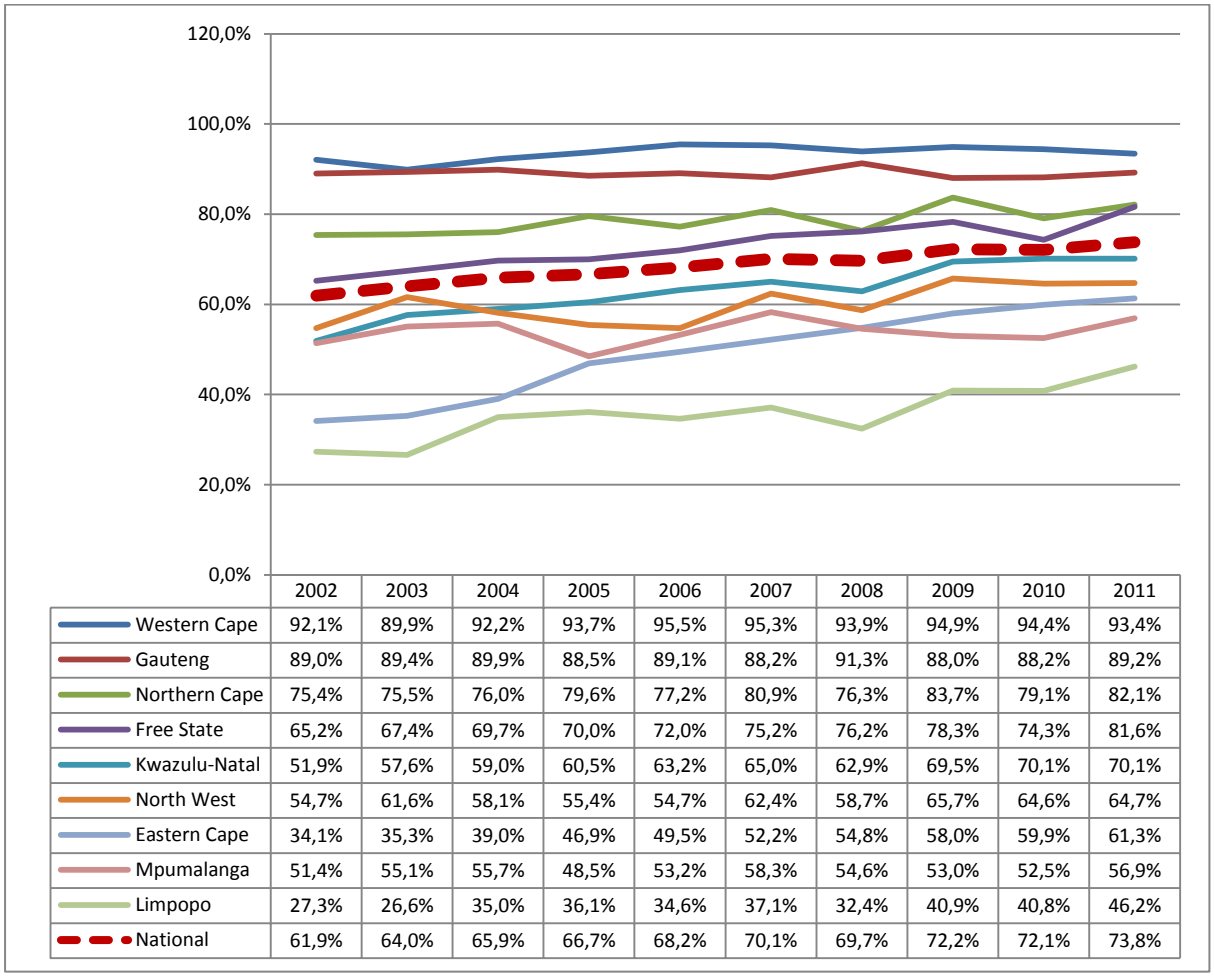
The Census data[36] show that the proportion of the South African population without access to sanitation was 50.7% in 1996; 46.4% in 2001 and 33.5% in 2011 respectively (see Figure 10).Using the 1996 proportion of 50.7%% without access, implies that the required 2015 target of halving the backlog will be approximately be 77%. Based on the latest data of 66.5% access in 2011, a target of 77% access to improved sanitation by 2015 is not likely to be achieved. This stems from the slow pace of improved access to date and the level of infrastructure rollout in the affected areas and regions of South Africa. While it is clear that the target may not be achieved using the Census data, the caveat with Census data is that it only comes every ten years and that is not sufficient for short- to medium term development planning on a regular basis. Further, since Census will only be taken again in 2021, it implies that by 2015, there will be no data to compare and reflect progress towards the 77% target.

If we take the 54.1% access of 2002 as the reference year[37], it implies that 45.9% of the population did not have access by 2002. This gives a target of halving the proportion of the backlog around 68.9% by 2015. With the latest data of 71.9% in 2011, this shows that the target towards improved access for sanitation has been achieved already by 2011. However, this target still falls short of the 100% target by 2014, which the South African is following. While the GHS data may provide a better picture in terms of progress towards achieving the sanitation target, the South African policy makers need to note that the rate of sanitation service delivery in some areas has not been optimal across South Africa, which makes achievement of the 2015 target less realistic, irrespective of the data used. Further, as noted from the review of global achievement of the sanitation targets, achievement of the

[36] To calculate the targets for 2015, we used Census data (not GHS) to correspond with 1996 as the base year.
[37] This is the first year when GHS survey was conducted.

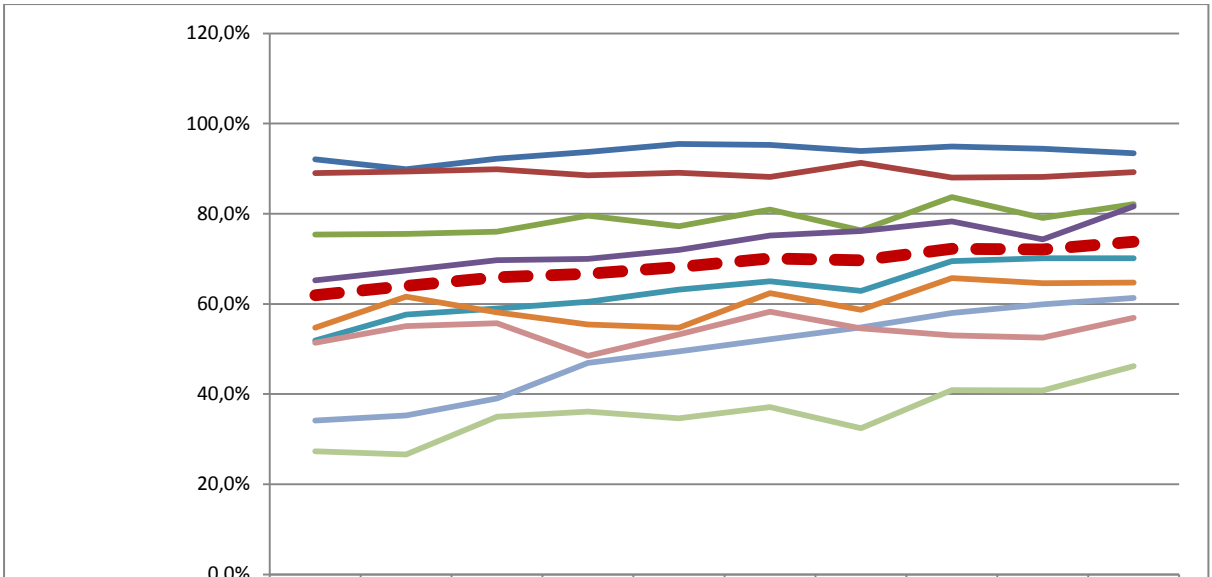
sanitation target remains a challenge and countries need to act in response to this need. Disparities in terms of access among the South African Provinces are reflected in Figure 11.

Figure 11: Proportion of population using an improved sanitation facility by province



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Western Cape	92,1%	89,9%	92,2%	93,7%	95,5%	95,3%	93,9%	94,9%	94,4%	93,4%
Gauteng	89,0%	89,4%	89,9%	88,5%	89,1%	88,2%	91,3%	88,0%	88,2%	89,2%
Northern Cape	75,4%	75,5%	76,0%	79,6%	77,2%	80,9%	76,3%	83,7%	79,1%	82,1%
Free State	65,2%	67,4%	69,7%	70,0%	72,0%	75,2%	76,2%	78,3%	74,3%	81,6%
Kwazulu-Natal	51,9%	57,6%	59,0%	60,5%	63,2%	65,0%	62,9%	69,5%	70,1%	70,1%
North West	54,7%	61,6%	58,1%	55,4%	54,7%	62,4%	58,7%	65,7%	64,6%	64,7%
Eastern Cape	34,1%	35,3%	39,0%	46,9%	49,5%	52,2%	54,8%	58,0%	59,9%	61,3%
Mpumalanga	51,4%	55,1%	55,7%	48,5%	53,2%	58,3%	54,6%	53,0%	52,5%	56,9%
Limpopo	27,3%	26,6%	35,0%	36,1%	34,6%	37,1%	32,4%	40,9%	40,8%	46,2%
National	61,9%	64,0%	65,9%	66,7%	68,2%	70,1%	69,7%	72,2%	72,1%	73,8%

Source: GHS, 2002 – 2011



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Western Cape	92,1%	89,9%	92,2%	93,7%	95,5%	95,3%	93,9%	94,9%	94,4%	93,4%
Gauteng	89,0%	89,4%	89,9%	88,5%	89,1%	88,2%	91,3%	88,0%	88,2%	89,2%
Northern Cape	75,4%	75,5%	76,0%	79,6%	77,2%	80,9%	76,3%	83,7%	79,1%	82,1%
Free State	65,2%	67,4%	69,7%	70,0%	72,0%	75,2%	76,2%	78,3%	74,3%	81,6%
Kwazulu-Natal	51,9%	57,6%	59,0%	60,5%	63,2%	65,0%	62,9%	69,5%	70,1%	70,1%
North West	54,7%	61,6%	58,1%	55,4%	54,7%	62,4%	58,7%	65,7%	64,6%	64,7%
Eastern Cape	34,1%	35,3%	39,0%	46,9%	49,5%	52,2%	54,8%	58,0%	59,9%	61,3%
Mpumalanga	51,4%	55,1%	55,7%	48,5%	53,2%	58,3%	54,6%	53,0%	52,5%	56,9%
Limpopo	27,3%	26,6%	35,0%	36,1%	34,6%	37,1%	32,4%	40,9%	40,8%	46,2%
National	61,9%	64,0%	65,9%	66,7%	68,2%	70,1%	69,7%	72,2%	72,1%	73,8%

11 shows that the proportion of households with improved access to sanitation varies among provinces, with most provinces showing improvement from 2002 to 2011. While the Western Cape and Gauteng maintained higher rates of access of over 88% for most of the period, the Eastern Cape recorded a significant increase from 34.1% in 2002 to 61.3% in 2011. Similar increases, although modest, have been recorded for the Free State, KwaZulu-Natal, and the North West. On the other hand, access to improved sanitation for the Mpumalanga had remained constant with minor improvement from 51.4% in 2002 to 56.9% in 2011. The province that had access of less than 50% between 2002 and 2011 is Limpopo, despite an increase from 27.3% in 1996 to 46.2% in 2012 as shown in Figure 11.

Using 2002 as the reference year, in terms of progress towards achieving the target of halving the population without improved access to sanitation by 2015, South Africa is on track for most provinces, except for Limpopo and Mpumalanga where access proportions in 2011 were 46.2% and 56.9% respectively. Achieving the sanitation targets for these provinces is feasible if special attention is given to the needy areas, with significant efforts seen in improving and maintaining infrastructure in those regions. The national average seems to have been increasing, albeit at a slow space during the review period.

Indicator 7.9 lessons learnt and the post-2015 agenda

Review of the two data sets[38] shows progress towards made towards achieving the sanitation target by 2015. It is clear that the target of 77% using the Census data is not achievable by 2015. However, the GHS data show that achieving this target is possible by 2015. While the GHS data may provide a better picture in terms of progress towards achieving the sanitation target, this target still falls below the South African government target of 100% access to improved sanitation by 2014. This implies that the South African policy makers need to take into account that the rate of sanitation service delivery in some areas has not been optimal across South Africa, which makes achievement of the 2015 target less realistic, irrespective of the data used. Further, as noted from the review of global achievement of the sanitation targets, achievement of the sanitation target remains a challenge and countries need to act in response to this need. Therefore, there is a need for government to ensure infrastructure maintenance and address capacity constraints in the affected areas.

Target 7D: By 2020 to have achieved a significant improvement in the lives of at least 100 million slum dwellers

Indicator 7.10: Proportion of urban population living in slums

Target	Definition
By 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers	The proportion of urban population living in slums is the proportion of urban population living in slum households. A slum household is defined as a group of individuals living under the same roof that lacks one or more of the following conditions: access to improved water; access to improved sanitation; sufficient-living area; durability of housing; security of tenure. However, since information on secure tenure is not available for most of the countries, only the first four indicators are used to define slum household, and then to estimate the proportion of urban population living in slums.

The 2012 MDG report showed that despite a reduction in the share of urban populations living in slums, the absolute number has continued to grow from 650 million people in 1990 to an estimated 863 million people currently (UN, 2012). The reduction in urban populations that live in slums is evidenced by the share of urban slum residents in the developing world, which declined from 39% in 2000 to 33% in 2012. According to the UN (2012), more than 200 million of these people gained access to improved water sources, improved sanitation facilities, and more durable and/or less crowded housing, in this way exceeding the MDG target ahead of the 2020 deadline. However, achievement of the MDG slum dweller target does not lessen the need to improve the lives of the urban poor and to curb the increase in numbers of slum dwellers (UN, 2012).

[38] The two data sets are provided at different time intervals and may be useful for different purposes. The Census data of every ten years may not be sufficient for short to medium term development planning, which may rely on the GHS data published annually. The Census data provided over a ten year period will not be available at 2015 to compare the sanitation target with actual achievement at that point in time.

In order to address the challenge of slums and improve the living conditions of slum dwellers, the South African government committed to accelerating service delivery and improving the quality of life of 400 000 households, upgrading informal settlements in 45 priority municipalities by 2014. Table 5 shows the targets set in 2009 to be achieved by 2014, based on data at 2010/11 (DPME, 2012).

Table 5: Housing targets set in 2009 to be achieved by 2014, based on data at 2010/11

Target	2014 Target	2010/11	Progress at 2010/11	Progress towards achievement by 2020
Number of households with improved basic services in slums: based on serviced sites	400 000	83 412	20.8%	Unlikely – due to capacity constraints of municipalities
Number of municipalities to be prioritised	45	19	42.22%	On track
Affordable home ownership: number of loans granted[39]	600 000	100 000	16.67%	Unlikely – commitment from banks not established
Rental market: number of new units	80 000	15 545	19.4%	Good incentive for market growth – but target not feasible
Number of hectares	6 250	1 329	21.26%	On track[40]
Number of accredited municipalities	27	8	29.63%	On track – but the process is hampered by the delays in provincial gazetting

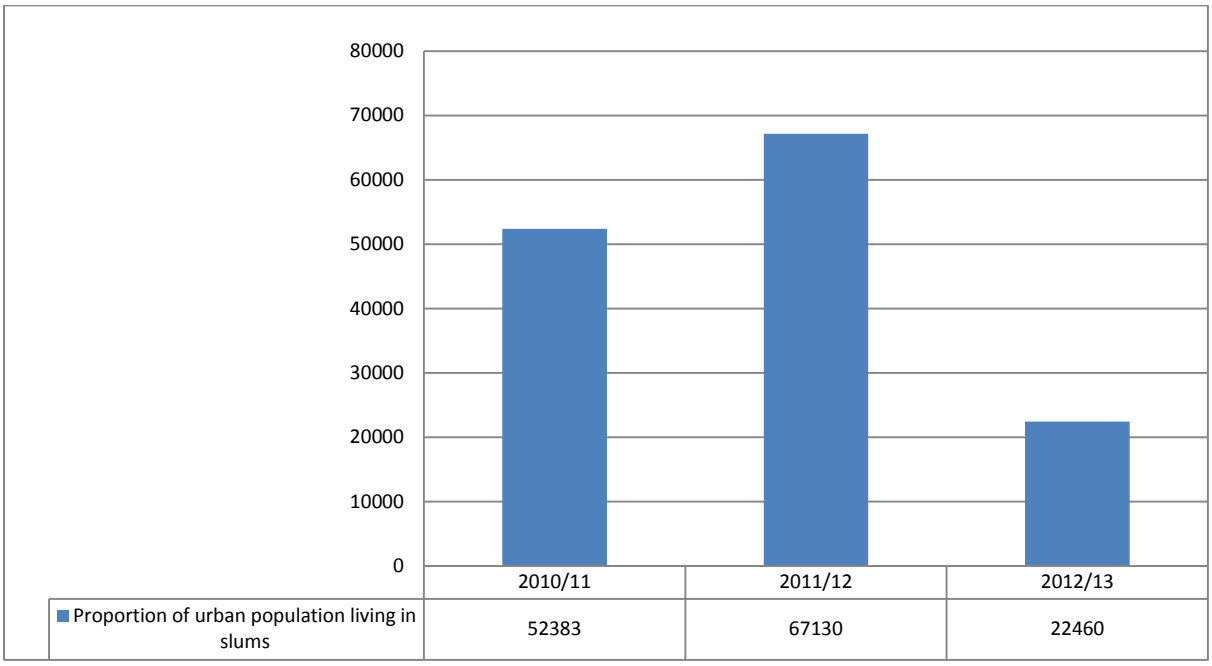
While the MDG target of improving the lives of 400 000 households living in slums is not likely to be achieved, the South African government has made significant strides towards achieving that target, by introducing other service delivery requirements as presented in Table 5.

The proportion of people living in slums increased sharply between 2010 and 2011, before declining significantly from 67 130 to 22 460 (Figure 12). The increase in the proportion of slums in urban areas is attributed to rural urban migration, where the majority of people are moving out of the rural areas to the cities in search of jobs and improved standard of living. Nevertheless, a decline of 44 670 people living in slums over a period of one year between 2011/12 and 2012/13 is a significant improvement and shows that the South African government has made strides towards addressing the problem and achieving this specific target under MDG 7. Although relating the improvement in the number of slums to the lives

[39] This is based on loans from the housing development finance institutions (DFIs).
[40] Achievement of this target is based on a further 1 066 hectares of government-owned land that has been released to municipalities for housing, offering major potential for triggering urban integration, in addition to the 1 329 hectares of well-located State-Owned Enterprise (SOE) properties, which are in the process of being transferred to the Housing Development Agency (HDA).

of slum dwellers is not a straight forward process, a decrease in the number could be an indication of improved access to services and possibly better opportunities that have allowed people to move out of slums.

Figure 12: Proportion of urban population living in slums



Source: DHS (2013)

Indicator 7.10 lessons learnt and the post-2015 agenda

Improving the lives of 400 000 households in informal settlements requires a lot more initiatives at the local municipal level, which range from accreditation of local municipalities to access to loans and state of the rental markets. These challenges need to be taken seriously in preparation for the post-2015 development agenda.

Table 6: Domesticated indicators[41] and targets: facts and findings[42]

Domesticated Indicators (DMIs) and Targets: Facts and Findings							
DMI 1: Proportion of Natural Habitat (Area in Percentage)							
Type of habitat	**Nationally Adopted Goals & Targets (date when adopted)**	**1994 Baseline (or closest)**	**2000**	**2005**	**Current Status 2013 (or nearest year)**	**Target Achievability**	**Reason for achievement or non-achievement**
Urban	South Africa's National Biodiversity Strategy and Action-plan (NBSAP) sets the target that by 2010 the rate of loss and degradation of natural habitats should be decreased.	0.85	1.49	1.98	No data	Possible	
Forestry & Plantations		1.16	1.44	1.62	No data		
Mining and Quarries		0.13	0.13	0.17	No data		
Cultivation/ Agriculture		12.43	10.22	11.92	No data		
Natural		85.44	86.71	84.31	No data		
DMI 2: Ecosystem Threat Status (Percentage at 2011)							
Type of Ecosystems	**Nationally Adopted Goals & Targets (date when adopted)**	**Status of threatened ecosystems: Percentage at 2011**				**Target Achievability**	**Reason for achievement or non-achievement**
		Critically Endangered (CR)	**Endangered (EN)**	**Vulnerable (VU)**	**Least Threatened (LT)**		
Terrestrial	South Africa's NBSAP sets the targets that by 2010 at least five key industries are actively avoiding threatened ecosystems in their production, planning and operations, and investing in managing threatened ecosystems under their control. South Africa's National Biodiversity Framework sets the target that by 2013 threatened or protected ecosystems have been identified and listed, and the list has	9	11	19	60	South Africa has achieved the target of having a list of protected or threatened ecosystems by 2011 and is on track to achieve an updated list by 2013.	This is based on the type of species identified by 2011 National Biodiversity Assessment (NBA).
River		26	19	13	43		
Percentage of Wetland		48	12	5	35		
Estuarine		39	2	2	57		
Marine & Coastal habitat		17	7	23	53		

[41] Most of the DMIs do not have numerical targets in terms of achievements, apart from DMI 4 and DMI 5. Here the indicators are evaluated in terms of performance over time, but not necessarily in terms of achievement.

[42] Table 7 shows progress from 1994 used as the reference year. The years 2000, 2005 and 2010 are used to correspond to the period for which South Africa reported on progress towards the MDGs and to compare the progress recorded for this period to the latest period beyond 2010 for which data is available.

	been updated at least once.						
DMI 4: Percentage of permitted landfill sites (Decrease in number of unlicensed waste disposal sites)							
	Nationally Adopted Goals & Targets (date when adopted)	**1994 Baseline (or closest)**	**2000**	**2005**	**Current Status (latest year of data)**	**Target Achievability**	**Reason for achievement or non-achievement**
DMI 4: Percentage of permitted landfill sites (Decrease in number of unlicensed waste disposal sites)	To have 80% of the 341 known unlicensed landfill sites licensed by 2015.	No data	No data	No data	4.3%	Unlikely	Proportion achieved to date is far below the target of 80%.
Proportion of Land Area Covered: DMI 6 – DMI 9							
	Nationally Adopted Goals & Targets (date when adopted)	**1994 Baseline (or closest)**	**2000**	**2005**	**Current Status (latest year of data)**	**Target Achievability**	**Reason for achievement or non-achievement**
DMI 6: Proportion of land area covered by Natural Forests	Reduce biodiversity loss	No data	No data	0.4	No data	Not clear	Not applicable
DMI 7: Proportion of land area covered by Savannah Woodlands	Reduce biodiversity loss	No data	No data	32.62	No data	Not clear	
DMI 8: Proportion of land area covered by Albany Thicket	Reduce biodiversity loss	No data	No data	2.37	No data	Not clear	
DMI 9: Proportion of land area covered by Commercial Plantations	Reduce biodiversity loss	No data	No data	1.8	1.3 (2010)	Not clear	
Proportion of households with access to electricity: DMI 10 – DMI 12							
	Nationally Adopted Goals & Targets (date when adopted)	**1994 Baseline (or closest)**	**2000**	**2005**	**Current Status (latest year of data)**	**Target Achievability**	**Reason for achievement or non-achievement**
DMI 10: Proportion of households with access to electricity	To increase the proportion of access from 81% in 2009 to 92% by 2014	30%	76.8	80.8	82.8 (2011)	Unlikely[43]	Constraints related to infrastructure and logistics of affected regions[44]
DMI 11: Proportion of population using solid fuels as primary source of energy:	No target	No data	22.9	18.2	14.4 (2011)	Not clear	Not applicable

[43] Revised government plans by 2025 to achieve 90% grid technology and 10% non-grid technology in line with NDP
[44] See detailed discussion in the report.

Cooking							
DMI 12: Proportion of population using solid fuels as primary source of energy: Heating	No target	No data	29.1	23.9	20.8 (2011)	Not clear	Not applicable
DMI 13: Stability of water supply							
	Nationally Adopted Goals & Targets (date when adopted)	**1994 Baseline (or closest)**	**2000**	**2005**	**Current Status (latest year of data)**	**Target Achievability**	**Reason for achievement or non-achievement**
No target[45]	Not Target	No data		23.6 (2009)	23 (2011)	Not applicable	Not applicable
Consumption of ozone-depleting substances: DMI 14 HCFC; DMI 15 BCM and DMI 16 MeBR							
	Nationally Adopted Goals & Targets (date when adopted)	**1994 Baseline (or closest)**	**2000**	**2005**	**Current Status (latest year of data)**	**Target Achievability**	
DMI 14: Consumption of ozone-depleting substances: HCFC	Freeze consumption by 2013 and phase out by 2040	No data	222.6 (2006)	209.2 (2008)	400.1 (2010)	Possible	Based on successful implementation of the HCFC Phase-out Management Plan
DMI 15: Consumption of ozone-depleting substances: BCM	Freeze consumption by 2013 and phase out by 2040	No data	0 (2006)	0 (2008)	-6.9 (2010)	Achieved	Implementation of phase out plans for ODS
DMI 16 Consumption of ozone-depleting substances: MeBr	Phase out by 2015	No data	330 (2006)	225.9 (2009)	0 (2010)	Achieved	Implementation of phase out plans for ODS

Source: Constructed from data provided in graphs. Key for MDG 2010 report is used to indicate level of achievement where possible.

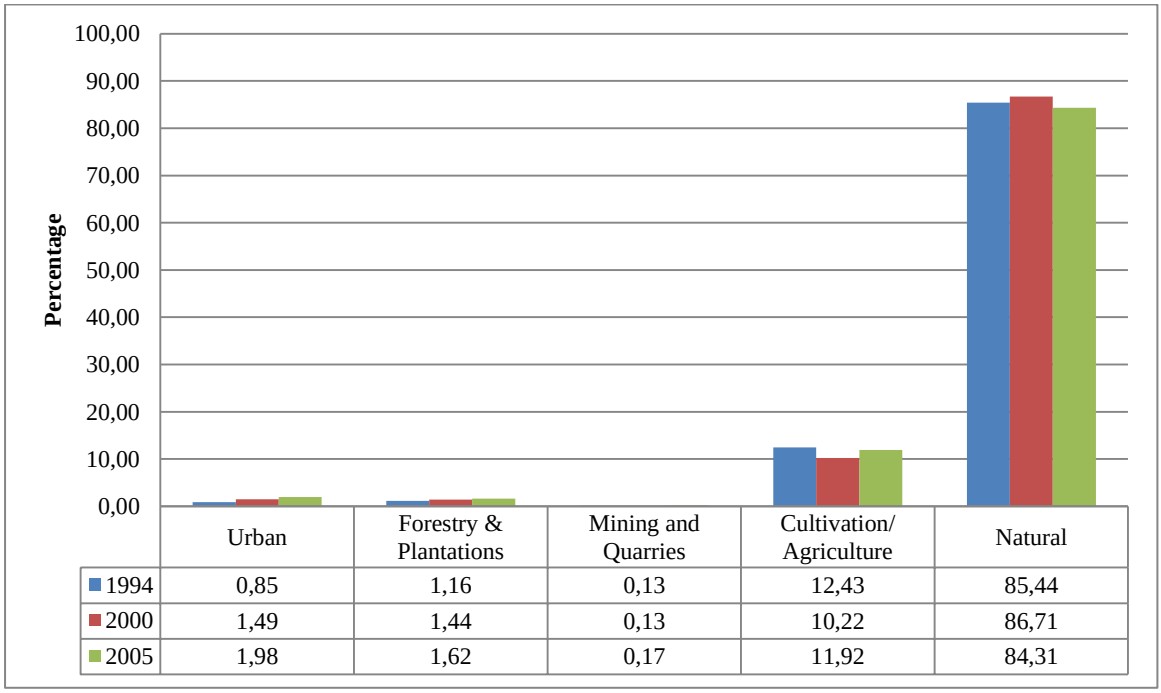
[45] DWA and StatsSA are in partnership to develop a Monitoring and Evaluation system to track this indicator. Its importance resides in post 2015

DMI 1: Proportion of Natural Habitat

Target	Definition
South Africa's National Biodiversity Strategy and Action-plan (NBSAP) sets the target that by 2010 the rate of loss and degradation of natural habitats should be decreased.	The proportion of natural habitat is the degree at which natural habitat has been transformed into different land use classes. The loss of natural habitat is one of the main causes of biodiversity loss.

Characterisation and spatial distribution of South Africa's land cover provide important input into sustainable land-use planning, strategic environmental assessment and global change research. Land degradation leads to reduced productivity, loss of vegetation and resources to support human livelihoods and commercial activities, which lead to reduced biodiversity and loss of ecosystem services (DEA, 2011c). The low proportion of natural habitat for the different categories shows the rate at which the natural habitat has been transformed to other land uses, with rates of more than 87% transformation for all categories (Figure 13). The greatest loss of natural habitat is from mining and quarries, with only 0.17% of natural habitat remaining in 2005, which increased from 0.13% in 2000. Both urban areas and forestry and plantations recorded minor improvements from 0.85% in 1994 to 1.98% in 2005 for urban areas, and from 1.16% to 1.62% for forestry and plantations (Figure 13).

Figure 13: Proportion of natural habitat



	Urban	Forestry & Plantations	Mining and Quarries	Cultivation/ Agriculture	Natural
1994	0,85	1,16	0,13	12,43	85,44
2000	1,49	1,44	0,13	10,22	86,71
2005	1,98	1,62	0,17	11,92	84,31

Source: SANBI (2013)

Land cover change is a major pressure on terrestrial ecosystems; it is used to quantify where natural habitat has been irreversibly lost and provide the basis for mapping ecological

conditions in the terrestrial environment. According to Driver et al. (2012), around 20% of natural habitat in South Africa has been irreversibly lost, most of it in the last century. The major causes of natural habitat loss include cultivation of crops (such as maize and wheat) as well as mining, forestry plantations and urban development. The reported rates of natural habitat loss are far more than the national average of 20% and rates of ongoing loss are high in provinces such as in Gauteng, KwaZulu-Natal and North West. These provinces are projected to have little natural habitat left outside protected areas by about 2050 if current rates of habitat loss continue (Driver et al., 2012). The NBSAP and the National Biodiversity Framework (NBF) set out strategic objectives and priority actions for managing and conserving South Africa's biodiversity. The NBA 2011 suggested priority actions that apply across terrestrial and aquatic environments and should feed into the review of both the NBSAP and NBF:

1. "Reduce loss and degradation of natural habitat in priority areas. These actions focus on preventing loss and degradation of natural habitat in those biodiversity priority areas that are still in good ecological condition.
2. Protect critical ecosystems. These actions focus on consolidating and expanding the protected area network as well as strengthening the effectiveness of existing protected areas. It deals with formal protection by law, recognised in terms of the Protected Areas Act, including contract protected areas on private or communal land.
3. Restore and enhance ecological infrastructure. These actions focus on active interventions required to restore those biodiversity priority areas that are currently not in good ecological condition, in order to enhance ecological infrastructure and support delivery of ecosystem services." (Driver et al., 2012, p.148)

While further development in the various parts of the country is desirable, it is critical to ensure that natural open spaces and ecological infrastructure are kept intact, so that terrestrial ecosystems can continue to provide ecosystem services and support climate change resilience, and so that future generations can continue to enjoy the natural spaces and landscapes that are part of our heritage. If loss of natural habitats continues at current rates there will be little vegetation outside protected areas.

DMI 1 lessons learnt and the post-2015 agenda

While further development in the various parts of the country is desirable, it is critical to ensure that natural open spaces and ecological infrastructure are kept intact, so that terrestrial ecosystems can continue to provide ecosystem services and support climate change resilience, and future generations can continue to enjoy the natural spaces and landscapes that are part of our heritage. If loss of natural habitats continues at current rates there will be little vegetation outside protected areas.

DMI 2: Ecosystem threat status

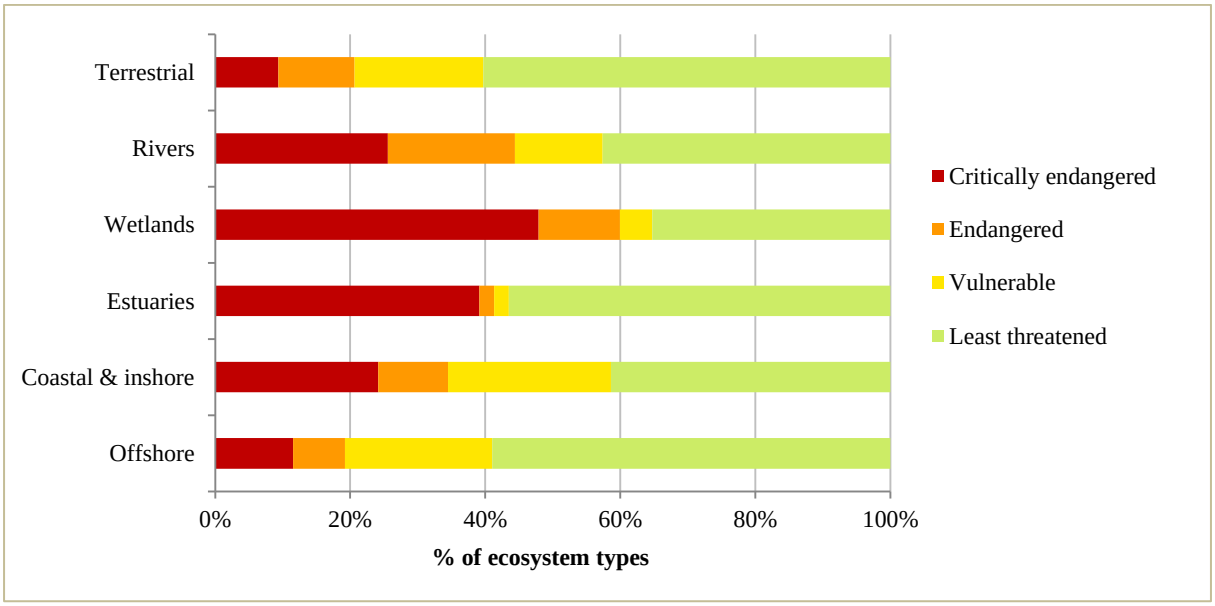
Target	Definition
South Africa's NBSAP sets the targets that by 2010 at least five key industries are actively avoiding threatened ecosystems in their production, planning and operations, and investing in managing threatened	The prevention of species extinction includes preventing further degradation and loss of structure, function and

ecosystems under their control and a national monitoring and evaluation framework for ecosystems and species is being piloted in priority areas, for threatened ecosystems and priority species of special concern. South Africa's National Biodiversity Framework sets the target that by 2013 threatened or protected ecosystems have been identified and listed, and the list has been updated at least once.	composition of threatened ecosystems.

The two headline indicators assessed in the South African National Biodiversity Assessment (NBA) 2011 are ecosystem threat status and protection levels (Driver et al., 2012). Ecosystem threat status shows the degree to which ecosystems are still intact or, alternatively, losing vital aspects of their structure, function and composition, on which their ability to provide ecosystem services ultimately depends. On the basis of the proportion of each ecosystem type that remains in good ecological condition relative to a series of thresholds, ecosystem types are categorised as critically endangered (CR), endangered (EN), vulnerable (VU) or least threatened (LT). Ecosystem protection level shows whether ecosystems are adequately protected or under-protected. On the basis of the proportion of each ecosystem type that occurs within a protected area recognised in the Protected Areas Act, such as a National Park, Nature Reserve or Marine Protected Area, ecosystem types are categorised as not protected, poorly protected, moderately protected or well protected (Driver et al., 2012).

Figure 14 presents ecosystem threat status in the terrestrial, river, wetland, estuarine, coastal and inshore, and offshore environments. Results show that wetlands are the most threatened of all South Africa's ecosystems, with 48% of wetland ecosystem types critically endangered. Wetlands make up only 2.4% of the country's area and this area represents high-value ecological infrastructure that provides critical ecosystem services such as water purification and flood regulation. Many of South Africa's wetlands have already been irreversibly lost, which implies that all ecosystem services that were provided by them are being lost as well. In terms of endangered ecosystems, rivers have the highest rate (19%), while terrestrial ecosystems are the most vulnerable (19%). Similarly, terrestrial (60%), estuarine (57%) and marine and coastal habitat (53%) have the least threatened ecosystems (Figure 14).

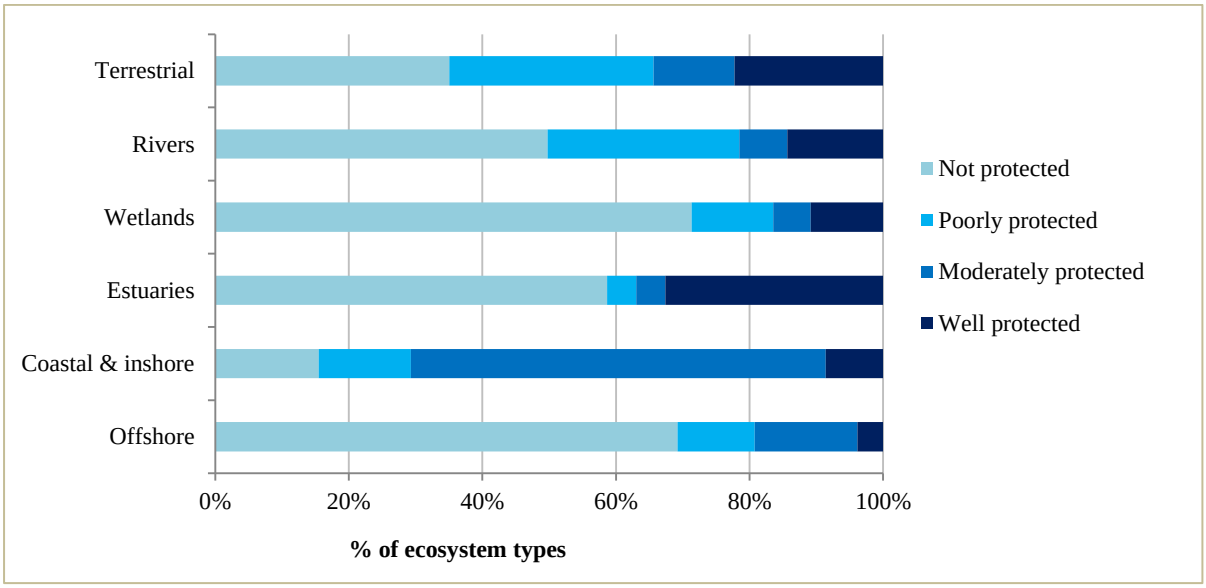
Figure 14: Comparison of ecosystem threat status in the terrestrial, river, wetland, estuarine, coastal and inshore, and offshore environments



Source: Driver et al. (2012)

Comparison of ecosystem protection levels in the terrestrial, river, wetland, estuarine, coastal and inshore, and offshore environments shows that offshore marine ecosystems are the most poorly protected ecosystems of all South Africa's ecosystems. Only 4% of offshore ecosystem types are well protected (Figure 15). According to the DEA (2011), about 40% of the population lives within 100 km of the coast and substantial pressure exists for infrastructure development. This has serious implications for the sustainability of marine and coastal resources if actions are not put in place to ensure their sustainability.

Figure 15: Comparison of ecosystem protection levels in the terrestrial, river, wetland, estuarine, coastal and inshore, and offshore environments



Source: Driver et al. (2012)

The DEA has a number of national policies and strategies in place to protect terrestrial and marine and coastal resources, such as the NPAES; Provincial Protected Area Expansion Strategies; SANParks – Land acquisition plan; National Environmental Management: Protected Areas Act; National Protected Areas Database; and the National Biodiversity Framework (DEA, 2012). Furthermore, positive progress has been made in mainstreaming biodiversity into different production sectors. For example, SANBI through its partners has published Biodiversity and Mining Guidelines and similar work is underway in other sectors. In addition, South Africa has successfully established biodiversity stewardship programmes in the last seven years, which are making a significant contribution to meeting national protected area targets (Driver et al., 2012). South Africa has achieved the target of having a list of protected or threatened ecosystems by 2011, and is on track to achieve an updated list by 2013.

DMI 4: Percentage of permitted landfill sites (Decrease in number of unlicensed waste disposal sites)

Target	Definition
To have 80% of the 341 known unlicensed landfill sites licensed by 2015.	A waste disposal site (landfill) is a place that is used for the disposal of waste.

The results for permitted landfills for 2012/13 of 4.3%, which is equivalent to a total of 15 sites, shows that South Africa is still very far from meeting its target of having 80% of the 341 known unlicensed landfill sites licensed by 2015. The identified sites will be licensed as per the Environmental Impact Assessment Regulations. The target for 2012/13 was 56 licences issued, however, only 15 sites where licensed. The intended number of sites to be licensed

in 2013/14 is 101; however, due to financial constraints, the achievable target will be 15. Steps taken by the DEA to address the licensing of landfills include the institution of the National Environmental Management Waste Act and National Waste Management Strategy. The DEA has also instituted training programmes for landfill site managers and has established a licensing task team to fast track the process. More resources are required to improve and complement steps taken by the DEA to address the licensing of landfills.

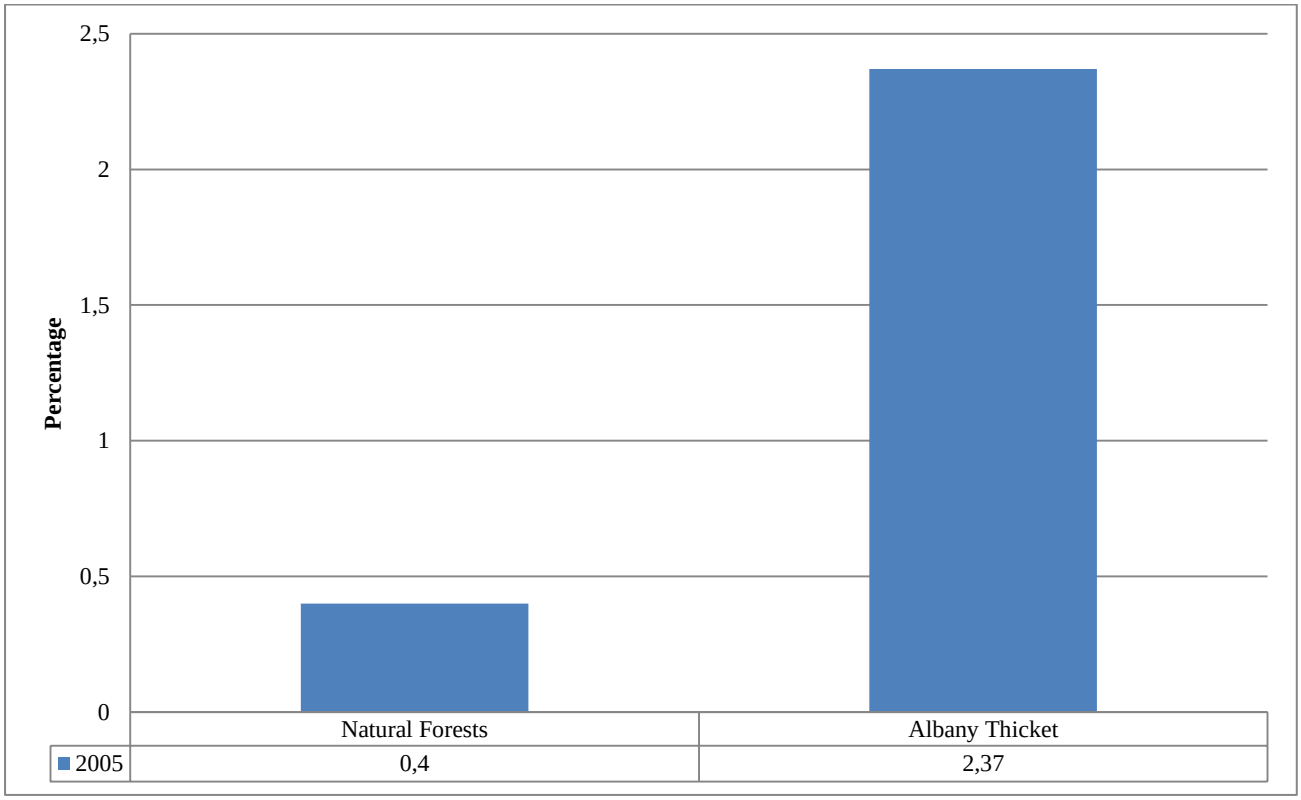
DMIs 6 & 8: Proportion of land area covered by Natural Forests and Albany Thicket

Target	Definition
Reduce biodiversity loss	DMI 6: A natural forest is legally defined as a group of indigenous trees whose crowns are largely contiguous or which have been declared by the Minister to be a natural forest under section 7(2);(xxviii) of the National Forests Act. Scientifically, a natural forest is a generally multi-layered vegetation unit dominated by trees (largely evergreen or semi-deciduous), whose combined strata have overlapping crowns (i.e. the crown cover is 75% or more), and where graminoids in the herbaceous stratum (if present) are generally rare. Fire does not normally play a major role in forest function or dynamics except at the fringes" (Shackleton, et al., 1999). DMI 8: Albany Thicket: biologically/ecologically thicket "seems to fit neither the definition of true woodland nor forest. It is however defined as a biome characterized by a sparse to dense spiny evergreen shrub vegetation, with a tree component of varying proportions." "Dictionary of Forest Structural Terminology" (Geldenhuys et al., 1988).

The proportion of land area covered by natural forests and Albany Thicket was 0.4% and 2.37% respectively for 2005 (Figure 16). The most recent National Land Cover (NLC) assessment was released in 2005 and no assessment has been published since then; hence, the figures are only reported for 2005. Indigenous forests constitute about 0.4% of the land surface in South Africa. The indigenous forests biome, however, encompasses extensive areas and contains resources valued for biodiversity, ecotourism, timber production and non-timber forest products, particularly firewood, poles and medicine (DAFF, 2011). Indigenous forests are mainly located in the Eastern Cape and KwaZulu-Natal provinces (Figure 17). Figure 18 shows the extent of Albany Thicket in the country. Albany Thicket is found in the Eastern and Western Cape provinces. According to the DAFF's 2011 report about the state of forestry, the NLC data sets show that natural forests are stable, although evidence exists of decline in some areas and increases in many other areas. The state of the forest report argues that there is no concrete data to back up these claims at a national level or to quantify the loss or gain.

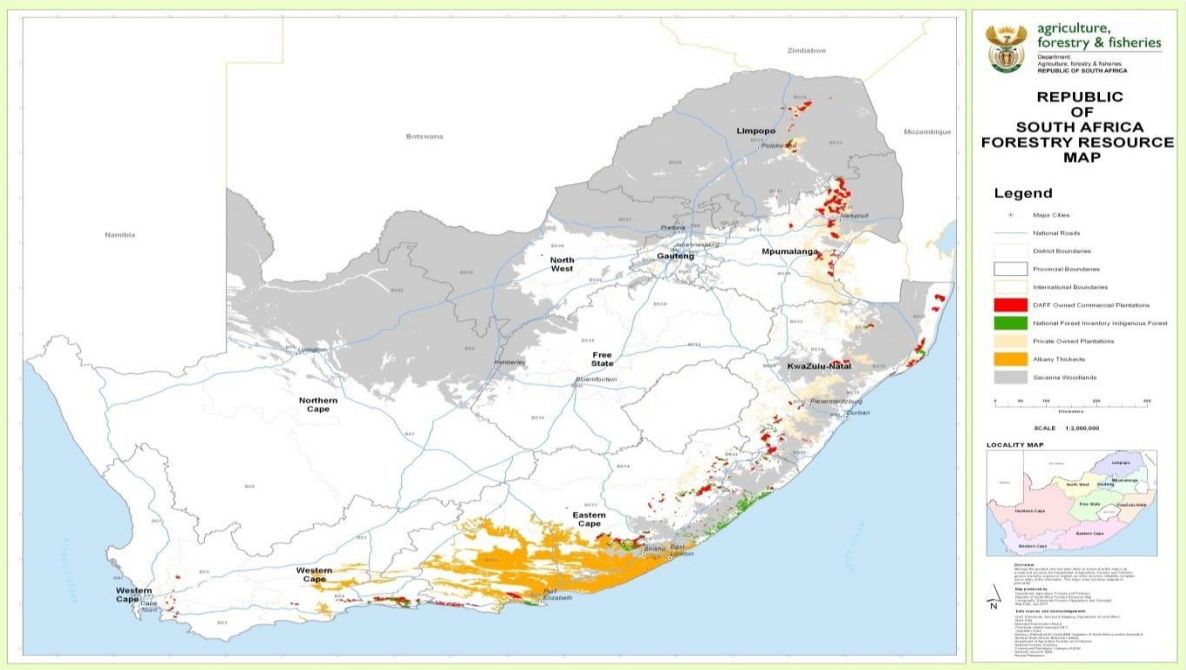
South Africa has put in place several interventions to ensure sustainable forest management. In terms of the National Forest Act, all indigenous forests are protected. Several individual threatened forest patches of high conservation value are listed for protection under the National Environmental Management Biodiversity Act (Act 10 of 2004). The DAFF together with SANBI identified and listed three forest types as endangered and six as vulnerable in the list of threatened ecosystems.

Figure 16[46]: Proportion of land area covered by natural forests and Albany Thicket



Source: DAFF, (2013)

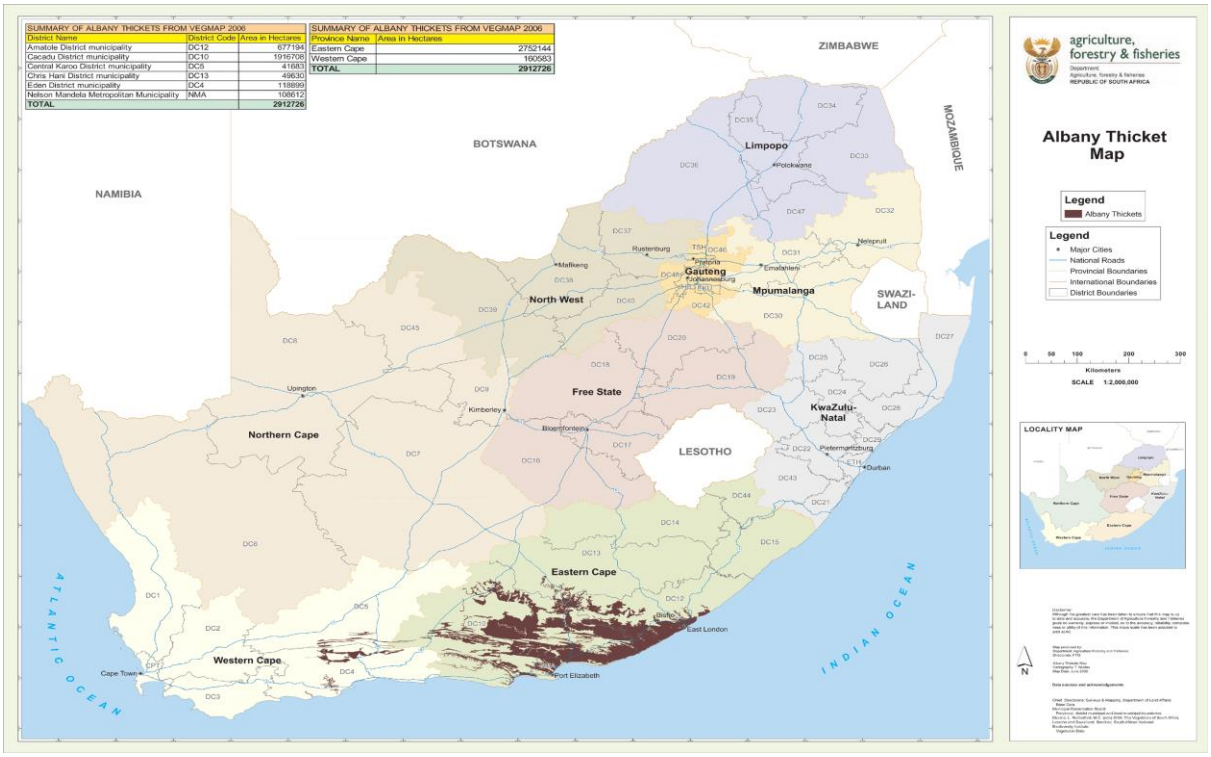
Figure 17: Republic of South Africa forest resource map



Source: DAFF (2013)

[46] These two indicators are combined in this figure for ease of presentation, since the data covers the same period.

Figure 18: Albany Thicket map



Source: DAFF (2013)

DMI 6&8 lessons learnt and the post-2015 agenda

There is a need to ensure implementation of the various national policies and strategies (e.g. the National Protected Area Expansion Strategy (NPAES); Provincial Protected Area Expansion Strategies; SANParks – Land acquisition plan; National Environmental Management: Protected Areas Act; National Protected Areas Database; and the National Biodiversity Framework) to protect terrestrial and marine and coastal resources.

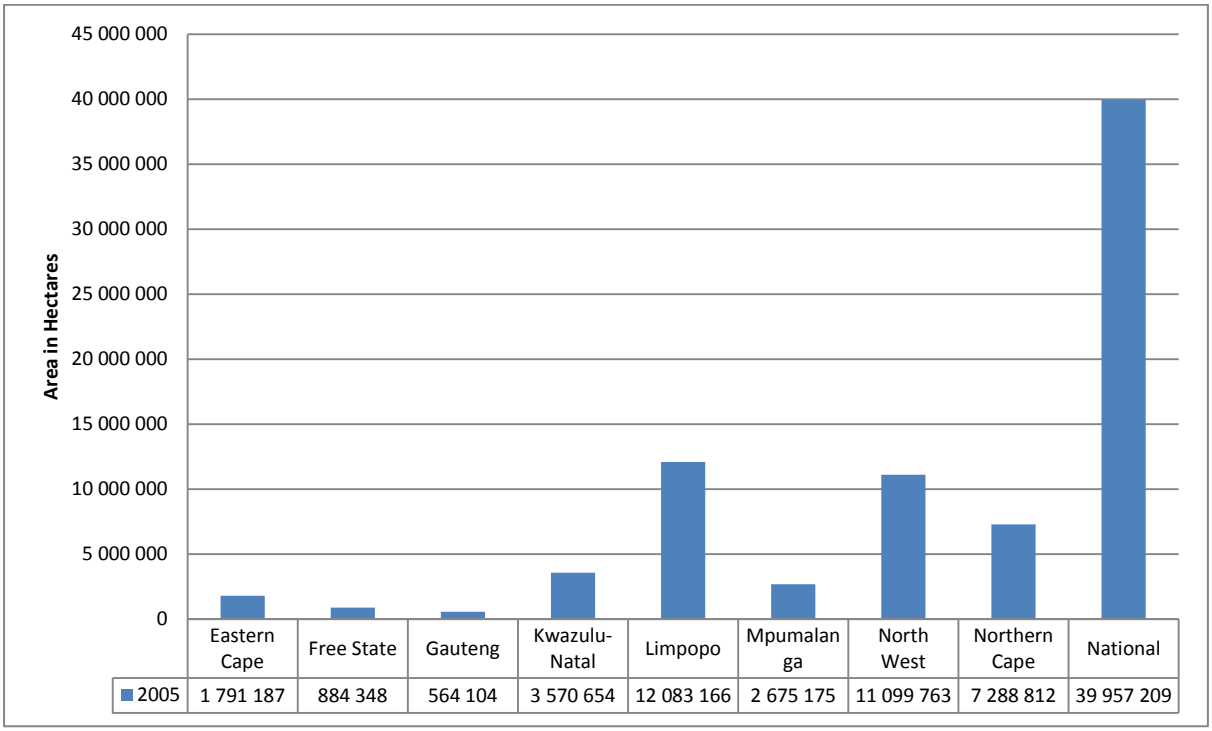
DMI 7: Proportion of land area covered by Savannah Woodlands

Target	Definition
Reduce biodiversity loss	A woodland is legally defined as a group of indigenous trees which are not a natural forest, but whose crowns cover more than 5% of the area bounded by the trees forming the perimeter of the group (National Forests Act, 1998). Scientifically, the term savannah or woodland refers to a suite of tropical and subtropical vegetation types in which fire-adapted, co-dominant, continuous or discontinuous herbaceous and largely deciduous woody strata experience markedly seasonal growth patterns and processes in relation to the seasonal delivery of precipitation, which occurs during hot summers, followed by cooler, but warm, dry winters (Geldenhuys et al., 1988).

South Africa is mainly covered by dry savannah woodlands and bushveld owing to its dry climatic conditions (DAFF, 2011). The proportion of land area covered by savannah woodlands is presented in Figure 19. Savannah woodlands are located predominantly in Limpopo, Northern Cape and North West. Other provinces with relatively high proportions of land area under savannah woodlands include KwaZulu-Natal, Mpumalanga and the Eastern Cape (

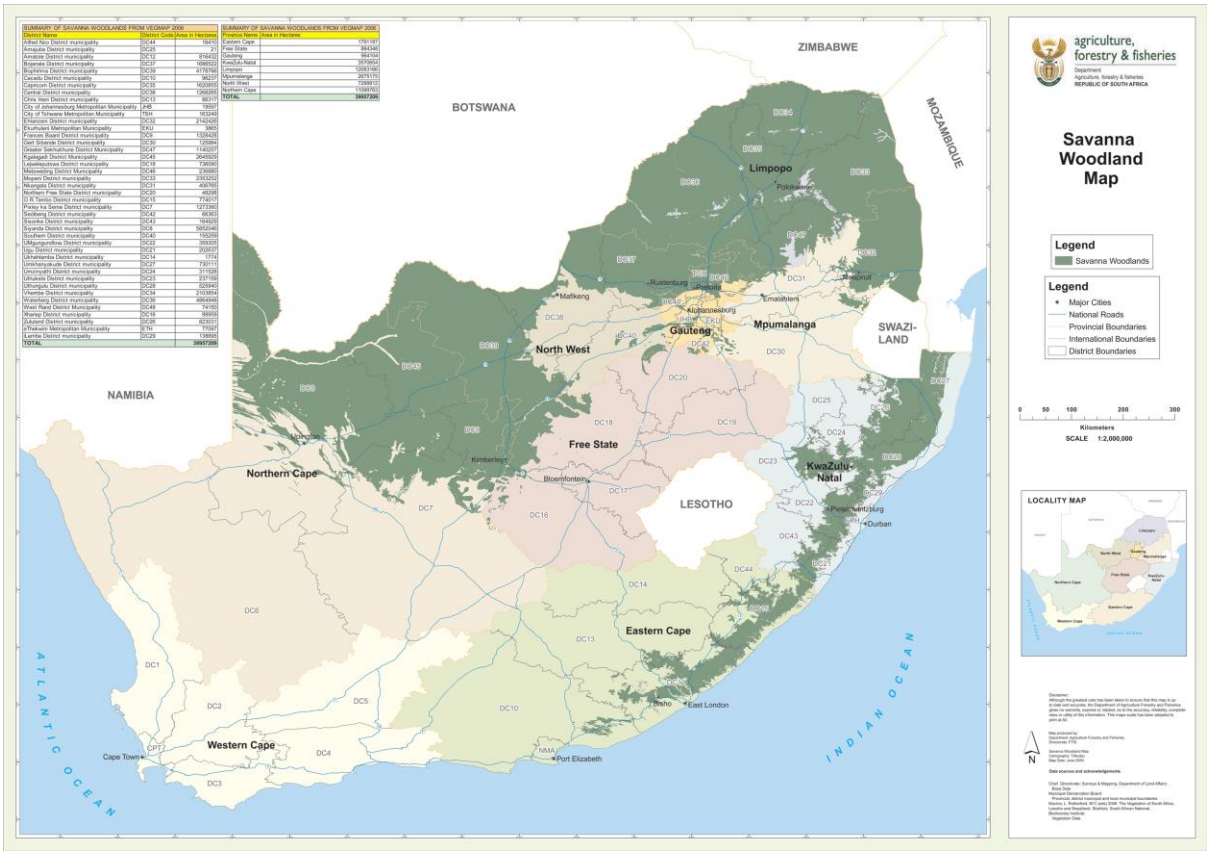
Figure 20). Savannah woodlands are important sources of livelihood, especially for rural people in communal areas of South Africa. Examples of products produced from the woodlands are wood and non-wood products for fuel, building material, household utensils, traditional fencing and a variety of food and medicinal items (DAFF, 2011). In addition, savannah woodlands provide important opportunities for tourism through their rich biodiversity. It is critical to conserve and maintain these woodlands to ensure sustained provision of these ecosystem services and benefits to the well-being of South African society, especially poor rural people that live in close proximity to woodland areas. Although NLC datasets show no significant changes to savannah woodlands, intensive use and consequent degradation as well as transformation of woodlands remain critical challenges that need to be addressed to ensure sustainability (DAFF, 2011). The National Forest Act only mandates the minister to monitor trends and address negative trends. There are species which are endemic to certain types of forests and if those forests are affected these species will disappear. This will affect biodiversity.

Figure 19: Proportion of land area covered by savannah woodlands



Source: SANBI

Figure 20: Savannah woodland map



Source: Department of Agriculture, Forestry and Fisheries

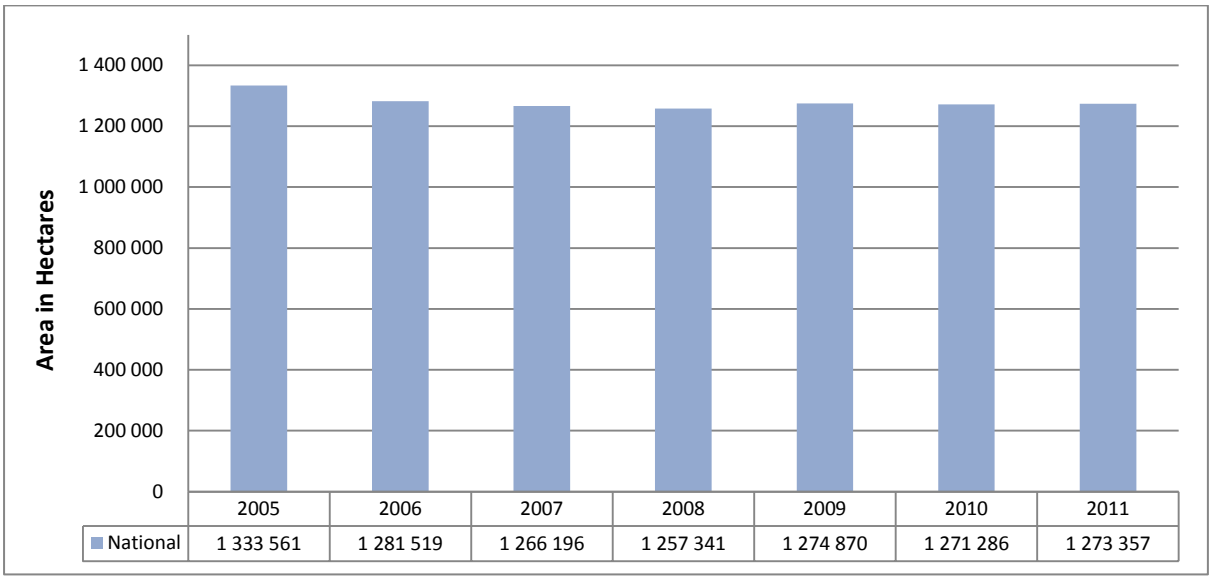
DMI 9: Proportion of land area covered by Commercial Plantations

Target	Definition
None	A plantation is legally defined as a group of trees cultivated for exploitation of the wood, bark, leaves or essential oils in the trees (National Forests Act, 1998). Forest is defined in the Food and Agriculture Organization's (FAO) Global Forest Resources Assessment as land spanning more than 0.5 hectares with trees higher than five metres and a canopy cover of more than 10%, or trees able to reach these thresholds in situ. It does not include land that is predominantly under agricultural or urban land use.

Between 2006 and 2011, Mpumalanga had the highest proportions of land area covered by commercial plantations, followed by KwaZulu-Natal, the Eastern Cape, Western Cape, Limpopo and the North West (Figures 21 and 22). Commercial plantation forestry in South Africa encompasses the large planted forests (established to supply raw materials to satisfy mining, construction and industrial markets) that supply the pulpmills, sawmills and factories that process the raw materials. While plantations are important for economic purposes they also play a crucial role in biodiversity conservation and carbon sequestration. This means

that reduction in area under plantations can affect biodiversity issues, and capacity of forest to mitigate the effects of climate change, especially in areas within plantations that are classified as “high conservation areas”. Plantations are also important habitats for fauna and flora. For environmental considerations, trees are not planted on riparian zones and where this has been the case due to past practices, efforts have been made to clear such zones or once clear-felled, no further planting is done in such areas. Plantation area has been decreasing by % (based on Figure 21) between 2005 and 2011. However, this trend will be reversed through afforestation of some over a 100 000 hectares of virgin land identified in the KwaZulu-Natal, Mpumalanga and Eastern Cape (DAFF, 2009[47]).

Figure 21: Proportion of land area covered by commercial plantations

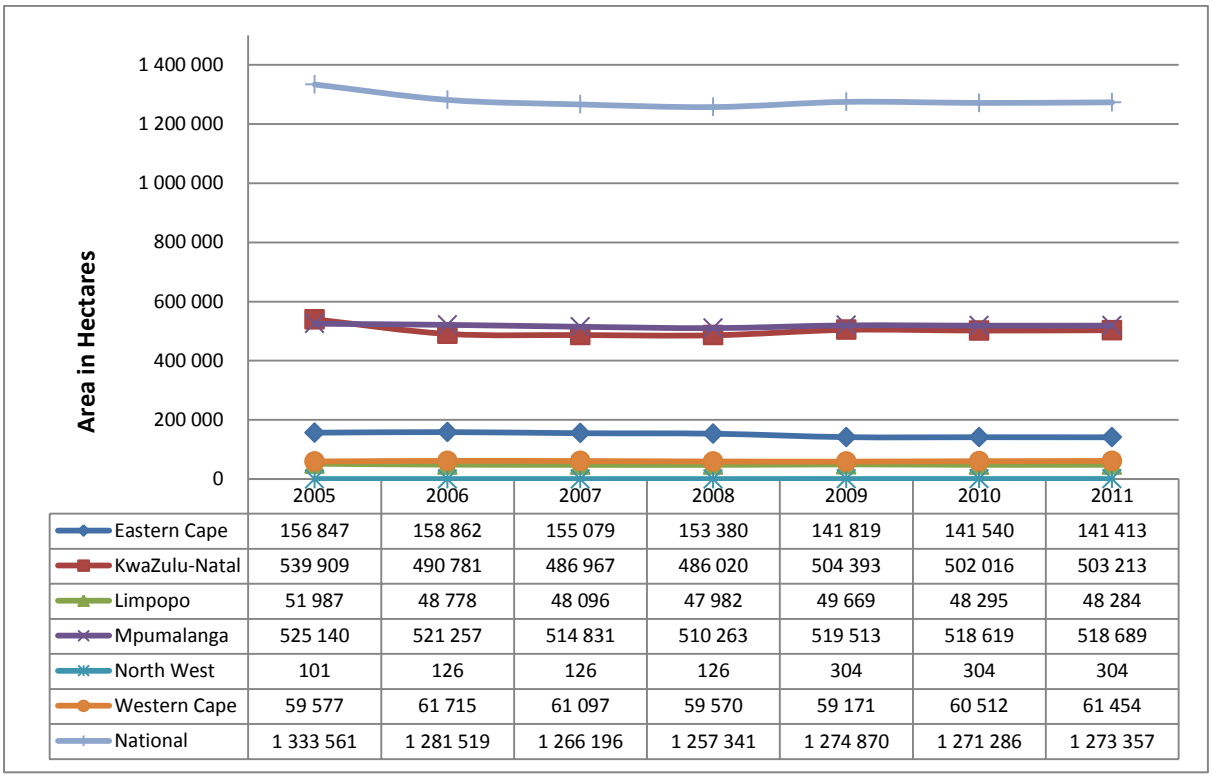


	2005	2006	2007	2008	2009	2010	2011
National	1 333 561	1 281 519	1 266 196	1 257 341	1 274 870	1 271 286	1 273 357

Source: DAFF (2013)

[47] DAFF, 2009. State of the Forests Report-2009.

Figure 22: Proportion of land area covered by commercial plantations by province



	2005	2006	2007	2008	2009	2010	2011
Eastern Cape	156 847	158 862	155 079	153 380	141 819	141 540	141 413
KwaZulu-Natal	539 909	490 781	486 967	486 020	504 393	502 016	503 213
Limpopo	51 987	48 778	48 096	47 982	49 669	48 295	48 284
Mpumalanga	525 140	521 257	514 831	510 263	519 513	518 619	518 689
North West	101	126	126	126	304	304	304
Western Cape	59 577	61 715	61 097	59 570	59 171	60 512	61 454
National	1 333 561	1 281 519	1 266 196	1 257 341	1 274 870	1 271 286	1 273 357

Source: DAFF (2013)

DMI 9 lessons learnt and the post-2015 agenda

It is critical to protect natural forest areas from further development through the various policies and strategies put in place by the DAFF and partners. Guidelines on property development have been developed and should be strictly implemented going forward and post 2015.

DMI 10: Proportion of households with access to electricity

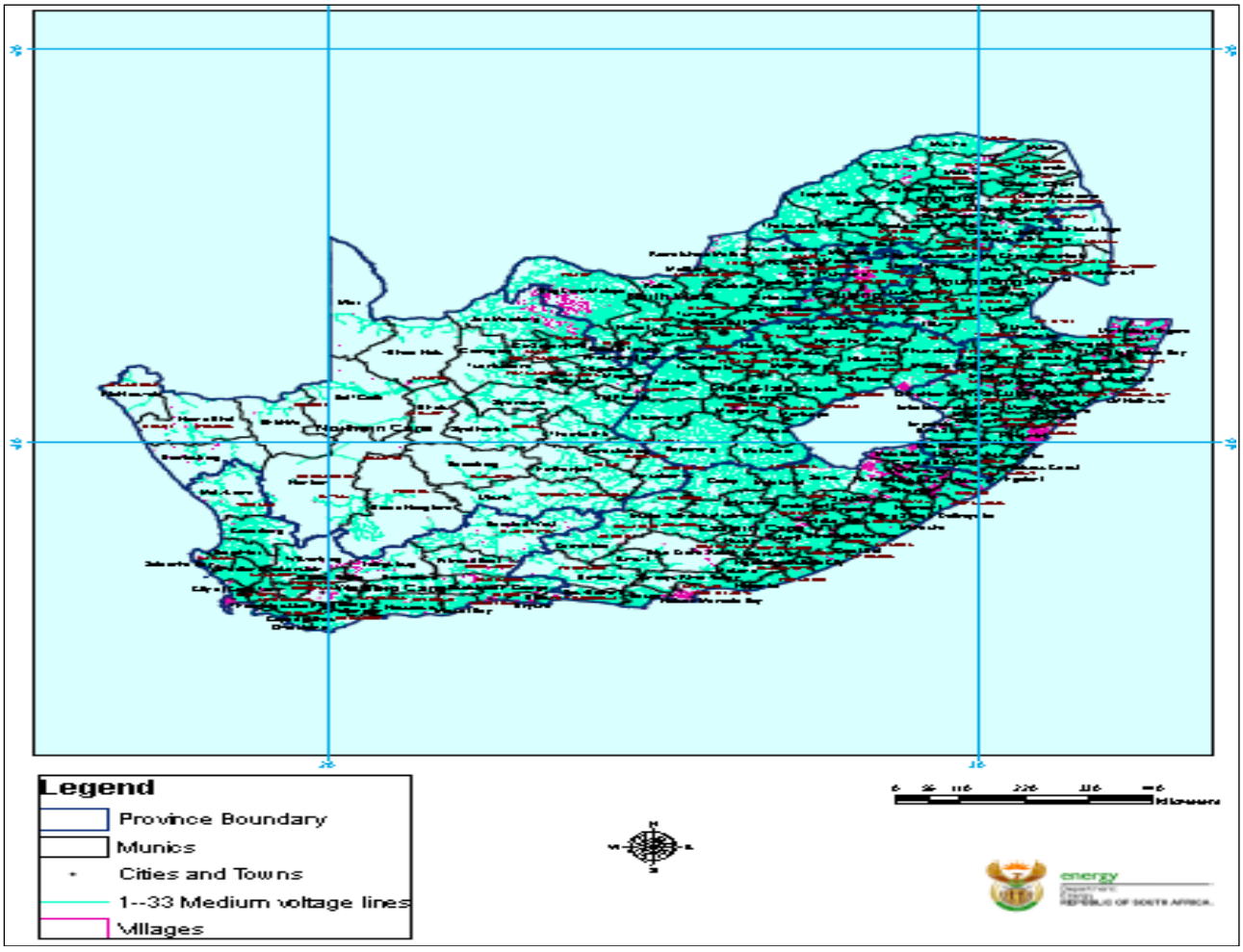
Target	Description
To increase the proportion of access from 81% in 2009 to 92% by 2014. Going forward in line with the NDP the target is to reach universal access by 2025 in which 90% will be grid technologies and 10% will be non-grid technologies.	Proportion of households with access to electricity

At the United Nations Millennium Summit in September 2000, world leaders placed development at the heart of the global agenda by adopting the MDGs. The MDGs provide concrete, time-bound objectives for dramatically reducing extreme poverty in its many dimensions by 2015 income poverty, hunger, disease, exclusion, and lack of infrastructure and shelter while promoting gender equality, education, health, and environmental

sustainability. Although none of the MDG refers to energy explicitly, improved energy services including modern cooking fuels and expanded access to electricity are necessary for meeting all the goals (Modi, McDade, Lallement & Saghir 2013). For instance, cooking with coal, firewood, crop residues or dung is associated with a significantly higher child mortality rates, diminishing maternal health and general disease burden from smoke.

When the newly-elected government of South Africa assumed office in 1994, it was faced with a myriad of infrastructural and service delivery backlogs. Prior to 1994 the minority white population were the main beneficiaries of the government's energy investments in the residential sector. Since democracy, however, access to electricity by urban and rural households across class and racial categories has become a core priority of the state. Since 1994 the Integrated National Electrification Programme (INEP) has been able to connect 5.4 million households and to date about 85% of all households in South Africa have access to electricity (DOE, 2012) see medium voltage (Mv) network map (Figure 23). From 1994 to 2011, government had successfully increased the proportions of households that have access to energy from 30% to 85% (DOE, 2012). It is now striving to realise 92% by 2014. In striving towards universal access to energy and quality services it was imperative to conduct residential sector survey gathering information about energy- related perception and behaviour in South Africa.

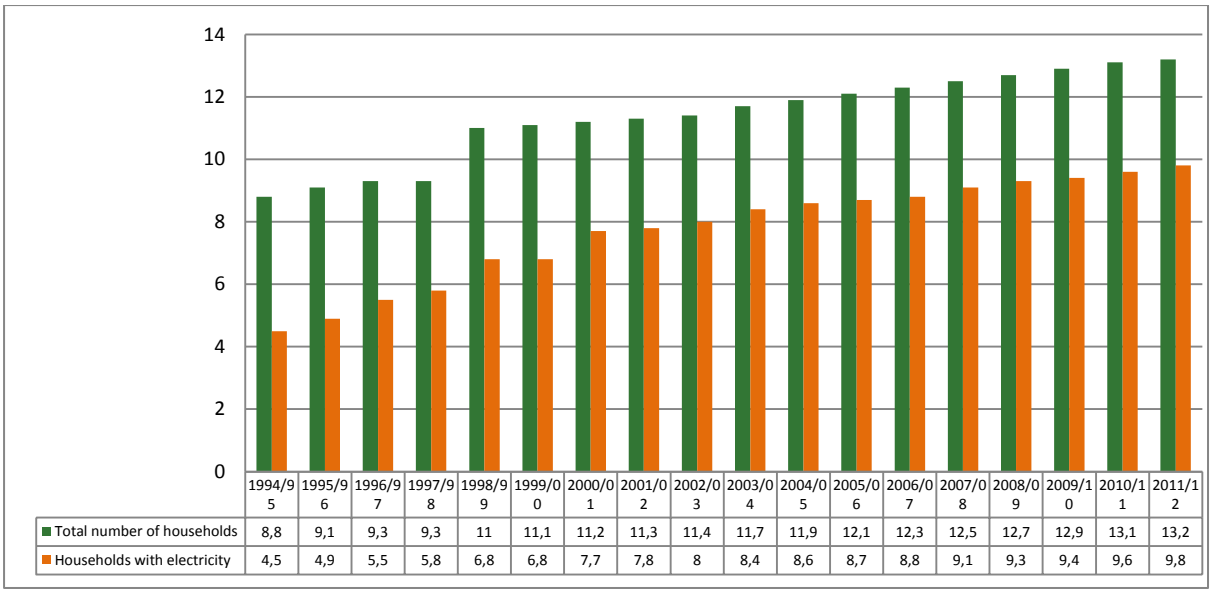
Figure 23: Master Plan Mv Lines Status (Eskom Area)



Source: DOE (2013)

There are still several challenges hindering the progress of the INEP. In 2012 the Department of Energy commented on the progress of the INEP and conceded that the biggest chunks that had not been electrified were in Kwazulu-Natal, the Eastern Cape and Gauteng. In total the backlog of un-electrified households was 3,388,156 (Figures 24 and 25). As noted by the PMG (2011), the total backlog of un-electrified households was 3 388 156, with 1 159 691 arising from informal households and 2 228 465 from formal households in 2011 respectively. In the Eastern Cape the biggest backlog was in the formal rural settlement sector, however in Gauteng it was in the informal sector, owing to challenges of rapid urbanisation (PMG, 2011). The challenges that they were faced with included un-electrifiable informal settlements and terrain/topography that was characterized by scattered settlements typical of KwaZulu-Natal.

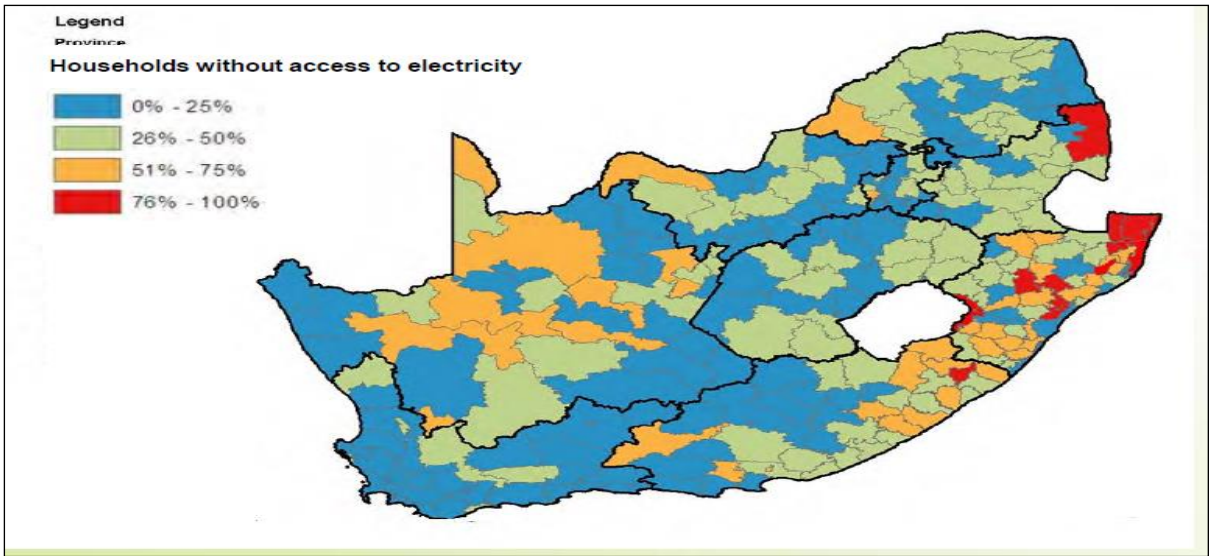
Figure 24: Total number of households and electrified households in South Africa (millions)



	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Total number of households	8,8	9,1	9,3	9,3	11	11,1	11,2	11,3	11,4	11,7	11,9	12,1	12,3	12,5	12,7	12,9	13,1	13,2
Households with electricity	4,5	4,9	5,5	5,8	6,8	6,8	7,7	7,8	8	8,4	8,6	8,7	8,8	9,1	9,3	9,4	9,6	9,8

Source: DOE (2012)

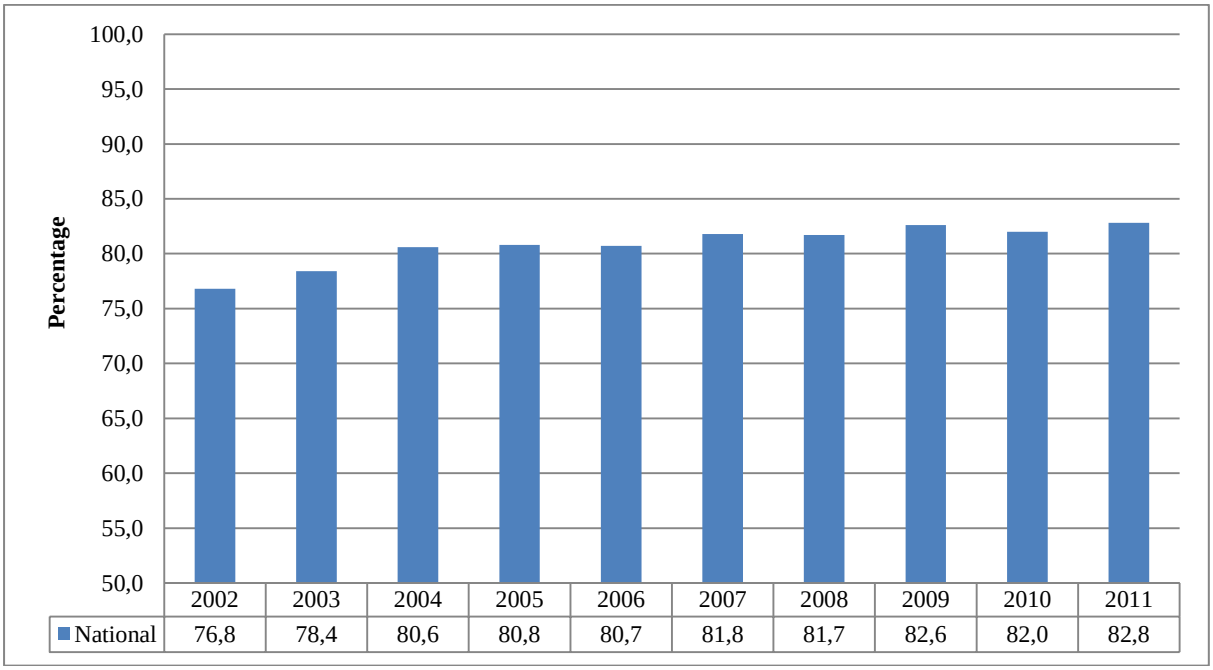
Figure 25: Backlog in access to electricity



Source: DOE (2013)

Another issue hindering the speed of connections is the household growth factor. Since 1994, the numbers of households supplied had increased, which continue to challenge universal access, since the backlogs as well as the new developments needs to be serviced. All of these factors challenged the attainment of universal energy access and it was these challenges that saw government conceding that it would take more years before universal access to energy could be achieved in view of the pace of progress (Integrated National Electrification Programme, 2007). In line with the NDP, the Department is committed to universal access by 2025; Universal access will be achieved by both grid (90%) and non-grid (10%) technologies.

Figure 26: Proportion of households with access to electricity



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
National	76,8	78,4	80,6	80,8	80,7	81,8	81,7	82,6	82,0	82,8

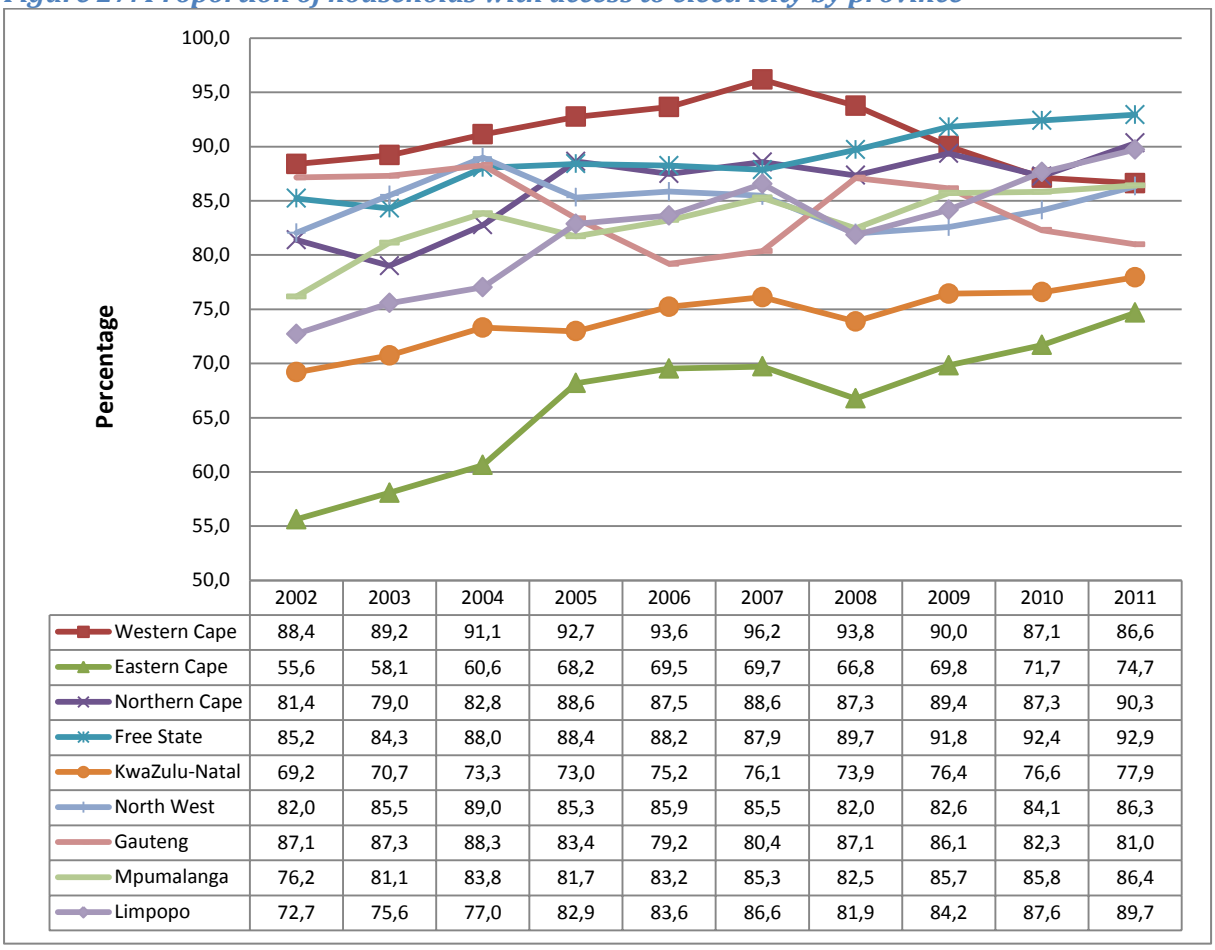
Source: GHS, 2002 – 2011

According to the GHS data provided for 2002 to 2011, at national level, the proportion of households with access to electricity increased from 76.8% in 2002 to 80.8% in 2005, before reaching 82.8% in 2011 (Figure 26). Nevertheless, while the domesticated target of 92% access to electricity may not be achieved by 2014, significant progress has been made in terms of establishing relevant regulatory frameworks and policies to date. Those regulatory frameworks and policies include: the Energy White Paper, the Electricity Regulation Act, and the Free Basic Electricity (FBE).

The low access to basic services at the dawn of democracy in 1994 required the government to take the necessary actions to address challenges of service delivery, which stemmed from huge disparities in incomes and poverty levels among the different population groups in the country. Poorer households in South Africa are carrying an enormous energy burden. Remarkable strides have been accomplished by the Department in cushioning the poor

against high energy costs. Policies such as the FBE, Free Basic Alternative Energy (FBAE) and Inclined Block Tariff (IBT) have been developed and offer welcome relief to ensure that these households do not get trapped even deeper into poverty and vulnerability. Currently, the FBE policy allows electrified poor households up to 50kWh of electricity free of charge. A household survey on energy showed that about 69% of households in South Africa are benefitting from the FBE provision (DOE, 2012). Non-electrified households benefit from the FBAE. In April 2010 the IBT was also introduced, implying that lower-consuming customers benefit from a lower tariff rate. All of these policies are designed to assist poor households.

Figure 27: Proportion of households with access to electricity by province[48]



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Western Cape	88,4	89,2	91,1	92,7	93,6	96,2	93,8	90,0	87,1	86,6
Eastern Cape	55,6	58,1	60,6	68,2	69,5	69,7	66,8	69,8	71,7	74,7
Northern Cape	81,4	79,0	82,8	88,6	87,5	88,6	87,3	89,4	87,3	90,3
Free State	85,2	84,3	88,0	88,4	88,2	87,9	89,7	91,8	92,4	92,9
KwaZulu-Natal	69,2	70,7	73,3	73,0	75,2	76,1	73,9	76,4	76,6	77,9
North West	82,0	85,5	89,0	85,3	85,9	85,5	82,0	82,6	84,1	86,3
Gauteng	87,1	87,3	88,3	83,4	79,2	80,4	87,1	86,1	82,3	81,0
Mpumalanga	76,2	81,1	83,8	81,7	83,2	85,3	82,5	85,7	85,8	86,4
Limpopo	72,7	75,6	77,0	82,9	83,6	86,6	81,9	84,2	87,6	89,7

Source: GHS, 2002 – 2011

Figure 27 shows that household access to electricity has been increasing for most provinces, except for Gauteng and the Western Cape declines recorded from 2007. The decline in access for these two most developed provinces could be attributed to the rapidly growing urban populations arising from migration of people into informal settlements in these provinces. In 2002, the Western Cape had the highest proportion (88.4%) of households with access to electricity, followed by Gauteng (87.1%), Free State (85.2%), North West (82%) and Northern Cape (81.4%). In 2005, the province with the highest proportion of access to

[48] Although estimates from the General Household Survey (GHS) display similar trends over time than data from studies by the Department of Energy, magnitudes often differ slightly.

electricity was again the Western Cape (92.7%), followed by the Northern Cape (88.6%), Free State (88.4%), North West (85.3%), Gauteng (83.4%) and Limpopo (82.9%). In 2011, the leading provinces were the Free State (92.9%), Northern Cape with a significant improvement to 90.3%, the Western Cape (86.6%) and Gauteng (81.3%), respectively. Although the domesticated target of 92% access by 2014 may not be reached, a rate of access to electricity in excess of 70% for all the provinces shows that South Africa has made significant strides towards improving access to electricity for its population.

DMI 10 lessons learnt and the post-2015 agenda

Targets for access to improved service delivery (e.g. electricity) need to take into account planning for bulk infrastructure and to factor in the continuous maintenance of infrastructure where it is already in place. It is critical to make provision for new infrastructure only in those areas where it is needed, while maintaining the rest to ensure that access is based on availability of facilities and on the delivery of the service itself.

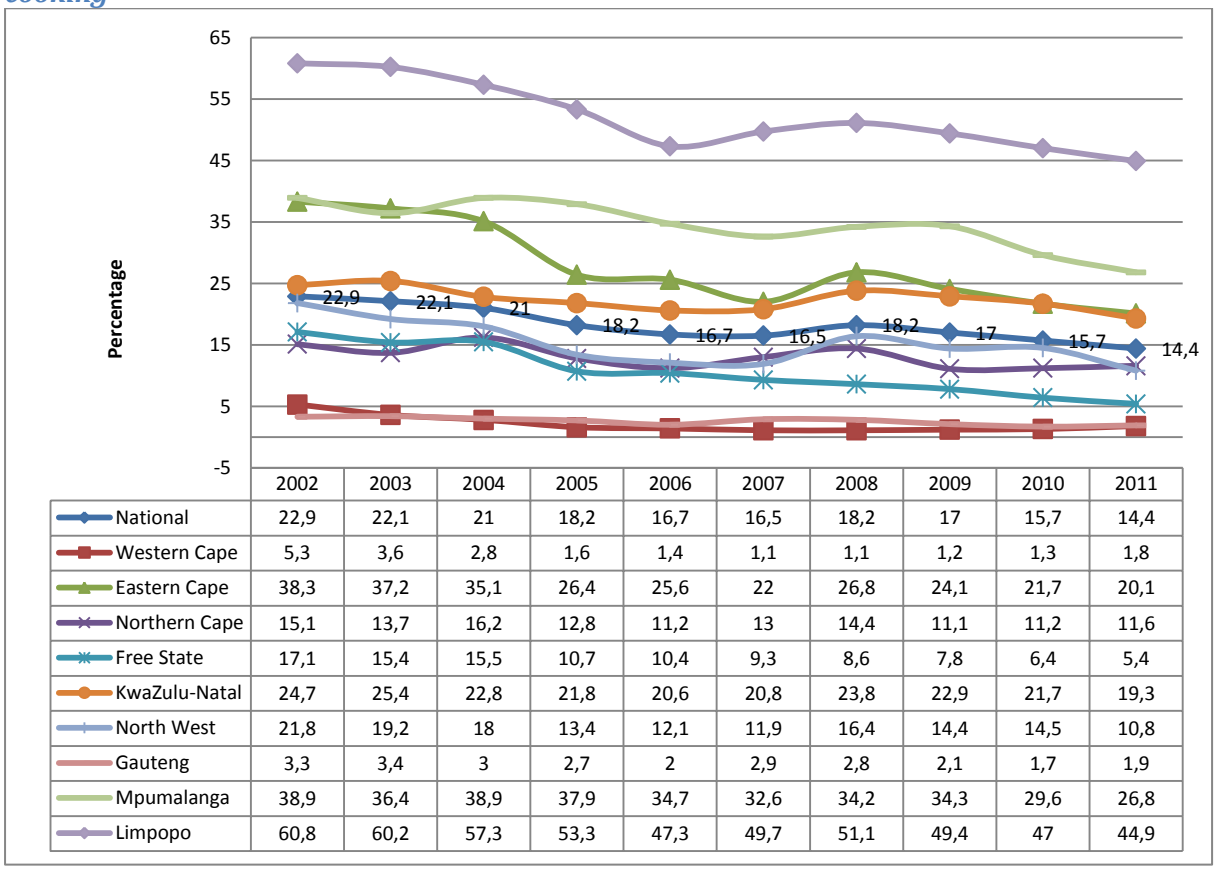
Growing urbanisation presents challenges for access to electricity and other services in urban areas. Informal settlements – most of these areas are not proclaimed and it is difficult for the government to electrify areas that are not proclaimed and not sure if they will be moved/relocated to other areas. In rural areas the main challenges include lack/no infrastructure, topography, scattered settlements and households.

DMI 11: Proportion of population using solid fuels as primary source of energy: Cooking

Target	Definition
None	The percentage of households that use solid fuels as the primary source of energy for cooking are households that use coal, wood and dung for cooking.

In addition to the target of achieving overall access to electricity for the South African population, the government has set other targets: to distinguish access by type of energy source for cooking (DMI 11) and for heating (DMI 12). The domesticated target related to cooking facilities is presented in Figure 28.

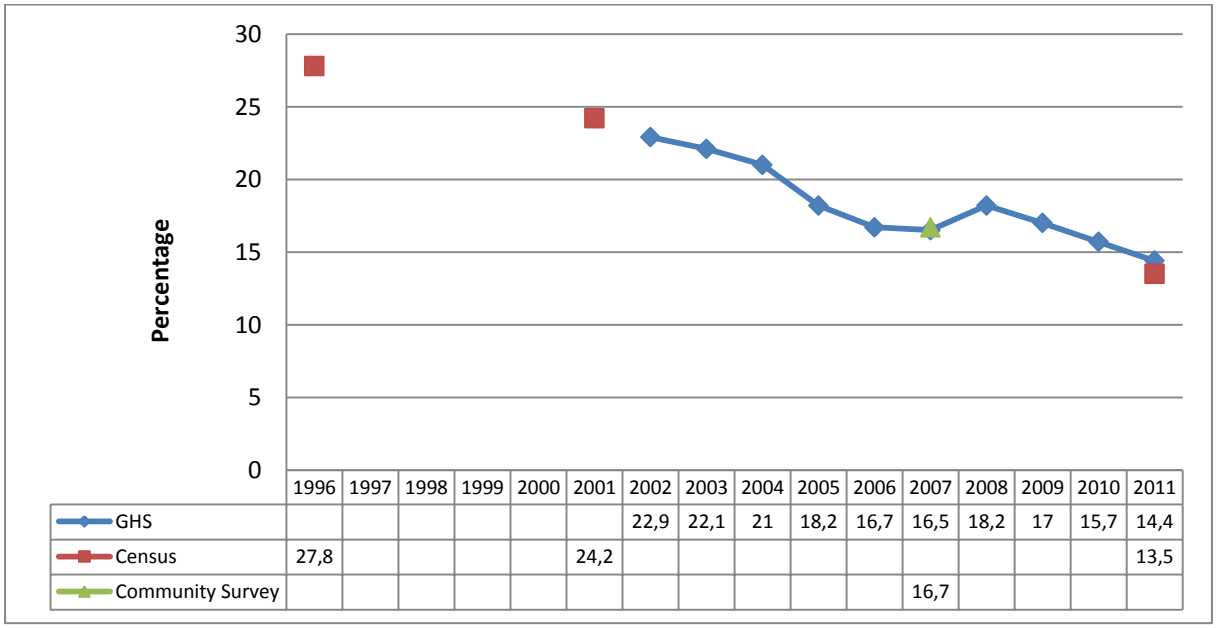
Figure 28: Proportion of households using solid fuels as primary source of energy for cooking



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
National	22,9	22,1	21	18,2	16,7	16,5	18,2	17	15,7	14,4
Western Cape	5,3	3,6	2,8	1,6	1,4	1,1	1,1	1,2	1,3	1,8
Eastern Cape	38,3	37,2	35,1	26,4	25,6	22	26,8	24,1	21,7	20,1
Northern Cape	15,1	13,7	16,2	12,8	11,2	13	14,4	11,1	11,2	11,6
Free State	17,1	15,4	15,5	10,7	10,4	9,3	8,6	7,8	6,4	5,4
KwaZulu-Natal	24,7	25,4	22,8	21,8	20,6	20,8	23,8	22,9	21,7	19,3
North West	21,8	19,2	18	13,4	12,1	11,9	16,4	14,4	14,5	10,8
Gauteng	3,3	3,4	3	2,7	2	2,9	2,8	2,1	1,7	1,9
Mpumalanga	38,9	36,4	38,9	37,9	34,7	32,6	34,2	34,3	29,6	26,8
Limpopo	60,8	60,2	57,3	53,3	47,3	49,7	51,1	49,4	47	44,9

Source: GHS, 2002 – 2011

Figure 29: Proportion of population using solid fuels as primary source of energy: cooking (by various national surveys)



	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
GHS							22,9	22,1	21	18,2	16,7	16,5	18,2	17	15,7	14,4
Census	27,8					24,2										13,5
Community Survey												16,7				

Source: GHS, 2002 – 2012; Census 1996, 2001 and 2011, Community Survey, 2007

Figure 29 shows that, nationally, the proportion of households using solid fuels for cooking decreased from 22.9% in 2002 to 14.4% in 2011. The use of solid fuels (coal, firewood and dung) has been traced by various national surveys in South Africa (Figure 29). As is evident from the figure above, these independent surveys are fairly consistent in their reporting, showing reliable evidence that the use of solid fuels for cooking has been decreasing steadily since 1996. Within the provinces in 2011, Limpopo (44.9%), Mpumalanga (26.8%) and the Eastern Cape (20.1%) have the highest proportion of households using solid fuels for cooking among the different periods. Further, comparison of the 2005 and 2010 figures indicates a declining trend in the use of solid fuels for cooking both nationally and within provinces. The national figures show a decrease of 3.8% (between 2005 and 2011) and 1.3% (between 2010 and 2011) in the percentage of households that use solid fuels as their primary source of energy for cooking. The decline in the use of solid fuels as energy sources could be attributed to a higher use of alternative energy sources, such as electricity and solar. However, the use of the relatively cleaner sources of energy has been found to change by level of income. The household survey showed that low-income households rely more on multiple energy sources (i.e. electricity, firewood, paraffin, gas, solar and coal), with firewood and paraffin accounting for 34%, while high-income households rely more (65%) on electricity only as their source of energy (Department of Energy, 2012).

In 1996 the use of solid fuels for cooking was common among a quarter of the population (28%) but in 2011 this had dropped significantly to 14%. Census 2011 figures further reveal that, although the use of solid fuels for cooking have declined, it is still fairly common in certain provinces such as Limpopo (44%), Mpumalanga (22%), Eastern Cape and KwaZulu Natal (both 20%). Even with access to electricity, households with cheap and freely access to readily solid fuels would use these other sources of energy. According to DOE (2012), households use solid fuels for cooking and heating mainly for economic reasons such as high cost of electricity compared to cheaply and readily available firewood (e.g. in KZN and Limpopo) and coal (e.g. in Mpumalanga). At the provincial level, between 2002 and 2011 the highest decreases in percentage of households using solid fuels as their primary source of energy for cooking were reported in Mpumalanga (11.1%); Limpopo (8.4%) and Eastern Cape (6.3%), between 2002 and 2006. All provinces recorded a slight increase in the use of solid fuels between 2007 and 2008, which reduced thereafter going to 2011, except for the Western Cape (0.5%) and Gauteng (0.2%) between 2010 and 2011. The energy use pattern between the different provinces, with the increase for Gauteng and the Western Cape, could be linked to migration and increasing urban populations, especially in the informal settlements of these provinces. The implications are that the lower the proportions of use of solid fuels for cooking, the higher the chances of those provinces achieving improved access to cleaner energy sources.

DMI 11 lessons learnt and the post-2015 agenda

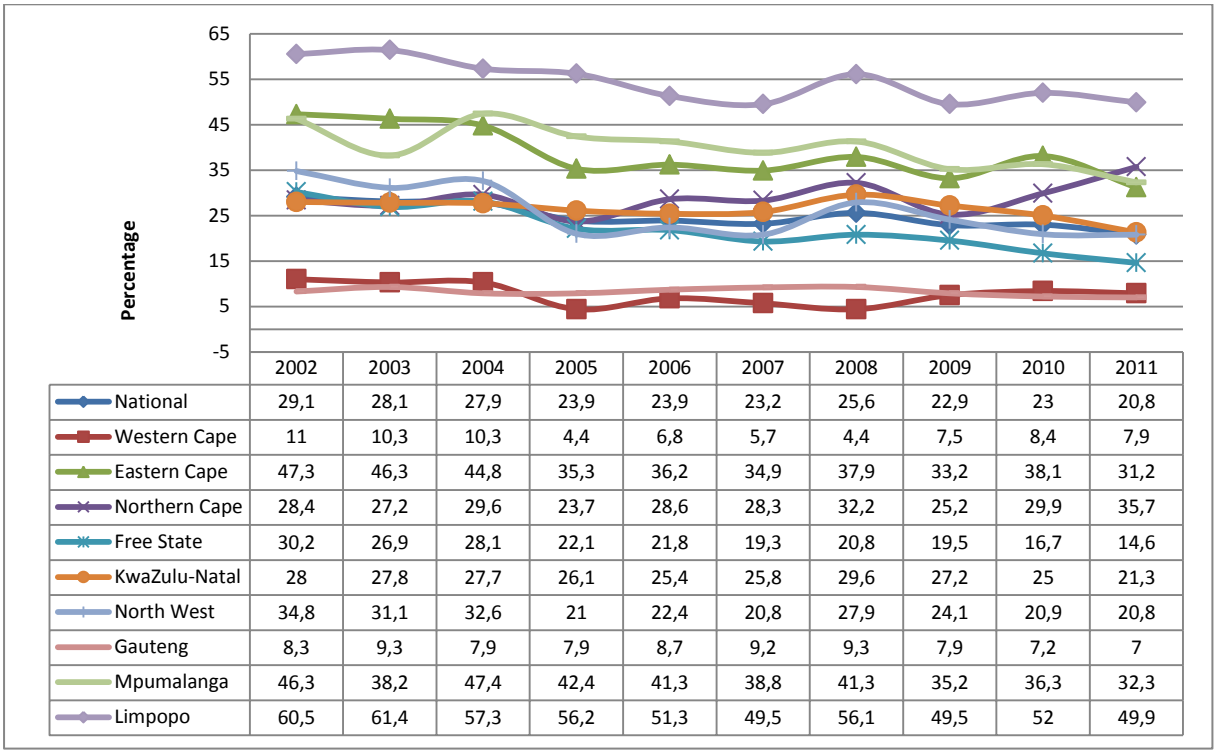
Ensuring affordable access and productive use of the relatively cleaner sources of energy, particularly among poor households, should be central to post-2015 agenda on energy access. Growing urbanisation presents challenges for access to electricity and other services in urban areas. Informal settlements – most of these areas are not proclaimed and it is difficult for the government to electrify areas that are not proclaimed and not sure if they will be moved/relocated to other areas. In rural areas the main challenges include lack/no infrastructure, topography, scattered settlements and households.

DMI 12: Proportion of population using solid fuels as primary source of energy: Heating

Target	Definition
None	The percentage of households that use solid fuels as primary source of energy for heating are households that use coal, wood and dung for heating.

Figure 30 shows a declining trend in the use of solid fuels for heating between 2002 and 2011, with a slight increase in 2008 – both nationally and among the different provinces. As was the case with cooking, the use of solid fuels for heating has also declined significantly over two decades (Figures 30 and 31). In 1996 more than a third (37%) of the population reported using solid fuels for heating. Since then this figure has decreased and the latest Census figures reveal that only 17% of the total households are currently using solid fuels for heating. At the national level, there was a significant decline from 22.9% in 2002 to 14.4% in 2011. This decline could be attributed to the government's Integrated National Electrification Programme (INEP), coupled with the alternative strategies of encouraging the use of renewable and efficient energy sources. As was the case with cooking, certain provinces are more reliant on solid fuels for heating than other provinces. The use of solid fuels for heating is most prevalent Limpopo (39%), Eastern Cape (29%), Mpumalanga (24%), KwaZulu- Natal (23%) and the Northern Cape (21%).

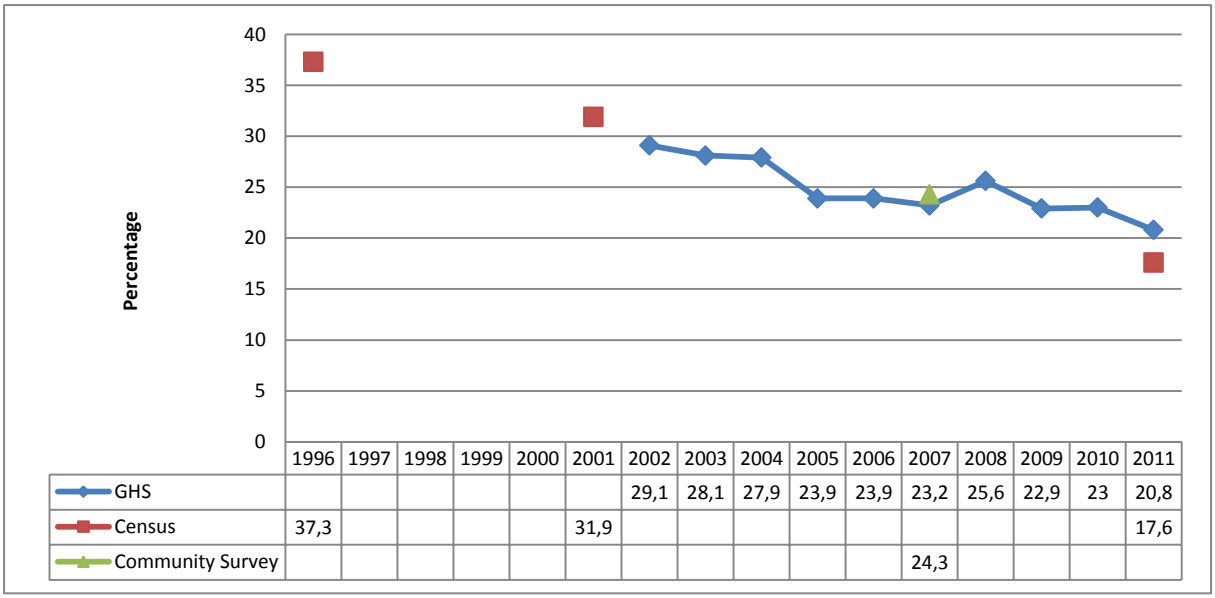
Figure 30: Proportion of population using solid fuels as primary source of energy for heating



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
National	29,1	28,1	27,9	23,9	23,9	23,2	25,6	22,9	23	20,8
Western Cape	11	10,3	10,3	4,4	6,8	5,7	4,4	7,5	8,4	7,9
Eastern Cape	47,3	46,3	44,8	35,3	36,2	34,9	37,9	33,2	38,1	31,2
Northern Cape	28,4	27,2	29,6	23,7	28,6	28,3	32,2	25,2	29,9	35,7
Free State	30,2	26,9	28,1	22,1	21,8	19,3	20,8	19,5	16,7	14,6
KwaZulu-Natal	28	27,8	27,7	26,1	25,4	25,8	29,6	27,2	25	21,3
North West	34,8	31,1	32,6	21	22,4	20,8	27,9	24,1	20,9	20,8
Gauteng	8,3	9,3	7,9	7,9	8,7	9,2	9,3	7,9	7,2	7
Mpumalanga	46,3	38,2	47,4	42,4	41,3	38,8	41,3	35,2	36,3	32,3
Limpopo	60,5	61,4	57,3	56,2	51,3	49,5	56,1	49,5	52	49,9

Source[49]: General Household Survey, 2002 – 2011

Figure 31: Proportion of population using solid fuels as primary source of energy: heating (by various national surveys)



	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
GHS							29,1	28,1	27,9	23,9	23,9	23,2	25,6	22,9	23	20,8
Census	37,3					31,9										17,6
Community Survey												24,3				

[49] Data from Census and Community Survey is used for analysis and comparison in the narrative only.

Source: GHS, 2002 – 2012; Census 1996, 2001 and 2011, Community Survey, 2007

Among the different provinces, Limpopo (49.9%), the Northern Cape (35.7%), Mpumalanga (32.3%) and the Eastern Cape (31.2%) higher proportions of households that used solid fuels in 2011. As noted above, economic reasons such as cost, availability and accessibility are key factors influencing household use of solid fuels for heating in these provinces. Research shows that even when people are electrified they still use other sources of energy. The economic burden might be the case as well as the availability of solid fuels. This should serve as a lesson for the government in planning for its post-2015 agenda of improving infrastructure in the regions where it is most needed. Comparison of the 2011 GHS and Census data shows large differences in terms of percentages of households that used fuels for heating across provinces. For example, for Mpumalanga, the GHS data shows that 49.9% of households used solid fuels as their primary source for heating in 2011, while the Census data showed 39.9%, while for Limpopo the rates were 32.3% and 24.3% respectively.

In terms of MDG targets, those provinces with lower rates of access to fossil fuels have better chances of reducing their use of inefficient sources and improving access to energy from other potentially cleaner sources. This is true for the provinces with more urban populations, such as the Western Cape and Gauteng, which are relatively more developed than the others. Again, this factor can be factored into future planning for infrastructure development and maintenance in areas where they are most needed. These Figures 29 and 31 reveal that, nationally, approximately 13% of the population still use solid fuels for cooking and 18% for heating. This signifies a significant decline in the use of solid fuels and provides evidence that rapid progress has been since 1996 in energy transition in South Africa and augers well towards progress on the MDGs.

DMI 12 lessons learnt and the post-2015 agenda

Ensuring affordable access and productive use of the relatively cleaner sources of energy, particularly among poor households, should be central to post-2015 agenda on energy access. Growing urbanisation presents challenges for access to electricity and other services in urban areas. Informal settlements – most of these areas are not proclaimed and it is difficult for the government to electrify areas that are not proclaimed and not sure if they will be moved/relocated to other areas. In rural areas the main challenges include lack/no infrastructure, topography, scattered settlements and households.

DMI 13: Stability of Water Supply

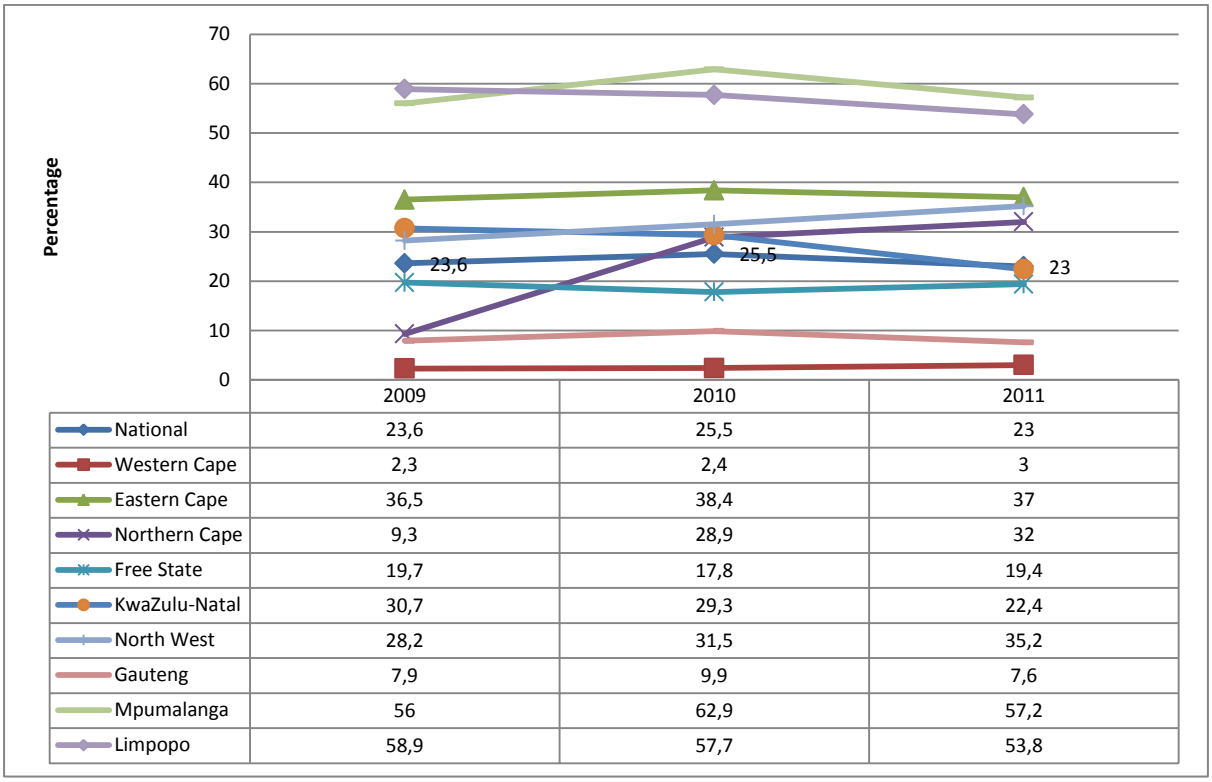
Target	Definition
None	Percentage of households that received water from a municipality but that, over the 12 months before the survey, reported interruptions that lasted more than two days or that had experienced water interruptions for more than 15 days during that time.

Figure 32 presents results of the stability of water supply between 2009 and 2011. About 23% of households reported interruptions of water supply in 2011, a slight decrease from the 25.5% in 2010. Very few households reported interruptions of water supply in the Western

Cape (3%) and Gauteng (7.6%) in 2011. While the North West and Eastern Cape reported water interruptions in the range of 22% to 38% for the three years, Mpumalanga and Limpopo reported the highest percentages (in the range of 56% to 63%) of households that had interruptions that lasted more than two days or that had experienced water interruptions for more than 15 days during between 2009 and 2011 respectively. This indicator shows the level of water stability, which depends on the availability and type of infrastructure, the maintenance and the ability of municipalities to provide the service (in terms of their respective capacities – i.e. financial and human resources). The data shows that the level of instability is higher (based on higher percentage of households with interruptions) for Limpopo and Mpumalanga, which could be an indicator of challenges associated with infrastructure and/or maintenance for those less-developed provinces compared to the Western Cape and Gauteng.

With the success story highlighted earlier for overall access to improved water services under the MDG 7C target, the domesticated stability indicator (DMI 13) shows the difference that could arise from achievement based on access to facilities, while the service may not be accessible. The findings serve as a wake-up call for the South African government to ensure that its water services infrastructure not only drives improved access but also minimises disruptions to municipal services in all provinces.

Figure 32: Stability of water supply



	2009	2010	2011
National	23,6	25,5	23
Western Cape	2,3	2,4	3
Eastern Cape	36,5	38,4	37
Northern Cape	9,3	28,9	32
Free State	19,7	17,8	19,4
KwaZulu-Natal	30,7	29,3	22,4
North West	28,2	31,5	35,2
Gauteng	7,9	9,9	7,6
Mpumalanga	56	62,9	57,2
Limpopo	58,9	57,7	53,8

Source: General Household Survey, 2009 – 2011

DMI 13 lessons learnt and the post-2015 agenda

With the success story highlighted earlier for overall access to improved water services under the MDG 7C target, the domesticated stability indicator (DMI 13) shows the difference that could arise from achievement based on access to facilities, while the service may not be

accessible. The findings serve as a wake-up call for the South African government to ensure that its water services infrastructure which looks at putting pipes in the ground needs to ensure functionality during its useful life.

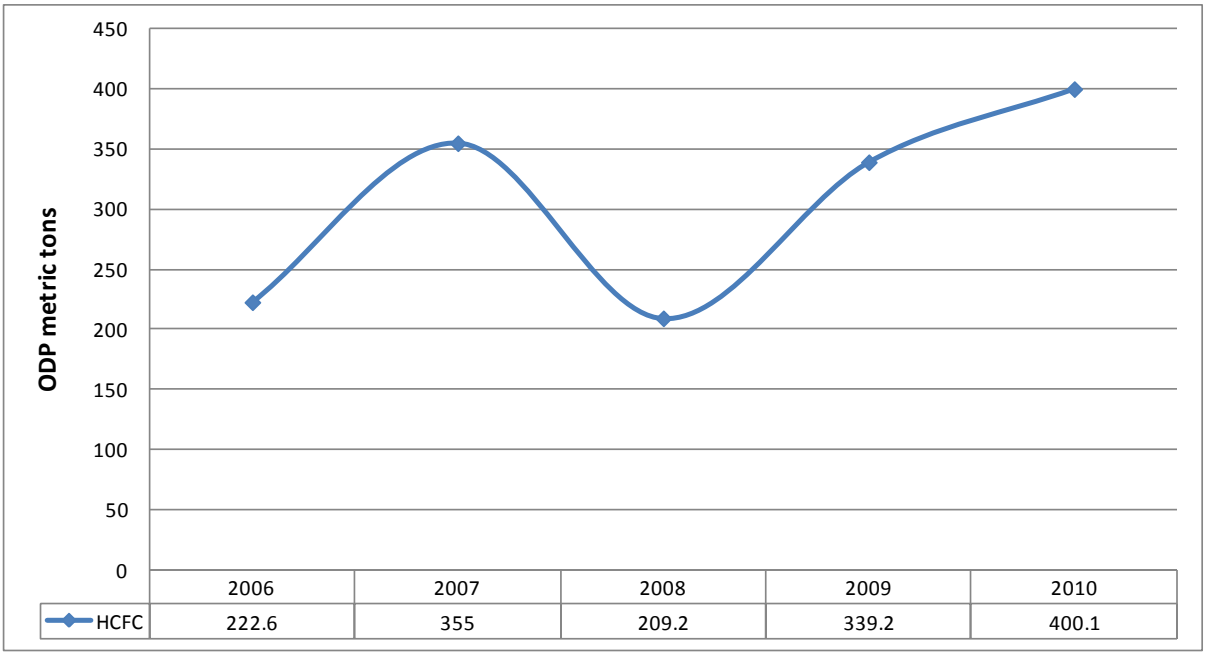
DMIs 14 – 16: Consumption of ozone-depleting substances (ODSs)[50]

Target	Definition
Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources HCFC and BCM: Freeze consumption by 2013 and phase out by 2040 MeBr: Phase out by 2015	This indicator is used to monitor the reduction in the usage of Ozone Depleting Substances (ODSs) as a result of the Montreal Protocol. Therefore, only ODSs controlled under the Montreal Protocol are covered by the indicator. Reducing consumption ultimately leads to reductions in emissions since most uses of ODSs finally lead to the substances being emitted into the atmosphere. The units of measurement are metric tons of ODS weighted by their Ozone Depletion Potential (ODP), otherwise referred to as "ODP tons". This indicator signifies the progress made towards meeting the commitments to phase out the use of ODSs of the countries that have ratified the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer and its Amendments of London (1990), Copenhagen (1992), Montreal (1997) and Beijing (1999). ODS is any substance that contains chlorine or bromine, which destroys the stratospheric ozone layer that absorbs most of the biologically damaging ultraviolet radiation. The phasing out of ODSs, and their substitution by less harmful substances or new processes, is aimed at the recovery of the ozone layer. Substances controlled by the Montreal Protocol are categorised into annexes, with different groups in each annex. These include chlorofluorocarbons (CFCs) (Annex A, group I), halons (Annex A, group I), and methyl bromide (Annex E, group I), among others. Controlled substance means a substance in Annex A, Annex B, Annex C or Annex E of the Montreal Protocol, whether existing alone or in a mixture. It includes the isomers of any such substance, except as specified in the relevant annex, but excludes any controlled substance or mixture that is in a manufactured product other than a container used for the transportation or storage of that substance. Therefore, trade in finished products does not fall under the control of the protocol. ODP refers to the amount of ozone depletion caused by a substance. It is the ratio of the impact on ozone of a chemical substance compared to the impact of a similar mass of CFC-11. The ODP of CFC-11 is defined to be 1. CFCs have ODPs that range from 0.6 to 1 while hydrochlorofluorocarbons (HCFCs) have ODPs that range from 0.001 to 0.52. The halons have ODPs of up to 10 while methyl bromide has an ODP of 0.6 (http://ozone.unep.org/; http://www.unep.ch/ozone; http://www.unep.org/ozone).

[50] DEA submitted data to the United Nations Environment Programme (UNEP) Ozone Secretariat, which completed the calculations to obtain ODS values for South Africa.

This indicator reports progress towards phasing out of ODSs under the schedules defined by the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer and its later Amendments. This indicator has been domesticated as the values that are reported reflect the difference between the recommended import and export amounts rather than absolute consumption. Reporting on actual consumption of ODSs will ensure comparable assessment with other countries. Despite this, evidence of the difference between the recommended import and export amounts shows that South Africa has achieved great success in phasing out of ODSs (Figures 23 to 35).

Figure 33: Consumption[51] of ozone-depleting substances: HCFC

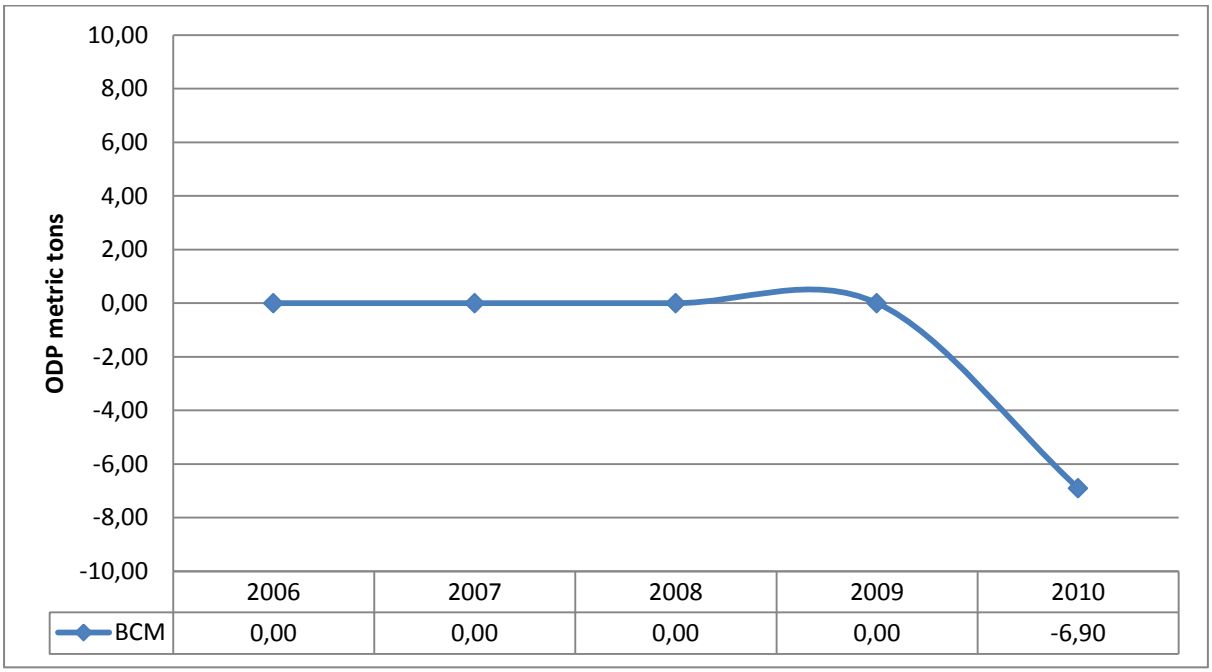


Source: United Nations Environment Programme Ozone Secretariat (2012)

The target for HCFC and bromochloromethane (BCM) is to freeze consumption by 2013 and phase out by 2040. Despite a decline in 2008, consumption of HCFC steadily increased in 2009 and 2010, although there was a decline in the rate of consumption in the later year (Figure 33). Although no data is available for recent years, it is evident that there is still an increasing consumption, however the decline in the rate of consumption between 2009 and 2010 points to progress towards the target of freezing consumption of HCFC by 2013 and ultimately phasing out by 2040. However, recent data trends are required to verify progress. South Africa stopped using ozone-depleting CFCs in aerosol spray-can propellants as far back as July 1992, although small amounts of legal CFCs are imported and exported to fill asthma inhalers as well as air conditioners and refrigerators manufactured before 1996 (DEA, 2011c).

[51] Reported as the difference between the recommended import and export amounts

Figure 34: Consumption[52] of ozone-depleting substances: BCM



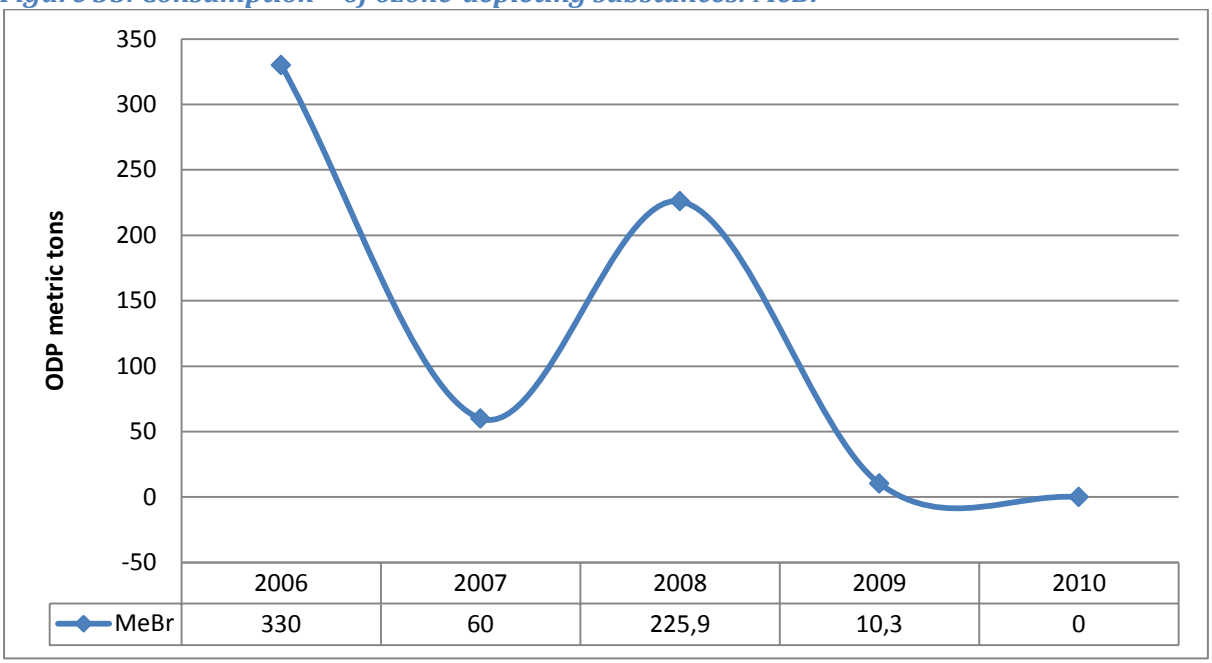
Source: United Nations Environment Programme Ozone Secretariat (2012)

The evidence for consumption of ODSs shows that by 2010 South Africa was no longer importing BCM (

Figure 34). This shows that the country achieved phasing out use of BCM by 2010. In 2010, South Africa exported 57.7 tons and this converted to ODP tons equated to -6.9 ODP tonnes. The country still imports and uses CFC methyl bromide (used as a pesticide in the agricultural sector), which is to be phased out in 2015. The DEA has measures in place to phase out consumption of ODSs. For example, to regulate consumption of HCFC, the DEA, Chemicals Management is implementing the HCFC Phase-out Management Plan (DEA, 2012).

[52] Reported as the difference between the recommended import and export amounts

Figure 35: Consumption[53] of ozone-depleting substances: MeBr



Source: United Nations Environment Programme Ozone Secretariat (2012)

Results show that South Africa reached the target of phasing out consumption of Methyl bromide (MeBr) by 2010 ahead of 2015 (Figure 35). To regulate the consumption of MeBr, the DAFF implements the Methyl bromide management plan. Industry will then apply to the regulating authorities for the issuing of import and exports permits.

Generally, South Africa has managed to reduce consumption of ODSs by reducing imports of OD-associated substances, and has almost completely phased out the use of ODSs such as aerosol spray-can propellants. Consumption of ODSs such as CFCs, halons, and other chemicals causes the thinning of the stratospheric ozone layer. This contributes to global warming and consumption of ODS is a major global environmental concern. South Africa acceded to the Vienna Convention for the Protection of the Ozone Layer and the Montreal

[53] Reported as the difference between the recommended import and export amounts

Protocol on Substances that Deplete the Ozone Layer in 1990, and to the London Amendment to the Montreal Protocol in 1992 (South Africa MDG Report, 2010).

DMIs 14-16 lessons learnt and the post-2015 agenda

South Africa to continue implementing ODS measures to ensure complete phase out of these substances, such as: HCFC Phase-out Management Plan and Methyl bromide management plan.

LESSONS LEARNT AND STRATEGIES FOR POST-2015 AGENDA

Annexure A summarise findings, lessons learnt and possible strategies for the post-2015 agenda to fast track the achievement of MDG 7 targets and indicators. The suggested strategies take note of the various national policies and plans developed and being implemented to drive the sustainable development agenda in South Africa. Examples include: the South Africa framework for responding to economic crisis; 2009-2014 Medium-Term Strategic Framework (MTSF) and its associated Outcomes; National Green Economy Summit Report; Green Economy Accord; Long-Term Mitigation Strategy; New Growth Path; Industrial Policy Action Plan (IPAP-2); National Strategy for Sustainable Development and Action Plan; National Climate Change Policy; National Development Plan – Vision 2030; Ten Tear Innovation Plan; Integrated Resource Plan 2010 and Integrated Energy Plan; Environmental Fiscal Instruments (e.g. carbon tax); and National Skills Development Strategy 3. Concerted efforts in implementing recommendations from these various policies and plans can substantially steer the country towards achieving MDG 7.

CONCLUSIONS

Reviewing progress on the achievement of MDG 7 shows that the South African government has made strides towards ensuring environmental sustainability, but the challenge of climate change is imminent and needs to be carefully addressed in its development plans and strategies. This would form part of the post-2015 agenda to ensure that the country is prepared to weather the storms arising from negative impacts of adverse climatic conditions.

The review of the MDGs and Domesticated Indicators shows that South Africa has achieved only one MDG 7 target of halving, by 2015, the proportion of people without sustainable access to safe drinking water. The proportion of the population with water access at 1996 as the base year was 76.6%, resulting in a backlog of 23.4% at that time. This makes the target by 2015 to be 88.3% and since the Census data showed that 89.4% of the population had access to water by 2011, this clearly shows that the target has been achieved to date. The MDG target that is likely to be achieved is the one of improved access for sanitation by 2015,

using the GHS data[54], even though the country is not likely to achieve the 100% set for 2014 by the South African government.

Progress has been made in the targets on proportion of protected areas (marine) and the country is likely to meet the MDG targets for this indicator by 2020. Another target where government has a possibility of achieving by 2020 is on the integration of the principles of sustainable development into country policies and programs to reverse the loss of environmental resources (MDG Target 7A). Although South Africa has a high carbon intensity compared to other African countries, its commitment to reduce emissions by 34% from its current path (termed "business as usual") shows that there is a possibility of achieving this target, based on the envisaged programmes and policies, which require more funding.

The MDG targets which are not likely to be realised are for achieving improved access (of 92%) for sanitation by 2014 (part of target 7C) and that of improving the lives of 400 000 households living in informal settlements (known as "slums" by international standards as per target 7D) by 2014 as envisaged. While access to improved sanitation services depend on infrastructure availability and maintenance, which is currently a challenge, improving the lives of 400 000 households in the informal settlements requires a lot more at the local municipality level. This ranges from accreditation of local municipalities to issues of adequate homes, access to loans, and the state of the rental markets among others. These challenges need to be taken serious in preparation for the post 2015 development agenda.

The country still faces challenges in meeting some of the MDG 7 indicators as indicated above. South Africa has developed and is currently implementing a number of national policies, strategies and plans that should form part of the post-2015 agenda. Concerted efforts in implementing recommendations from these various policies and plans can substantially steer the country towards achieving MDG 7 targets. Substantial progress that has been made in achieving some of the indicators should be strengthened and further supported by providing the required funding to meet the infrastructure demand and maintenance. However, indicators that are still far from meeting their targets require substantial efforts in investments in programmes and projects that will see these indicators improve towards set targets.

[54] The two data sets from Census and from GHS are provided at different time intervals and may be useful for different purposes. The Census data of every ten years may not be sufficient for short to medium term development planning, which may rely on the GHS data published annually. The Census data provided over a ten year period will not be available at 2015 to compare the sanitation target with actual achievement at that point in time and that is why the GHS data is used as a reference taking into account the disparity between the two.

ANNEXURE A: MDG INDICATORS

Summary of findings, lessons learnt and strategies for post-2015 agenda		
Indicator	**Key findings**	**Lessons learnt and strategies for post-2015 agenda**
7.2 CO_2 emissions, total, per capita & per $1 GDP (PPP)	- South Africa is a major emitter of CO_2 and accounts for 65% of Africa's emissions. - South Africa's per capita emissions are higher than those of many European countries. - South Africa is currently an energy-intensive economy based on an unsustainable economic development path primarily based on maximising economic growth, as measured by the gross domestic product (GDP), particularly through mining, manufacturing and agricultural activities. - Most of South Africa's emissions have their source in the energy sector, mainly from electricity supply, industry, transport and liquid fuels supply. - South Africa is also vulnerable and exposed to the impacts of climate change and variability due to the socio-economic and environmental context. - The country has identified key flagship mitigation programmes and started promoting and implementing clean energy resources such as renewable energy and energy efficient initiatives: Solar Water Heating Programme, Energy Efficiency and Demand Management Programme, Green Fund.	- The impacts of climate change, if unmitigated, have the potential to undo or undermine many of the positive advances made in meeting South Africa's own development goals and the MDGs. - Sustaining the progress made on MDG 7 and other MDGs will require South Africa to strengthen capacities to anticipate and respond to adverse impacts of climate change and capitalise on mitigation opportunities. - South Africa has committed to stringent CO_2 emission reduction targets (to achieve 34% below "business as usual" by 2020), undertaken with the understanding that the actions will be supported by international finance, technology and capacity building. These conditions are critical for South Africa to achieve the set targets related to the MDG 7.2 indicators.
7.6 Proportion of terrestrial and marine areas protected	- South Africa is on course to meet the target for protected marine areas if the current rate of increase is at least maintained while the target for protected terrestrial areas is unlikely to	- Achievement of protected terrestrial areas by 2020 largely depends on stepping up implementation of current and future national policies and

	be met. - South Africa through the DEA has developed a national framework for an integrated approach among all stakeholders to managing biodiversity as well as various national policies and strategies to protect terrestrial and marine and coastal resources.	strategies.
7.7 Proportion of species threatened with extinction	- Tracking changes in the percentage of threatened species gives a good indication of the country's success in preserving its biodiversity. - Red Lists also provide information on factors that contribute to threat status of species. - The proportion of threatened species is highest for freshwater fish (21%) and inland mammals (20%). - Recent conservation assessments completed in South Africa (for plants in 2011, reptiles in 2011 and amphibians in 2010) show that loss of natural habitat or land cover change, particularly as a result of cultivation, is the primary threat to species, while invasive alien species threaten species in both terrestrial and freshwater environments.	- There is a critical need to ensure future data collection to allow continuous tracking of changes in threatened species and targeting of conservation resources. - There is a need to set up conservation activities around agricultural areas as well as to control land use changes in both protected and unprotected areas.
7.8 Proportion of population using an improved drinking water source	- South Africa achieved the water access MDG target in 2005, where 88.4% of the population had access to improved drinking water services, (leaving only 11.6% of the backlog) and by 2011 (latest year reported) 90.2% of the population was reported to be using an improved drinking water source. - The achievement of this target is partly due to the South African government's efforts to ensure 100% access to water by all people by 2014. - However, despite progress made in addressing national goals and targets related to water access, South Africa is unlikely to achieve 100% coverage of water access based on existing delivery trends. - Disparities in terms of access to water are shown between the rural and urban areas among provinces.	- Although South Africa has achieved the target of halving the proportion of population without water access by 2011, this achievement is not for all provinces. - The data from Mpumalanga and Limpopo indicates worrying trends, which strongly suggest that existing infrastructure to supply water is failing, requiring intervention, especially with regard to operations and maintenance and refurbishment of infrastructure. - The post-2015 agenda should focus on providing a water service which embraces sustainability into the definition of water service
7.9 Proportion of population using an	- Review of the two data sets[55] shows progress towards made towards achieving the sanitation target by 2015.	- The challenge of inadequate infrastructure and lack of availability, coupled with

[55] The two data sets are provided at different time intervals and may be useful for different purposes. The Census data of every ten years may not be sufficient for short to medium term development planning, which may rely on the GHS data published annually. The Census data provided over a ten year period will not be available at 2015 to compare the sanitation target with actual achievement at that point in time.

improved sanitation facility	It is clear that the target of 77% using the Census data is not achievable by 2015. - However, the GHS data show that achieving this target is possible by 2015. - While the GHS data may provide a better picture in terms of progress towards achieving the sanitation target, this target still falls below the South African government target of 100% access to improved sanitation by 2014. This implies that the South African policy makers need to take into account that the rate of sanitation service delivery in some areas has not been optimal across South Africa, which makes achievement of the 2015 target less realistic, irrespective of the data used. - Further, as noted from the review of global achievement of the sanitation targets, achievement of the sanitation target remains a challenge and countries need to act in response to this need. - Therefore, there is a need for government to ensure infrastructure maintenance and address capacity constraints in the affected areas. -	maintenance, also affects the sanitation sector. - The post-2015 agenda should focus on providing a sanitation service which embraces sustainability into the definition of sanitation service
7.10 Proportion of urban population living in slums	- The South African government committed to accelerating service delivery and improving the quality of life of 400 000 households, upgrading informal settlements in 45 priority municipalities by 2014. - The MDG target of improving the lives of 400 000 households living in informal settlements is not likely to be achieved.	- Improving the lives of 400 000 households in informal settlements requires a lot more initiatives at the local municipal level, which range from accreditation of local municipalities to access to loans and state of the rental markets. - These challenges need to be taken seriously in preparation for the post-2015 development agenda.

ANNEXURE B: DOMESTICATED INDICATORS

Summary of findings, lessons learnt and strategies for post-2015 agenda		
Indicator	**Key findings**	**Lessons learnt and strategies for post-2015 agenda**
DMI 1: Proportion of Natural Habitat	- Land degradation leads to reduced productivity; loss of vegetation and resources to support human livelihoods and commercial activities, leading to reduced biodiversity and loss of ecosystem services. - About 20% of natural habitat in South Africa has been irreversibly lost, most of it in the last century. - The reported rates of natural habitat loss are far more than the national average of 20% and rates of ongoing loss are high in provinces such as Gauteng, KwaZulu-Natal and the North West. - The major causes of natural habitat loss include cultivation of crops as well as mining, forestry plantations and urban development.	- While further development in the various parts of the country is desirable, it is critical to ensure that natural open spaces and ecological infrastructure are kept intact, so that terrestrial ecosystems can continue to provide ecosystem services and support climate change resilience, and future generations can continue to enjoy the natural spaces and landscapes that are part of our heritage. - If loss of natural habitats continues at current rates there will be little vegetation outside protected areas.
DMI 2: Ecosystem threat status	- Wetlands are the most threatened of all South Africa's ecosystems, with 48% of wetland ecosystem types critically endangered. - In terms of endangered ecosystems, rivers have the highest rate (19%), while terrestrial ecosystems are the most vulnerable (19%). Similarly, terrestrial (60%), estuarine (57%) and marine and coastal habitat (53%) have the least threatened ecosystems. - South Africa has achieved the target of having a list of protected or threatened ecosystems by 2011, and is on track to achieve an updated list by 2013.	- There is a need to ensure implementation of the various national policies and strategies (e.g. the National Protected Area Expansion Strategy (NPAES); Provincial Protected Area Expansion Strategies; SANParks – Land acquisition plan; National Environmental Management: Protected Areas Act; National Protected Areas Database; and the National Biodiversity Framework) to protect terrestrial and marine and coastal resources.
DMI 4: Percentage of permitted landfill sites (Decrease in number of unlicensed waste disposal sites)	- Permitted landfills for 2012/13 of 4.3%, which is equivalent to a total number of 15 sites, shows that South Africa is still very far from meeting its target of having 80% of the 341 known unlicensed landfill sites licensed by 2015.	- More resources are required to improve and complement steps taken by the DEA to address the licensing of landfills
DMIs 6 & 8: Proportion of land area covered by Natural Forests and Albany Thicket	- The proportion of land area covered by natural forests and Albany Thicket was 0.4% and 2.37% respectively for 2005. - The recent National Land Cover assessment was only released in 2005 and there has not been any assessment after that; hence, the figures are only reported for 2005. - Indigenous forests constitute about 0.4%	- It is critical to protect natural forest areas from further development through the various policies and strategies put in place by the DAFF and partners. - Guidelines on property development have been developed and should be strictly

	of the land surface in South Africa; however, the indigenous forests biome encompasses extensive areas and contains resources valued for biodiversity, ecotourism, timber production and non-timber forest products, particularly firewood, poles and medicine. - South Africa has put in place several interventions to ensure sustainable forest management; e.g. National Forests Act 84 of 1998and National Environmental Management Biodiversity Act (Act 10 of 2004).	implemented going forward and post 2015
DMI 7: Proportion of land area covered by Savannah Woodlands	- South Africa is mainly covered by dry savannah woodlands (about 39 million ha) and bushveld due to its dry conditions. - Savannah woodlands are located predominantly in Limpopo, the Northern Cape and North West Province. - Savannah woodlands are an important livelihood source, especially for rural people in communal areas of South Africa. - To date the Kathu forest (about 400 hectares) has become the first woodland type of forest to be declared protected in terms of the National Forest Act No. 84 of 1998	- It is critical to conserve and maintain savannah woodlands to ensure sustained provision of ecosystem services and benefits to the well-being of South African society, especially poor rural people living in close proximity to woodland areas. - Monitoring of this forest type is inadequate due to its extend and there is need for unique monitoring system for savannah woodlands
DMI 9: Proportion of land area covered by Commercial Plantations	- Commercial plantation forestry in South Africa encompasses the large planted forests (about 1.3 million ha established to supply raw materials to satisfy mining, construction, and industrial markets), which supply the pulpmills, sawmills and factories that process the raw materials. - Mpumalanga has the highest proportions of land area covered by commercial plantations, followed by KwaZulu-Natal, the Eastern Cape, Western Cape, Limpopo and North West Province.	- While plantations are important for economic purposes, they also play a crucial role in biodiversity conservation and “high conservation areas” within plantations need to be protected.
DMI 10: Proportion of households with access to electricity	- Baseline in 1994 was 30% household access to electricity - The South African government set a domestic target in 2009 to increase the proportion of households with access to electricity from 81% to 92% by 2014. - At national level, the proportion of households with access to electricity increased from 76.8% in 2002 to 80.5% in 2005, before reaching 82.8% in 2011. - In line with NDP, universal access will be reached by 2025 with 90% grid technologies and 10% non-grid technologies - The decline in access in Gauteng and the Western Cape Province could be attributed to the rapidly growing urban populations arising from migration of people into informal settlements in these	- Targets for access to improved service delivery (e.g. electricity) need to take into account planning for bulk infrastructure and to factor in the continuous maintenance of infrastructure where it is already in place. - It is critical to make provision for new infrastructure only in those areas where it is needed, while maintaining the rest to ensure that access is based on availability of facilities and on the delivery of the service itself. - Growing urbanisation presents challenges for access to electricity and other services in urban areas. - Informal settlements – most of

	provinces. - Rural areas have either lack/no infrastructure, topography, scattered settlements and households, which makes the connection of the remaining 25% very difficult. This makes the cost per connection very high	these areas are not proclaimed and it is difficult for the government to electrify areas that are not proclaimed and not sure if they will be moved/relocated to other areas - In rural areas the main challenges include lack/no infrastructure, topography, scattered settlements and households.
DMI 11: Proportion of population using solid fuels as primary source of energy: cooking	- Comparison between the 2005 and 2010 figures indicates a declining trend in the use of solid fuels for cooking both nationally and within provinces, which could be attributed to higher use of alternative energy sources, such as electricity and solar. - Low-income households rely more on multiple energy sources (i.e. electricity, firewood, paraffin, gas, solar and coal), with firewood and paraffin accounting for 34%, while high-income households rely more (65%) on electricity only as their source of energy.	- Ensuring affordable access and productive use of the relatively cleaner sources of energy, particularly among poor households, should be central to post-2015 agenda on energy access. - Growing urbanisation presents challenges for access to electricity and other services in urban areas. - Informal settlements – most of these areas are not proclaimed and it is difficult for the government to electrify areas that are not proclaimed and not sure if they will be moved/relocated to other areas - In rural areas the main challenges include lack/no infrastructure, topography, scattered settlements and households.
DMI 12: Proportion of population using solid fuels as primary source of energy: Heating	- Results show a declining trend in the use of solid fuels for heating between 2002 and 2011, with a slight increase in 2008 for South Africa – both nationally and among the different provinces. - These achievements could be attributed to government's initiatives of the integrated electrification programme, as stated in the Integrated National Electrification Programme (INEP), coupled with the alternative strategies of encouraging the use of efficient energy sources and reducing energy use in general. - Even with access to electricity, households with cheap and access to readily solid fuels would use these other sources of energy.	- Ensuring affordable access and productive use of the relatively cleaner sources of energy, particularly among poor households, should be central to post-2015 agenda on energy access. - Growing urbanisation presents challenges for access to electricity and other services in urban areas. - Informal settlements – most of these areas are not proclaimed and it is difficult for the government to electrify areas that are not proclaimed and not sure if they will be moved/relocated to other areas - In rural areas the main challenges include lack/no infrastructure, topography, scattered settlements and households.

DMI 13: Stability of Water Supply	- About 23% of households reported interruptions of water supply in 2011, a slight decrease from 25.5% in 2010. - Mpumalanga and Limpopo reported the highest percentages (in the range of 56% and 63%) of households that had interruptions that lasted more than 2 days or had experienced water interruptions for more than 15 days respectively between 2009 and 2011.	- The findings serve as a wake-up call for the South African government to ensure that its water services infrastructure which looks at putting pipes in the ground needs to ensure functionality during its useful life.
DMIs 14 – 16: Consumption of ozone-depleting substances (ODSs)	- South Africa has achieved great success in phasing out ODSs. - Despite a decline in 2008, consumption of HCFC steadily increased in 2009 and 2010, although the increase in the later year was less steep. - The evidence for consumption of ODSs shows that by 2010 South Africa was no longer importing BCM. - Generally, South Africa has managed to reduce consumption of ODSs by reducing imports of OD-associated substances.	- South Africa to continue implementing ODS measures to ensure complete phase out of these substances, such as: HCFC Phase-out Management Plan and Methyl bromide management plan.

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