REPUBLIC OF SOUTH AFRICA

MILLENNIUM DEVELOPMENT GOALS

Ensure environmental sustainability
2015

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LIST OF ACRONYMS AND ABBREVIATIONS

AU	African Union
AUC	African Union Commission
AfDB	African Development Bank
BAU	Business as Usual
BCM	Bromochloromethane
BBEE	Broad-Based Black Economic Empowerment
CMA	Catchment Management Agency
CBD	Convention on Biological Diversity
COPX	10th Conference of Parties
CFC	Chlorofluorocarbon
CO_2	Carbon Dioxide
CS	Community Survey
CSOs	Civil Society Organisations
CRU	Community Residential Unit
DAFF	Department of Agriculture, Forestry and Fisheries
DBSA	Development Bank of Southern Africa
DEA	Department of Environmental Affairs
DFIs	Development Financial Institutions
DHS	Department of Human Settlements
DMIs	Domesticated Indicators
DoE	Department of Energy
DWA	Department of Water Affairs
DWS	Department of Water and Sanitation
EIA	Environmental Impact Assessment
ENRM	Environmental and Natural Resource Management
EPWP	Expanded Public Works Programme
ERDT	Extended Report Drafting Team
FBE	Free Basic Electricity
FBAE	Free Basic Alternative Energy
FAO	Food and Agriculture Organization
FSC	Forest Stewardship Council
GCT	Green Cities and Towns
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GHS	General Household Survey
GWC	Growth without Constraints
HCFC	Hydro-chlorofluorocarbons
HCV	High Conservation Value

HDA	Housing Development Agency
HSDG	Human Settlements Development Grant
IBT	Inclined Block Tariff
IEA	International Energy Agency
IDP	Integrated Development Plan
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
MeBr	Methyl bromide
MTEF	Medium Term Expenditure Framework
MFMA	Municipal Finance Management Act
MIGMIS	Municipal Infrastructure Grant Management Information System
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
NFA	National Forests Act
NFRA	National Forest Resources Assessment
NFSD	National Framework on Sustainable Development
NGO	Non-Governmental Organisation
NHSS	National Housing Subsidy Scheme
NLC	National Land Cover
NPAES	National Protected Area Expansion Strategy
NPC	National Planning Commission
NRM	Natural Resource Management
NSSD	National Strategy for Sustainable Development
NWRS	National Water Resource Strategy
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 Non-Governmental Organisation Coalition
SANParks	South African National Parks
SDGs	Sustainable Development Goals
Stats SA	Statistics South Africa
SWG	Sectoral Working Group
UISP	Upgrading of Informal Settlements Programme
UN	United Nations
UNEP	United Nations Environment Programme
UNECA	United Nations Economic Commission for Africa
UNFCCC	United Nations Framework Convention on Climate Change
UNICEF	United Nations Children's Fund
UNESCO	United Nations Educational, Scientific and Cultural Organization
WDNIS	Water Services National Information System
WSA	Water Services Authority
WHO	World Health Organization
WML	Waste Management Licence
WSDP	Water Services Development Planning

FACTS AND FINDINGS OF MILLENNIUM DEVELOPMENT GOAL SEVEN (MDG 7)

Progress on Target 7A: Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources:
South Africa made significant progress on integrating the principles of sustainable development into its country policies and programmes to address the loss of environmental resources.

The South African government adopted and integrated the principles of sustainable development into the National Environmental Management Act (Act No 107 of 1998). The Act requires that development in the country must be socially, environmentally and economically sustainable. Principle 4(a) of the Act requires sustainable development to consider all relevant factors such as avoiding the disturbance of ecosystems and loss of biological diversity, avoidance of pollution and waste, and that negative impacts on the environment and on the people's environmental rights be anticipated and prevented.

Although South Africa is labelled as a higher emitter by African standards, the country made substantial progress in taking the relevant interventions to address the impact of climate change and ensure environmental sustainability. These interventions include relevant programmes, policies and strategies, and funding initiatives, which aided in the achievement of two of the four indicators under this target. South Africa achieved the target of 10% reduction of the consumption of ozone-depleting substances (ODS): Hydro-chlorofluorocarbons (HCFC) by 2013, and managed to eliminate the use of Bromochloromethane (BCM) by 2006.

The key policy driver is the long-term National Development Plan (NDP) Vision 2030, which encompasses all national priorities, including environmental sustainability and resilience. Despite increases in total carbon emissions during 2000–2010, per capita emissions have been declining at accelerated rates over the same period. Further, significant progress has been made in terms of reducing the use of ozone-depleting substances (ODSs) (such as HCFCs) and eliminating the use of BCM. This was due to an aggressive approach by government to address climate change impacts and ensure a low carbon sustainable development path as outlined in its NDP Vision 2030. As noted by the UNECA (2014), although Africa contributes least to CO2 emissions and the trend is improving, the carbon footprint still needs to be closely monitored, in order to achieve sustainable development objectives.

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

Substantial progress has been made in efforts to reduce biodiversity loss and to ensure protection of its natural resources, but not enough progress has been made to reverse the rate of loss in the phase of threats from extinction.

Although most of the indicators under this target have periods that go beyond the 2015 reporting period, South Africa made significant progress in the protection of its natural forests and marine resources. Although the threat of extinction is inevitable for a number of endangered species, the country managed to compile a list of threatened species, with the aim of developing a 'Red list', in order to monitor the status of threatened species. Most of the indicators under this target (including the protection of water and fisheries resources) require massive resource mobilisation, which the government is working on, but was unable to meet by 2015.

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

South Africa met the targets of halving the backlogs on water and sanitation access by 2015 and developed an indicator addressing sustainable water use, thereby already implementing part of the Sustainable Development Goal (SDG) on water.

By 2005, over 89% of the South African population had access to an improved water facility, and in 2011, over 91% had access, which exceeds the MDG 2015 target of 88.3%. The achievement of this target is due to the South African government's commitment in setting a higher target than the MDG target (100% coverage) and the establishment of focused and dedicated delivery programmes. Since 2007 South Africa prioritised the need to focus on the principle of reliable and sustainable water supply. An associated indicator was developed to measure access to sustainable water from a tap. The government also started the process of mobilising resources to address operations and maintenance constraints of the rural area through targeting the priority 27 Rural District Municipalities (DMs). Targets in the Medium-Term Strategic Framework (MTSF) 2014–2019 period of all service delivery now address sustainability through reliable services for water, sanitation, roads, electricity and solid waste. Achievement of the water access target is in line with the global progress, where this target was achieved in 2010. With regard to sanitation, by 2012, over 75% of the South African population had access to an improved sanitation facility, exceeding the 2015 target of 74.7%. This is a significant achievement, compared to other developing countries, where sanitation is not only an African challenge, but a global issue with more than 2.5 billion people not having access to improved sanitation by 2012, with Africa carrying part of the burden. The character of this MDG target in terms of the need to address the unfinished business (e.g. the remaining half of the services back log) as well as the need to focus on reliability demands that these aspects are carried forward.

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

Although South Africa achieved the target of improving the lives of its population living in informal settlements, clear targets and benchmarking are required to monitor progress on improved services to those populations.

South Africa made significant progress towards the target of improving access to basic services to those populations living in informal settlements. The South African government's domesticated target 7D aimed for ensuring that 400 000 households in informal settlements are upgraded with access to basic services, e.g. water and sanitation by 2014. Two-thirds of the residences in informal settlements are to be found in the large metropolitan municipalities, which are in a better position to address the socio-economic conditions of the urban poor. The dividends of this approach with regard to access to basic services resulted in a total of 447 480 households living in informal settlements having access to improved basic services by 2014, but tenure security still remains an issue, aggravated by rural-urban migration to big metropolitan cities.

STRATEGIC APPROACH: TRANSITION TO THE SUSTAINABLE DEVELOPMENT GOALS (SDGS)

South Africa has taken a strategic and programmatic approach in service delivery to provide all its people with access to these services, and to address environmental sustainability prior and post the adoption of the United Nations (UN) Millennium Development Goals (MDGs) in 2000. Strategic interventions include setting domesticated targets on improving access to basic services, which include water, sanitation, electricity and housing. For example, the national domesticated target for water and sanitation access was to address and resolve all backlogs and achieve 100% coverage for all South Africans, by 2014. The approach has been successful in that it enables South Africa to reduce the 'unfinished business' of dealing with the remainder of the backlogs post-MDG 2015. Although the 100% targets of access to water and sanitation were not achieved by 2014 due to water resource, infrastructure and sustainability challenges, the South African government's efforts to increase service delivery are an indication of government's commitment to its national development priorities set prior to the adoption of the MDG targets. Other initiatives include the adoption of the Integrated National Electrification Programme (INEP) adopted in 1994, which facilitated electricity access to 5.4 million households with 85% of all households in South Africa having access to electricity by 2012 (DoE, 2012). This led to the government's initiative of striving to increase the electricity target from 89% in 2009 to 92% in 2014, as part of its DMIs, while keeping in mind the target for universal access by 2025 in line with the NDP Vision 2030.

The overarching national development agenda to facilitate the transition to the sustainable development goals (SDGs) is the NDP Vision 2030. Vision 2030 has adopted 'a low carbon development path' as its long-term strategic approach to address environmental sustainability. It sets out clear milestones with a time-bound implementation framework that needs to be strictly adhered to in order to ensure the achievement of a low carbon development path. This requires a participatory approach by all stakeholders, including government, the private sector and civil society.

As it is approaching the end of the MDG agenda in 2015, the South African government, in consultation with the private sector, civil society and other relevant stakeholders, is now embarking on the finalisation of the relevant indicators for the SDGs. The SDG consultative process is underway, and government should leverage on the momentum of the MDGs to ensure a successful implementation of the SDG process.

EXECUTIVE SUMMARY

The 2015 Millennium Development Goal Seven (MDG 7) Report reviews progress made by South Africa towards achieving the targets for MDG 7 since the adoption of the Millennium Development Goals (MDGs) in 2000. The report further summarises the relevant strategies, policies and interventions taken, identifies potential challenges encountered, and concludes with lessons learnt for the post-2015 agenda and the transition towards the Sustainable Development Goals (SDGs). MDG 7 focuses on ensuring environmental sustainability, and its targets and indicators are reviewed 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.

The data used to review progress was provided to Statistics South Africa (Stats SA) through a widely consultative process between all stakeholders, which include government departments and agencies, as well as civil society organisations (CSOs). South Africa revised the number of indicators and targets since the 2013 reporting period, based on data availability and compliance with international MDG reporting methodologies and calculations as required by the United Nations (UN). This resulted in changing the status of some MDGs and/or the domesticated indicators (DMIs). The South African government has taken a proactive approach through the adoption of the DMIs and needs to put more stringent targets in the DMIs in order to fast-track development and ensure improved livelihood for the population. Table 1 presents the reported indicators with their status as at 2015 as well as those indicators that do not have data.

Table 1: MDG 7 – Goal targets and indicators

Indicator	Target	Reported: Status	Not reported: Reason
Target 7A: Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources			
7.1: Proportion of land area covered by forest	Not applicable	Not reported	No data[1]
7.2.1: Carbon dioxide (CO_2) emissions: Total	Reduce CO_2 emissions by 34% from 'business as usual' by 2020	The target period goes beyond 2015[2]	
7.2.2: CO_2 emissions per capita			
7.2.3: CO_2 emissions per $1 GDP (PPP)			
7.3.1: Consumption of ozone-depleting substances[3]: Hydrochlorofluorocarbons (HCFCs)	Reduce HCFCs by 10% of baseline value by 2015	Achieved	
	Phase out HCFCs by 2040	The target period goes beyond 2015	
7.3.2: Consumption of ozone-depleting substances: Bromochloromethane (BCM)		Achieved	
7.3.3: Consumption of ozone-	Phase out the consumption of MeBr	Not achieved[4]	

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[1] South Africa has not been collecting data on this indicator due to resource constraints.

[2] The 2020 target of 34% below BAU was made conditional to the support (financial, technology transfer and capacity building) that should be provided to South Africa by the developed countries. In the period under review, such support has not matched this ambitious commitment that was made by the government of South Africa.

[3] Latest data on consumption of ozone-depleting substances (ODSs) has been updated to 2013 to meet international reporting methodology. Therefore, MDG indicator 7.3 and its sub-indicators are now reported as MDG and not as DMIs, as was the case in 2013.

[4] The trends indicate that South Africa is likely to have achieved the phasing out of MeBr by 2015; however, data would be required to authenticate this argument.

Indicator		Target	Reported: Status	Not reported: Reason
	depleting substances: Methylbromide (MeBr)	by 2015	🟥	
7.4:	Proportion of fish stocks within safe biological limits	Not applicable	Not reported	No data[5]
7.5:	Proportion of total water resources used	Not set	Latest data is at 2000; careful management of water resource required	No data
Target 7B: Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss				
7.6.1:	Proportion of terrestrial areas protected (% of total)	Have at least 17% of terrestrial and inland water areas protected by 2020	The target period goes beyond 2015	
7.6.2:	Proportion of marine areas protected (% of total)	Have at least 10% of marine areas protected by 2020	The target period goes beyond 2015	
7.7:	Proportion of species threatened with extinction (% of total)	By 2010, restore, maintain or reduce the decline of populations of species of selected taxonomic groups and improve the status of threatened species	Not achieved	
		By 2020, there should be no decline in the status of threatened species	The target period goes beyond 2015	
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 (%)	Address and resolve 50% of water backlogs, and achieve 88.3% coverage of water access by 2015	Achieved by 2005	
7.9:	Proportion of population using an improved sanitation facility (%)	Address and resolve 50% of sanitation backlogs, and achieve 74.7% access to improved sanitation facilities by 2015	Achieved by 2012	
Target 7D: By 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers[6]				
7.1:	Proportion of urban population living in slums	Domesticated	The target is reported under the domesticated indicators (DMI 12)	

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[5] The data provided does not support the indicator target or comply with required international reporting methodology.
[6] 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'.

SUMMARY OF PROGRESS TOWARDS MDG 7 TARGETS, LESSONS LEARNT AND STRATEGIES FOR POST-2015 AGENDA

The MDG 7 has four main targets (targets 7A to 7D discussed above) and ten broad indicators, with five sub-indicators, giving a total of fifteen[7] indicators (see Table 1). Out of the fifteen indicators, four indicators have been achieved by 2015 (MDG 7.3.1, which deals with the reduction of the consumption of hydrochlorofluorocarbons; MDG 7.3.2, which deals with the reduction of the consumption of bromochloromethane; MDG 7.8, which deals with access to improved safe water; and MDG 7.9, which deals with access to improved sanitation); four indicators do not have data and are therefore not reported on; five indicators have targets that go beyond 2015 and are marked as 'target goes beyond 2015', while two indicators have not been achieved. Out of the thirteen DMIs, three indicators have been achieved, namely DMI 2, which deals with protected ecosystems; DMI 3, which deals with the permitted landfills sites; and DMI 12, which deals with access to services in informal settlements. Three DMIs have not been achieved, while the remaining seven DMIs either lack data or do not have clear targets and time frames.

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

Target 7A covers the following MDG 7 indicators: MDG 7.1: Proportion of land area covered by forests; MDG 7.2: Carbon dioxide emissions; MDG 7.3: Consumption of ozone-depleting substances; MDG 7.4: Proportion of fish stocks within safe biological limits; and MDG 7.5: Proportion of total water resources used.

Achieved indicator(s) under Target 7A
MDG 7.3.1: Reduce the consumption of hydrochlorofluorocarbons (HCFCs) by 10% of baseline value (369.7 ODP metric tonnes) by 2015.
MDG 7.3.2: 100% reduction by 2002 (with possible essential use exemptions) of bromochloromethane (BCM).

MDG 7.2: Carbon dioxide emissions (total, per capita & per $1 GDP (PPP)): South Africa is a major emitter of carbon dioxide emissions, and the country is based on an energy-intensive economy. High rates of emissions (total and per capita) in the years 1994–2000 could have been driven by measures implemented to drive macro-economic growth and transformation in the phase of less developed and fragmented environmental policies and strategies. Between 2001 and 2005, the increase in emissions could have been because policies and strategies were fairly new and therefore their implementation, compliance and enforcement were the main limitations. Increasing environmental awareness and enforcement of environmental policies in the late 2000s (2006–2010) could have contributed to a decrease in the rate of increase in carbon dioxide emissions (total and per capita) and further reductions in per $1 GDP (PPP) emissions. The intensity of carbon dioxide emissions measured by per $1 GDP (PPP) has been decreasing as opposed to total and per capita emissions. If not addressed, climate change is a threat to sustainable development (including progress in MDGs) in the country. The NDP Vision 2030 commits government to establish an independent Climate Change Centre, in partnership with academic and other appropriate institutions. South Africa has also voluntarily set up measures to reduce greenhouse gas emissions through key flagship mitigation

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[7] Indicator 7.2 is divided into three sub-indicators; and indicator 7.3 is divided into three sub-indicators as well, while indicator 7.6 is divided into 2 sub-indicators, producing fifteen MDG indicators in total.

programmes, and started promoting and implementing clean energy resources such as renewable energy and energy-efficient initiatives. The country has committed to stringent carbon dioxide 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. The commitment for support to South Africa's stringent emission targets is critical for the country to achieve the set targets related to the MDG 7.2 indicators.

MDG 7.3: Consumption of ozone-depleting substances (ODSs) (HCFCs, BCM, MeBr): South Africa has achieved great success in phasing out ODSs. This was due to a massive commitment in terms of both government interventions as well as adhering to international conventions on the use of ODSs. Implementing and enforcing measures aimed at reducing consumption of ODSs has been crucial in the observed progress in reduction of ODSs towards set targets. The post-2015 agenda on ODSs should focus on ensuring the complete phase-out of the remaining ODSs, i.e. HCFCs and MeBr through swift implementation of the HCFCs Phase-out Management Plan and Methyl Bromide Management Plan.

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

Target 7B covers the following MDG indicators: MDG 7.6: Have 17% of terrestrial and 10% of marine areas protected by 2020 and MDG 7.7: Restore, maintain or reduce the decline of the proportion of species threatened with extinction by 2010 and prevent further decline by 2020.

Achieved indicator(s) under Target 7B
No indicators achieved under Target 7 B. The target to have 17% of terrestrial and 10% of marine resources protected by 2020 goes beyond the 2015 reporting period, and is therefore denoted as such, while MDG 7.7, which deals with protecting the proportion of threatened species has not been achieved by 2015.

MDG 7.6: Proportion of terrestrial and marine areas protected: The proportions of both terrestrial and marine protected areas increased significantly from 1994 to 2014. Much of the increase in terrestrial and marine protected areas was reported post-2010. The Department of Environmental Affairs has developed a national framework for an integrated approach among all stakeholders towards managing biodiversity, as well as various national policies and strategies to protect terrestrial and marine and coastal resources. Stepping up current and future efforts to protect terrestrial and marine areas is critical for achievement of targets for these indicators.

MDG 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 the threat status of species. The latest national biodiversity assessment was conducted in 2011. The species most threatened with extinction are freshwater fish (21%) and inland mammals (20%). 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 also 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

Target 7C covers the following MDG indicators: MDG 7.8: Proportion of population using an improved drinking water source (%); and MDG 7.9: Proportion of population using an improved sanitation facility (%).

Achieved indicator(s) under Target 7C
MDG 7.8: Halve, by 2015, the water backlog to achieve a target of 88.3% to safe water access for all South Africans by 2015.
MDG 7.9: Halve, by 2015, the sanitation backlog to achieve a target of 74.7% access to safe sanitation facilities for all South Africans by 2015.

MDG 7.8: Proportion of population using an improved drinking water source: South Africa has achieved the target of halving the proportion of the population without water access by 2005, where 89% of households had access to an improved water source. The achievement of this target is partly due to the South African government's efforts to ensure 100% access to water by 2014. However, disparities in provincial access need to be considered in future planning, with attention paid to infrastructure maintenance. The unpacking of the water stability indicator has highlighted the need to address the big picture of water services, where life-cycle costing of water services comes into play. Going beyond 2015, South Africa has embraced the reliability indicator into its processes (MTSF 2014–19) by setting a target of 90% access to reliable and sustainable water services, and is focusing on improving this indicator in the 27 district municipalities (i.e. rural areas). The post-2015 agenda should focus on providing water services that embrace sustainability into the definition of water services. There is also a need to ensure consistency in the provision of water services by adopting a common understanding and interpretation of the definition of access to basic services by the various provincial authorities, including functional infrastructure for reliable access to water services in the country.

MDG 7.9: Proportion of population using an improved sanitation facility: By 2011, South Africa had achieved the target of halving the 1996 backlog for access to an improved sanitation facility, with 75.2% of households having access to an improved sanitation facility in 2012. Individually, all provinces also achieved their respective sanitation targets, contributing to the achievement of the national target. Dealing with appropriate technologies that can serve as an acceptable temporary solution for informal settlements remains a challenge.

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

Target 7 D covers the MDG 7.10 indicator on the proportion of the urban population living in slums.

Achieved indicator(s) under Target 7D
No indicator achieved under Target 7D. No data available on slums; therefore, the indicator on having a proportion of the population living in informal settlements with improved access to services has been domesticated to comply with the South African situation. The domesticated indicator has been achieved by 2014.

SUMMARY OF PROGRESS TOWARDS THE DOMESTICATED INDICATORS (DMI) TARGETS, LESSONS LEARNT AND STRATEGIES FOR THE POST-2015 AGENDA

DMI 1: Proportion of natural habitats (area in percentage): The target is that by 2010, the rate of loss and degradation of natural habitats should be decreased. This target has not been achieved by 2015. The proportion of natural areas decreased by 4.13% between 1994 and 2013, and there have been substantial increases in land-use changes that contributed to natural habitat loss (e.g. urban areas increased by 365.88% and mining areas increased by 30.77% from 1994 to 2014). Land degradation leads to reduced productivity and loss of vegetation and resources to support human livelihoods and commercial activities, which in turn leads to reduced biodiversity and loss of ecosystem services. 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. Implementation and enforcement of environmental regulations that protect natural habitats is important to reduce loss of these resources.

DMI 2: Ecosystem threat status: Ecosystem threat status and protection levels are the two headline indicators assessed in the 2011 national biodiversity assessment. The most critically endangered and vulnerable ecosystems are the estuarine (79%), wetlands (48%) and river (26%) ecosystems. The least threatened ecosystems are the terrestrial (60%), estuarine (57%) and marine and coastal habitat (53%) ecosystems. South Africa has achieved the target of having a list of protected or threatened ecosystems by 2011. In addition, South Africa has put in place various policies and strategies aimed at protecting terrestrial and marine resources and progress has been made in mainstreaming biodiversity into different production sectors. South Africa has achieved the target of having a list of protected or threatened ecosystems by 2011. It is critical to step up efforts in the implementation and enforcement of current and future policies and strategies to protect terrestrial and marine and coastal resources.

DMI 3: Percentage of permitted landfill sites (decrease in number of unlicensed waste disposal sites): The target of having 80% of the 341 designated landfills licensed has been achieved in the 2014/2015 financial year. In 2015, a total of 332 out of 341 (or 92%) landfills have been licensed. However, there is a need to strengthen consultations with local municipalities to ensure efficient coordination of relevant data on identified landfills, as such is crucial for future interventions. The disparities between the 2013 reported achievement for the indicators show that not all data was utilised in the 2013 report. South Africa, through the NDP Vision 2030, commits to absolute reduction in the total volume of waste disposed to landfill each year.

DMIs[8] 5, 6 & 7: Proportion of land area covered by natural forests; savannah woodland and Albany thicket: The recent National Land Cover Assessment was released in 2005 and there has not been any assessment after that; hence, the figures are reported for 2005 only. Indigenous forests constitute about 0.4% of the land surface in South Africa and contain resources valued for biodiversity, ecotourism, non-timber forest products, and medicine. Evidence of increases in land-

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[8] DMI 4: Proportion of area protected (conservation areas) only has one data point and is therefore not reported on.

use changes reported under DMI 1 (especially urbanisation, agriculture and mining) is a threat to natural forests. South Africa has put in place several interventions to ensure sustainable forest management. It is critical to protect natural forest areas from further development through the various policies and strategies put in place by the Department of Agriculture, Forestry and Fisheries and its partners. Guidelines on property development have been developed and should be strictly implemented going forward and post-2015.

DMI 8: Proportion of land area covered by commercial plantations: Commercial plantations have multiple roles that include economic benefits; biodiversity conservation; carbon sequestration; habitat for fauna and flora; etc. At national level, the proportion of land area under commercial plantations decreased by 1.89% between 2009 and 2012. Mpumalanga has the highest proportions of land area covered by commercial plantations, followed by KwaZulu-Natal, Eastern Cape, Western Cape, Limpopo and North West. Afforestation and re-afforestation efforts driven by the Department of Agriculture, Forestry and Fisheries should be increased in the post-2015 agenda. Overall, protecting natural forests, woodlands and commercial plantations from destruction from land-use changes through various policies and strategies by the Department of Agriculture, Forestry and Fisheries (including various stakeholders) should be strictly implemented post-2015.

DMI 9: Proportion of households with access to electricity: In line with the National Development Plan[9] (NDP), the electricity target is to reach universal access by 2025 in which 90% households will have access from grid technologies and 10% from non-grid technologies. Using the GHS data for 2002 to 2013, there has been an increase in access to electricity (from 77.1% to 84.5%). This gives an indication that the 90% grid technologies target by 2025 is feasible. However, disparities in provincial access need to be considered in future planning, with attention paid to infrastructure maintenance. 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. Most of the informal settlement areas in the country have not been proclaimed, and it is therefore difficult for the government to electrify areas that are not proclaimed, since there is no assurance that these settlements will not be moved/relocated to other areas. In rural areas, the main challenges include lack of infrastructure, topography, and scattered settlements and households.

DMI 10: Proportion of population using solid fuels as primary source of energy (cooking): The use of solid fuels (coal, firewood and dung) for cooking has been declining over time, as traced by various national surveys in South Africa. Using the census data, the proportion of households using solid fuels for cooking declined from 27.8% in 1996 to 13.5% in 2011. The decline is further supported by the GHS data (from 22.6% in 2002 to 11.0% in 2013). This could be attributed to an improvement in the use of and access to better energy sources, implying that those households may now have access to grid electricity for cooking, or they may have adopted better and/or cleaner technologies, signifying an improvement towards achieving the universal energy target stated

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[9] The Department of Energy revised the target of access to electricity from the 92% recorded in the 2013 report to the universal access of 90% for grid technologies and 10% for non-grid technologies in line with the NDP Vision 2030. Therefore, the 2015 report only refers to the universal target.

earlier. At provincial level, some households recorded increases in the use of solid fuels around 2007 and 2008, which can be attributed to the global economic meltdown, which forced poor households to resort to solid fuels for cooking. Ensuring affordable access to and productive use of the relatively cleaner sources of energy, particularly among poor households, should be central to the post-2015 agenda on energy access. Growing urbanisation presents challenges for access to electricity and other services in urban areas.

DMI 11: Proportion of population using solid fuels as primary source of energy (heating): The trend of solid fuels for heating has also been declining between 1996 and 2013. This is a good sign, provided households are adopting better and cleaner technologies for heating. Ensuring affordable access to and productive use of the relatively cleaner sources of energy, particularly among poor households, should be central to the post-2015 agenda on energy access. Growing urbanisation presents challenges for access to electricity and other services in urban areas. Most informal settlement areas in the country have not been proclaimed, and it is therefore difficult for the government to electrify areas that are not proclaimed, since there is no assurance that these settlements will not be moved/relocated to other areas. In rural areas, the main challenges include lack of infrastructure, topography, and scattered settlements and households.

DMI 12: Number of households in informal settlements upgraded with access to basic services and secure tenure: The target of improving the lives of 400 000 households living in informal settlements by upgrading their access to basic services has been achieved. By 2014, a total of 447 480 households had access to basic services (such as water and sanitation), which is an indication that the target has been exceeded. Two-thirds of the residences in informal settlements are to be found in the big metropolitan municipalities, which are in a better position to address the socio-economic conditions of the urban poor. The dividends of this approach with regard to access to basic services led to South Africa's meeting the target by 2014, but tenure security still remains an issue. Therefore, real access to a growing population in the informal settlements, due to rural urban migration, poses a challenge and needs to be monitored closely. Service delivery protests in informal settlements are becoming major issues that affect the sustainability of services in those areas. Therefore, the Department of Human Settlements, local government planners and other policymakers need to include such issues in their long-term planning and provide the necessary resources at all levels, including the Integrated Development Plans (IDPs) of municipalities.

DMI 13: Instability of water supply[10]: Data on instability of water supply, or the number of reported water interruptions experienced at national level shows a modest increase over the review period. The proportion of households who reported interruptions over the 12 months before the survey increased from 23.1% in 2009 to 25.9% in 2013, with a modest decline (22.8%) in 2011. This paints a different picture given the proportion of population with access to improved water sources (MDG 7.8), where over 91% of households had access by 2011. The stability indicator takes into consideration the level and reliability of infrastructure, which also reflects the level of access across the different provinces (and between urban and rural areas) as indicated earlier. 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

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[10] This refers to the percentage of households that received water from a municipality but who, over the 12 months before the survey, reported interruptions that lasted more than 2 days or who have experienced water interruptions for more than 15 days during that time.

based on access to water infrastructure, while the service may not be accessible, due to operational inefficiency. The findings should guide the South African government on the provision and maintenance of water services infrastructure, to ensure functional reliability during its useful life.

SUMMARY OF FINDINGS: STATUS AT A GLANCE

The South African MDG 7 Goal Report reviewed the progress made on the implementation of MDG 7 indicators and targets for the period 2000–2015. The MDG 7 has four main targets (7A – 7D) and ten broad indicators, which are further divided into sub-indicators resulting in fifteen MDG 7 indicators in total. Overall, four MDG 7 indicators have been achieved by 2015; four indicators did not have data and were not reported on, five indicators have targets that go beyond 2015, while two indicators have not been achieved. The four indicators achieved include: MDG 7.3.1, which deals with reducing the consumption of Hydrochlorofluorocarbons (HCFCs) by 10% of baseline value (369.7 ODP metric tonnes) by 2015; MDG 7.3.2, which targets a 100% reduction of Bromochloromethane (BCM) by 2002 (with possible essential use exemptions); and MDG 7.8 and MDG 7.9, which deal with halving, by 2015, the backlog of the proportion of people without sustainable access to safe drinking water and basic sanitation. With regard to the global water targets on access to improved water sources, which were achieved in 2010, countries need to draw lessons learnt and take and leverage on the prevailing MDG frameworks and climate.

Five of the fifteen MDG indicators have target periods that go beyond the 2015 reporting period. They are the three indicators under 7.2, which deals with reducing carbon dioxide (CO_2) emissions by 34% from 'Business as Usual' by 2020; MDG 7.3.1, which deals with phasing out the consumption of HCFCs by 2040. Two indicators, namely MDG 7.3.3, which deals with the consumption of ozone-depleting substances (Methyl bromide or MeBr) and MDG 7.7, which deals with the proportion of species threatened with extinction (% of total), have not been achieved by 2015. Out of the thirteen DMIs, three indicators have been achieved, namely: DMI 2, which deals with protected ecosystems; DMI 3, which deals with the permitted landfills sites; and DMI 12, which deals with access to services in informal settlements. Three DMIs have not been achieved, while the remaining seven either lack data or do not have clear targets and time frames.

The challenge for the South African government is how to take those MDG indicators that have not been achieved beyond 2015, especially if they are not well articulated in the SDGs. A similar challenge relates to how the MDG indicators that have been achieved can be driven further in order to eradicate all forms of backlog in service delivery or eliminate the use or consumption of environmentally damaging substances. It is therefore necessary for South Africa to ensure effective implementation of the NDP milestones in order to drive the country's low carbon development path.

LESSONS LEARNT AND THE POST-2015 AGENDA

Some of the lessons learnt during the MDG monitoring and evaluation period is the process of engagement among the various stakeholders, ranging from the custodian departments to the data providers and others (including civil society) to track progress to date. These processes aided in fostering relationships and building a better understanding of the required strategies and methodologies for data collecting in order to develop the appropriate targets. The engagement process also strengthened the development of the appropriate response interventions. It is therefore necessary for government to leverage on these established networks to maximise future development planning priorities.

Coming to the end of the MDG process in 2015 requires government and policymakers to identify the appropriate strategies, policies and other forms of interventions to steer sustainable development beyond 2015, of which some could be addressed under the SDGs. This can be leveraged from the findings on progress made towards achieving the MDGs, based on lessons learnt and potential challenges identified to inform South Africa's future development agenda.

With regard to the MDG targets that have been achieved, the lesson learnt is to ensure reliability and operational sustainability going forward. For example, having achieved a reduction of 50% in the backlogs relating to access to improved water and sanitation facilities shows excellent progress by the South African government. However, for both these targets, the prevailing infrastructures in place need to be strengthened to eradicate the remaining backlog. The lesson learnt is that, as government approaches the threshold of over 90% access to these services, twice the amount of effort and resources are required for an additional 1% improvement in access. Therefore, greater resource mobilisation is required to eradicate the remaining backlog, and to achieve a 100% access for all South Africans. Another lesson is that South Africa should develop domesticated indicators in order to monitor progress locally. However, without clear, measurable and time-bound targets for the DMIs, evaluating such progress would not have an effective impact on future development planning.

RECOMMENDATIONS

The South African government needs to leverage on the efforts undertaken during the MDG process, and foster strong partnerships where necessary in order to ensure effective implementation of the post-2015 agenda and/or the new SDGs. Provision and maintenance of infrastructure at provincial level is crucial for sustainable service delivery post-2015 and needs to be strengthened at all levels. Further, the provision of scarce resources should also embrace sustainability into the definition of such service, and adopt a common understanding of such a definition.

As government reaches the end of the MDG agenda, it is necessary to implement appropriate interventions for a smooth transition towards the Sustainable Development Goals (SDGs), and to mainstream the other indicators into the national development agenda. Even though not all MDGs relate directly to the new SDGs, there is a need to start framing the imperatives towards the SDGs and guide government and all stakeholders accordingly. This is being addressed through the NDP Vision 2030, but effective implementation of the recommended interventions and milestones is

crucial to ensuring that the country follows and achieves the proposed low-carbon development path.

The South African government needs to ensure that relevant, up-to-date data is available with proper benchmarks in order to track and monitor progress of its ongoing domesticated or new development indicators. This will close the data gaps and ensure that the selected targets are measurable within a given time period. Government should also ensure that all indicators, especially those that have been domesticated, have clear measurable targets, with proper benchmarking.

The South African government must also ensure that MDG indicators and other national development priorities are clearly defined, with proper strategies and programmes to drive them. Where such strategies and policies are in place, there is a need to ensure effective implementation, by moving from policy to practice. The NDP Vision 2030 sets out clear milestones with time-bound strategies that need to be strictly adhered to in order to ensure the achievement of a low-carbon development path. This requires a participatory approach by all stakeholders, including government, the private sector and civil society. There is a need for dedicated strategies and programmes to address the issue of reliability and operational sustainability. The gap between the MDGs and SDGs needs to be bridged through mapping of the NDP with adequate provisions in the medium-term development planning initiatives. Government needs to ensure that the unfinished business is taken up in the SDGs or mainstreamed in other national development priorities within the NDP.

1. INTRODUCTION

The 2015 Millennium Development Goal Seven (MDG 7) Report presents findings on progress made by South Africa towards achieving the targets for MDG 7. The report further summarises the relevant policies and interventions taken, and identifies potential challenges encountered, after which it concludes with lessons learnt for the post-2015 agenda and the transition towards the Sustainable Development Goals (SDGs).

MDG 7 focuses on ensuring environmental sustainability, and encompasses most of the other goals, including poverty eradication (MDG 1). The concept of sustainability has gained increasing popularity at global level and across various sectors since the Brundtland Commission Report in 1987 (WCED, 1987). Other international conventions and agreements leading to the adoption of the 2000 United Nations (UN) Millennium Development Goals (MDGs) are the Rio Earth Summit of 1992, the UN General Assembly Resolution on MDGs of 2000, the World Summit on Sustainable Development of 2002, and the 2012 Rio+20 Conference on Sustainable Development. In fostering this notion, the South African Cabinet approved a National Strategy for Sustainable Development and Action Plan in 2011.

Progress towards achieving the MDGs has been made, but as noted by Wlokas et al. (2012), the challenges of ensuring environmentally sustainable economic and human development paths remain. Although these problems are more pressing than ever, they remain unresolved. The 2015 report reviews the latest data on all indicators and targets to determine progress made since the last reporting period and the adoption of the MDGs in 2000. The 2015 reporting period shows that out of the fifteen MDG 7 indicators, four MDG indicators have been achieved, five have targets that go beyond the 2015 reporting period, and two indicators have not been achieved (see Table 3). Out of the thirteen DMIs, three indicators have been achieved, namely DMI 2, which deals with protected ecosystems; DMI 3, which deals with the permitted landfills sites; and DMI 12, which deals with access to services in informal settlements. Three DMIs have not been achieved, while the remaining seven DMIs either lack data or do not have clear targets and time frames.

2. OBJECTIVES

The main objective of this report is to evaluate progress made towards achieving MDG 7, since the adoption of the MDGs in 2000, 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.

The specific objectives are to:

1. Examine and evaluate progress made on MDG 7 indicators and targets on the basis of data availability;
2. Review the key challenges facing the achievement of MDG 7 in South Africa;
3. Provide lessons learnt and strategies for the post-2015 development agenda;
4. Suggest possible key priority activities and strategies towards the progressive realisation of the post-2015 Sustainable Development Goals (SDGs) agenda;
5. Suggest the formation of strategic partnerships with other development stakeholders in the country, including CSOs and the organised private sector; and
6. Suggest possible strategies for mainstreaming the MDGs into the national development agenda.

3. METHODOLOGY

Although the MDGs were adopted in 2000, the benchmark period was supposed to be 1990–2015. However, since South Africa gained its political democracy in 1994, the year 1994 was adapted as the base year for all data where possible, with the exception of indicators where reliable data was collected thereafter, for example the Census of 1996 data that was used for most of the service delivery indicators.

The report relies mainly on data provided by the Sectoral Working Group Five (SWG 5), which consists of the relevant departments, agencies and civil society for MDG 7 and is coordinated by Statistics South Africa (Stats SA); other data sources are used to substantiate the findings. In updating the 2015 MDG 7 report, the Report Drafting Team (RDT) – consisting of authors – worked closely with the Extended Report Drafting Team (ERDT) and the SWG5 members to ensure that the process is widely consultative and the final report reflects all stakeholder inputs and contributions. The appropriate baseline for indicators is 1994 (indicating the post-democracy era), or 1996 (when the first population census was conducted). However, where data for 1996 or earlier is not available, other data sources (such as the General Household Survey (GHS), which collected data in 2002 for the first time) are used, with 2002 as the base year for some of the service delivery indicators. Other indicators (e.g. environment, protected areas, etc.) use the first reporting period as the base year.

In addition to the SWG5 data, the RDT used other secondary data sources to substantiate and strengthen the analysis, such as the previous MDG country reports (e.g. the 2010 and 2013 reports), other UN MDG reports, official publications from the participating departments and agencies, etc. The team worked according to the guidelines of Statistics South Africa, in consultation with SWG5 participating departments for MDG 7 who serve as main data sources.

The SWG5 consisted of officials from the following departments and agencies:

- The Department of Water and Sanitation (DWS), formerly known as the Department of Water Affairs (DWA);
- The South African National Biodiversity Institute (SANBI);
- The Department of Environmental Affairs (DEA);
- The Department of Agriculture, Forestry & Fisheries (DAFF);

- The South African National Non-governmental Organisation Coalition (SANGOCO) and Civil Society;
- The Department of Human Settlements (DHS);
- The Department of Energy (DoE); and
- The Department of Social Development (DSD).

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,[11] and from a further agreement by member states at the 2005 World Summit (resolution adopted by the General Assembly – A/RES/60/1).[12]

South Africa revised the number of indicators and targets since the 2013 reporting period, based on data availability and compliance with international MDG reporting methodologies and calculations as required by the United Nations. This resulted in changing the status of some MDGs and/or the domesticated indicators (DMIs). The South African government has taken a proactive approach and has set targets that are more stringent in the DMIs in order to fast-track development and to ensure improved livelihood for the population. The 2015 MDG 7 report analyses the indicators for which data is available as summarised in Table 2. The table also lists the reported indicators with their status at 2015 and well as those indicators that do not have data.

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[11] Available at: http://www.un.org/millennium/declaration/ares552e.htm. Accessed 3 June 2015.
[12] http://www.un.org/Docs/journal/asp/ws.asp?m=A/RES/60/1. Accessed 3 June 2015.

Table 2: MDG targets with MDG indicators: Reporting status and data availability

Indicator	Target	Reported: Status	Not reported: Reason
Target 7A: Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources			
7.1: Proportion of land area covered by forest	Not applicable	Not reported	No data[13]
7.2.1: Carbon dioxide (CO_2) emissions: Total	Reduce CO_2 emissions by 34% from 'business as usual' by 2020	The target period goes beyond 2015[14]	
7.2.2: CO_2 emissions per capita			
7.2.3: CO_2 emissions per \$1 GDP (PPP)			
7.3.1: Consumption of ozone-depleting substances[15]: Hydro-chlorofluorocarbons (HCFCs)	Reduce HCFCs by 10% of baseline value by 2015	Achieved	
	Phase out HCFCs by 2040	The target period goes beyond 2015	
7.3.2: Consumption of ozone-depleting substances: Bromochloromethane (BCM)	100% reduction by 2002 (with possible essential use exemptions)	Achieved	
7.3.3: Consumption of ozone-depleting substances: Methylbromide (MeBr)	Phase out the consumption of MeBr by 2015	Not achieved[16]	
7.4: Proportion of fish stocks within safe biological limits	Not applicable	Not reported	No data[17]
7.5: Proportion of total water resources used	Target not set	Latest data is at 2000; careful management of water resource required	No data
Target 7B: Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss			
7.6.1: Proportion of terrestrial areas protected (% of total)	Have at least 17% of terrestrial and inland water areas protected by 2020	The target period goes beyond 2015	
7.6.2: Proportion of marine areas protected (% of total)	Have at least 10% of marine areas protected by 2020	The target period goes beyond 2015	
7.7: Proportion of species threatened with extinction (% of total)	By 2010, restore, maintain or reduce the decline of populations of species of selected taxonomic groups and improve the status of threatened species	Not achieved	
	By 2020, there should be no decline in the status of threatened species	The target period goes beyond 2015	
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	Address and resolve 50% of water backlogs, and achieve	Achieved by 2005	

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[13] South Africa has not been collecting data on this indicator due to resource constraints.

[14] The 2020 target of 34% below BAU was made conditional to the support (financial, technology transfer and capacity building) that should be provided to South Africa by the developed countries. In the period under review, such support has not matched this ambitious commitment that was made by the government of South Africa.

[15] Latest data on consumption of ozone-depleting substances (ODSs) has been updated to 2013 to meet international reporting methodology. Therefore, MDG indicator 7.3 and its sub-indicators are now reported as MDG and not as DMIs, as was the case in 2013.

[16] The trends indicate that South Africa is likely to have achieved the phasing out of MeBr by 2015; however, data would be required to authenticate this argument.

[17] The data provided does not support the indicator target or comply with required international reporting methodology.

Indicator	Target	Reported: Status	Not reported: Reason
source (%)	88.3% coverage of water access by 2015		
7.9: Proportion of population using an improved sanitation facility (%)	Address and resolve 50% of sanitation backlogs, and achieve 74.7% access to improved sanitation facilities by 2015	Achieved by 2012	
Target 7D: By 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers[18]			
7.10: Proportion of urban population living in slums[19]	Domesticated	The target is reported under the domesticated indicators (DMI 12)	

Source: Constructed from various datasets provided by SWG5 members and departments

4. REVIEW OF GOVERNMENT INTERVENTIONS IN THE CONTEXT OF MDG 7

4.1 STRATEGIC APPROACH TO THE MDG PROCESSES IN SOUTH AFRICA

Issues of environmental sustainability are embraced in the South African Constitution, section 24, which gives South Africans the right to an environment that is not harmful to their health or well-being; and to have the environment protected; for the benefit of the present and future generation; through reasonable legislative and other measures that prevent pollution and ecological degradation; promote conservation and secure ecologically sustainable development and use of natural resources, while promoting justifiable economic and social development. In terms of long-term development planning, the South African government took some initiatives prior or during the 2000 MDG framework. These include efforts to accelerate service delivery to the majority of its population, focusing on water, sanitation, electricity and housing. For example, 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. According to the Parliamentary Monitoring Group (DPME, 2012), South Africa had already set its own targets[20] towards water access and infrastructure by 2014. 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, government acknowledged that despite progress made in addressing national goals and targets related to water access, South Africa was unlikely to achieve 100% coverage of water access on the basis of existing delivery trends by 2014 (DPME, 2012).

With regard to sanitation, 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,

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[18] 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'.

[19] 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.

[20] South Africa 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 not available.

from 69% in 2009 (DPME, 2012). Although the 100% targets of access to water and sanitation were not achieved by 2014, the South African government's efforts to raise the bar on service delivery are an indication that national development priority was taken seriously prior to the adoption of the MDG targets. According to the Presidency, the challenge of inadequate infrastructure to ensure long-term operational sustainability of the services, coupled with maintenance, affects the water and sanitation sector (DPME, 2012).

Other initiatives include the Integrated National Electrification Programme (INEP) adopted since 1994, which has been able to connect 5.4 million households, with 85% of all households in South Africa having access to electricity by 2012 (DoE, 2012). From 1994 to 2011, government had successfully increased the proportions of households that have access to energy from 30% to 85% (DoE, 2012) through the INEP. This led to the government striving to increase the proportion of the population with access from 89% in 2009 to 92% in 2014, as part of its DMIs, while keeping in mind the target for universal access by 2025 in line with the NDP Vision 2030. In striving towards the universal access to energy and quality services it was imperative to conduct residential sector surveys to gather information about energy- related perceptions and behaviour in South Africa. Further, the adoption of domesticated indicators was part of the South African government's initiative to track and monitor progress on its key development priorities, along with the MDG process.

The overarching national development initiative to facilitate the transition to the Sustainable Development Goals (SDGs) is the National Development Plan (NDP) Vision 2030. The NDP Vision 2030 has adopted 'a low-carbon development path' as its long-term strategic approach to address environmental sustainability. The NDP Vision 2030 sets out clear milestones with a time-bound implementation framework that needs to be strictly adhered to in order to ensure the achievement of a low carbon development path. As noted by the Presidency (2011, p. 192),

> 'The transition to a low carbon, resilient economy and society requires careful phasing out of strategic planning, evidence gathering and investment. While the aim is to reduce emissions and provide relief for those affected by environmental impacts, important work is simultaneously required to lay the ground work for future emission reductions, climate resilience through investment in low carbon emissions and climate resilient infrastructure. Attention to phasing and sequencing will be an important part of the climate change planning process.'

Therefore, the fulfilment of a low carbon development path requires a participatory approach by all stakeholders, including government, the private sector and civil society.

Further, the 2002 Johannesburg Plan of Implementation (JPOI) that was laid out at the World Summit on Sustainable Development 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:

- Poverty eradication

- Changing unsustainable patterns of consumption and production
- Protecting and managing the natural resources base of economic and social development
- Sustainable development in a globalising world
- Health and sustainable development
- Sustainable development in Africa
- Means of implementation
- Institutional framework for sustainable development

In 2008, the South African Cabinet approved the National Framework for Sustainable Development (NFSD) and the National Strategy for Sustainable Development (NSSD) in 2011. The strategy has the following five strategic priorities:

- Priority 1: Enhancing systems for integrated planning and implementation
- Priority 2: Sustaining our ecosystems and using natural resources efficiently
- Priority 3: Towards a green economy
- Priority 4: Building sustainable communities
- Priority 5: Responding effectively to climate change

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, undated). This outcome consists of four outputs with 18 sub-outputs and 41 indicators. The four main outputs outlined under Outcome 10 are:

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

4.2 GOVERNMENT INTERVENTIONS: POLICIES, FRAMEWORKS, PLANS AND STRATEGIES

The South African government's support for environmental sustainability has become prominent through various strategies and policy frameworks that provide an enabling environment for advancing the concept of sustainable growth and achievement of MDG 7 targets in South Africa. Examples include the South Africa Framework for Responding to Economic Crisis; the 2009–2014 Medium Term Strategic Framework (MTSF) and its associated Outcomes; the Green Economy Accord; the Long Term Mitigation Strategy; the National Climate Change Response Paper (NCCRP); the Implementation of the Green Fund; the Technical Working Group on Mitigation; the green economy initiatives of the New Growth Path (NGP); the Industrial Policy Action Plan (IPAP-2); the National Strategy for Sustainable Development and Action Plan (NSSD1); the National Climate Change Policy; the National Development Plan – Vision 2030; the Ten-Year Innovation Plan; the Integrated Resource Plan 2010-2025 and Integrated Energy Plan; Environmental Fiscal Instruments (e.g. carbon tax); and the Third National Skills Development Strategy. However, review of progress of the MDG 7 indicators and targets shows that much still needs to be done in order to ensure the effective implementation of the various government interventions, with only four out of fifteen MDG 7 targets having been achieved by 2015, despite the significant progress made to date. It is therefore necessary for South Africa to develop an appropriate post-2015 agenda that would enable the mainstreaming of MDG targets into the national development priorities. This would require a stronger coordination of government interventions as well as collaboration with other key stakeholders, including the private sector and civil society.

Ensuring environmental sustainability is the cornerstone to achieve sustainable development and poverty alleviation, and failure to achieve biodiversity stability undermines social and economic development efforts. However, achieving environmentally sustainable economic and human development paths remains a challenge for most countries, including South Africa. For example, despite remarkable progress on development priorities over the past 20 years, poverty, inequality and unemployment remain the core development challenges in South Africa, commonly known as the triple challenges. To address these challenges, the South African government recognises the need to develop proper strategies and clean technologies in extraction of natural resources, but its reliance on coal as a source of energy continues to pose a challenge for environmental sustainability. While there is improved access to services such as water and electricity, unreliability of infrastructures (especially in the rural areas) limits access for some of its population. The country needs to ensure that the benefits of resource extraction lead to a more inclusive sustainable development path.

With regard to the use of ozone-depleting-substance (ODSs) and waste management, most of the interventions highlighted above on environmental sustainability contributed to the phasing out of MeBr, and a reduction in the use of HCFCs. The efforts were guided by management plans in order to track progress on some of the MDG 7.2 and 7.3 targets. There are also platforms to engage the relevant stakeholders through regular meetings on ODSs. In terms of international accords, South Africa acceded to the Vienna Convention for the protection of the ozone layer and the Montreal Protocol on substances that deplete the ozone layer.

For protected areas, the following interventions are in place: the National Environmental Management Protected Areas Act (Act No. 57 of 2003) (NEMPAA); the Mountain Catchment Areas

Act, 1970 (Act No. 63 of 1970); the World Heritage Convention Act, 1999 (Act No. 49 of 1999); the National Forests Act, 1998 (Act No. 84 of 1998) (NFA); the National Protected Areas Expansion Strategy (NPAES); the Marine Living Resources Act, (Act No. 18 of 1998); the White Paper on Sustainable Forest Development in South Africa, 1996; the National Veld and Forest Fire Act (Act No. 101 of 1998); the Forest Sector Broad-Based Black Economic Empowerment Charter; the Provincial Protected Areas Expansion Strategies; the SANParks Land Acquisition Plan; and the National Co-Management Framework.

In terms of the forest resource protection, the South African government has enforced that all major developments are preceded by an Environmental Impact Assessment (EIA) before they continue, in order to minimise impacts on natural areas or on areas that are important to biodiversity. Under NEMPAA, certain areas are legally protected and need to remain in their pristine or natural condition, and recently, South Africa has developed the National Protected Areas Expansion Strategy (NPAES) to increase protected areas in the country. Ecosystems that have been threatened are protected under the Biodiversity Act, in addition to the establishment of biodiversity stewardship programmes in several provinces for the protection of ecosystems. The National Forests Act, 1998 (NFA) provides protection to all natural (indigenous) forests wherever they occur (public or private land). In terms of the legislation, trees from natural forests (including their products) may not be cut, damaged or transported without the necessary authorisation (DAFF, 2015). Further, the Biodiversity Act stipulates that all heavily utilised species, or species of conservation concern should have Biodiversity Management Plans and develop a register of protected areas. These plans allow for the coordination between multiple role players to ensure the long-term survival of the species in nature.

The DAFF introduced the Forest Sector Broad-Based Black Economic Empowerment Charter and the DAFF Integrated Growth and Development Plan: 2030. The Forest Sector Charter has set targets for the commercial forest sector to meet transformation, with the Forest Charter Council established to oversee implementation of the Charter (DAFF, 2015). Further, DAFF has initiated a National Forest Resources Assessment (NFRA) programme that seeks to acquire baseline information on all types of forests in the country.

Some of the achievements made towards meeting the water and sanitation targets can be attributed to the initiatives by the DWS, such as

- R2.8 billion spent on the infrastructure delivery programme of 1994;
- 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 Municipal Infrastructure Grant (MIG) Cities Fund; and
- The review of the 2013 National Water Resources Strategy 2 (Presidency, 2013[21]).

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[21] These sources were compiled and presented at the 20-year 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.

Sanitation services are funded through a number of grants, including the Rural Households Infrastructure Grant; the Urban Settlements Development Grant; the Human Settlements Development Grant; and the Municipal Infrastructure Grant (DWS, 2015).

In terms of water policies and frameworks, the list includes the Water Services Act (1997); the National Water Act (1998); the Strategic Framework for Water Services of 2003; the National Water Resources Strategy of 2004; the Regional Bulk Infrastructure fund of 2007; the MIG Cities Fund of 2008; the National Water Resources Strategy of 2013; the National Sanitation Strategy; the Water Services Act (2007); the Municipal Structures Act (1998); the Municipal Systems Act (2000); and the White Paper on Basic Household Sanitation of 2001.

Other water and sanitation interventions include the collection of planning related information through the Water Services Development Plan (WSDP) process where each Water Services Authority (e.g. municipality) is required by law to complete a WSDP. In addition, DWS performs a water services sector regulatory function, which monitors municipal water treatment, wastewater treatment and tariff setting compliance (available at www.wsnis.gov.za). In terms of regional and international cooperation, South Africa follows the Africa Water Vision 2025[22] and has committed to sustainable water services development in line with the Rio Earth Summit of 1992, the UN General Assembly Resolution on MDGs of 2000, the World Summit on Sustainable Development of 2002, and the Rio+20.

Energy related indicators are supported by the following initiatives, among others, the solar water heating programmes; energy efficiency and demand management programmes; Free Basic Electricity (FBE); Free Basic Alternative Energy (FBAE); Inclined Block Tariff (IBT); the Integrated National Electrification Programme; the Renewable Energy Strategy; the National Energy Bill; the Nuclear Energy Act (1999); the National Nuclear Regulatory Act (1999); the Petroleum Products Amendment Act (2003); the Petroleum Products Amendment Act (2004); the Petroleum Pipelines Act (2003); the Petroleum Pipelines Money Act; the Electricity Supply Industry Regulatory Bill; the Electricity Supply Industry Restructuring Money Bill; the Gas Act (2001); the Electricity Distribution Industry Restructuring Bill; the Electricity Distribution Industry Restructuring Money Bill; and the National Energy Regulator Act (2004).

The South African Constitution makes provision for access to housing and tenure as a basic human right for its population. In support of such rights, between 1992 and 1996, the South African government introduced the National Housing Subsidy Scheme (NHSS) to provide housing options for low-income households (NDoH, 1994). In 2006, the DHS introduced the Upgrading of Informal Settlements Programme, taking a community development approach of prioritising *in situ* upgrading as opposed to relocations through the provision of basic services to public stands for all the inhabitants in informal settlements. This programme was facilitated through the Financial Sector Charter, signed between the state and the private sector and the introduction of the MIG, with greater focus on upgrading of townships and community infrastructure. Further, the 2006 Community Residential Unit (CRU) Policy Framework and Programme Guidelines are incorporated in the revised National Housing Code, to replace the National Hostel Redevelopment Programme and the proposed Affordable Housing Programme.

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[22] The Africa Water Vision 2025 focuses on 'An Africa where there is an equitable and sustainable use and management of water resources for poverty alleviation, socio-economic development, regional cooperation and the environment'.

Strategies and policies on human settlements include the Housing Act (Act No. 107 of 1997 amended by Acts 28 and 60 of 1999; Act No. 4 of 2001); the Prevention of Illegal Eviction and Unlawful Occupation of Land Act (Act No. 19 of 1998) (PIE Act); the Rental Housing Act (Act No. 50 of 1999 amended by Act No. 43 of 2007); the National Norms and Standards for the Construction of Stand Alone Residential Dwellings Financed through the National Housing Programmes (April 2007); the Social Housing Act (Act No. 16 of 2008); the National Housing Code (2000, revised in 2009); and the Breaking New Ground (BNG) strategy, which encouraged concentration on increasing densities, multi-land use, economic mix of housing and land tenure options, with a focus on improved access to socio-economic resources for all the population. DHS also aims at improving basic services, including the eradication of the bucket system in informal settlements for sanitation.

5. CHALLENGES

Efforts to achieve the MDG targets and to ensure effective implementation have been affected by various challenges stemming from resource constraints, which include financial and technical capacity constraints, especially at local municipality level. For example, according to the latest National Non-Revenue Water Assessment Report by McKenzie, et al. (2012), more than 50% of municipalities cannot provide a water balance, which is a required monitoring tool to ensure effective service delivery. Another challenge stems from the fact that the financial and technical support by developed countries has not sufficiently matched the stated GHG emission reduction ambition of the country (DEA, 2015). Other challenges include lack of infrastructure maintenance; uneven budgetary allocations across provinces; and the state of infrastructure in the provinces, which is not up to standard in some instances (DWS, 2015) and consequently leads to different levels of access to services among provinces, as shown in the analysis section. The other cross-cutting challenge is the nature of services required for a changing environment, where the population is increasing, especially the influx of people to informal settlements, while resources are limited. This implies that government has to keep up with 'a moving target', which in turn affects long-term sustainability of service delivery. Hence, the main challenge is that of ensuring reliability of services through operational efficiency, and this needs to be addressed in the post-2015 development agenda.

The main constraint currently affecting South Africa is energy generation capacity, raising issues of energy security and sustainability over the long-term, with the bulk energy provider resorting to electricity load-shedding, which affects businesses and the economy at large. The country's heavy reliance on coal as an energy source does not only also pose challenges of environmental impact, but limited generation capacity is the main threat to economic survival. The proposal of alternative energy sources, such as the proposed nuclear power installation, has been challenged by environmentalists, given its potential negative impact on the environment and its associated socio-economic effects on the affected communities.

Other challenges include the scarcity of limited resources like water for a semi-arid country, leading to inadequacy of service provision at local level, and the pollution of water resources which cannot be adequately monitored owing to capacity constraints local level (DWS, 2015). The increasing population – especially in the informal settlements – puts pressures on municipalities, and rural-urban migration dynamics affect access to services. Threats of extinction of resources and the

impact of climate change are major challenges, as noted by Griffith (2008), where over-exploitation of fish stocks globally, with marine ecosystems threatened, affect livelihoods. According to DAFF (2008[23]), over-exploitation of fish species leads to the collapse of South Africa's line fish.

Relevant policies and strategies to address and effectively monitor some of the MDG targets have also been identified as constraints. For example, a fragmented service delivery approach where responsibilities for water services have been delegated to a number of government departments (e.g. DWS, DCOG, DHS and WSAs) can serve as a limitation (DWS, 2015). Appropriate monitoring and evaluation systems are also not in place to closely monitor the status of some resources and service delivery in general. This requires a coordinated approach on policy interventions by the various government departments in order to ensure effective policy impacts and service delivery. While the South African government has put in place a number of policies and strategies to address its national development agenda, some of the MDG indicators required specific interventions, which may not have been ready at the time of monitoring the MDGs. The same applies to the appropriate interventions (both in terms of strategic direction as well as resources) to ensure that government collects the relevant data to comply with the international requirements for the MDGs. For this reason, data is not available for a number of the MDG 7 indicators to guide policy interventions at the end of the 2015 reporting period, although progress has been made in other interventions, including domesticating some of those indicators[24].

With regard to threatened species, one of the challenges facing SANBI is to develop a consolidated national Red List of threatened species, looking at the proportion of such species at a particular point in time, despite efforts made to launch the first Red List (http://redlist.sanbi.org). Nevertheless, SANBI has introduced new SDG indicators to develop a 'Red List Index' that would enable government to monitor the movement of species over time and ensure effective conservation efforts (SANBI, 2015). Part of this could be attributed to the fact that the various departments and the main data agencies needed to develop the appropriate strategies and mobilise the required resources in order to respond to the MDG indicators.

In terms of informal settlements, government interventions are done through a variety of programmes and projects funded through the Human Settlements Development Grant (HSDG) registered in the HSS under the Upgrading of Informal Settlements Programme and the Emergency Housing Programme. However, there are no linkages between the Upgrading of Informal Settlements Programme, the Sanitation Programme and the USDG funded project deliverables to enable consolidated reporting against the domesticated indicator on human settlements (DMI 12). This confirms a lack of coordination between the various government departments, as indicated earlier. Further, informal settlements are dynamic and volatile, due to the mobility of households and the associated risks with the settlements, land use and vulnerability.

Other challenges/constraints include failure by municipalities to adhere to the basic principles of structured *in situ* upgrading as opposed to total re-development of slums; lack of clarity in municipal

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[23] National Protected Area Expansion for South Africa, 2008.
[24] Examples of such indicators are: MDG 7.3 on the consumption of ozone-depleting substances that have been previously reported as domesticated due to data compliance issues; MDG 7.7 on the proportions of threatened species, where SANBI is still working on the 'Red List' target due to massive numbers of threatened species, despite the data collected to date. The same challenges apply to MDG 7.4 on fish stocks within biological safe limits where collected data does not comply with the required data, as well as MDG 7.10 on human settlements, which has been domesticated as DMI 13, although the available data is still not adequate to monitor the indicator.

inclusion criteria of settlements for upgrade; the insufficiency of budget to cover the huge capital costs required (i.e. for housing as well as the associated land and infrastructure); shortages of sufficient suitable and affordable land; and inadequate existing bulk services. These constraints have been aggravated by capacity limitations and material resource shortages (both within the private sector and government) that limit effective implementation of projects (Ziblim & Sumeghy, 2013). Further, SONGNet (2010) noted that the difficult nature of many informal settlement sites (e.g. high densities, steep slopes, geotechnical and drainage problems) and a lack of suitable relocation destinations in close proximity to job opportunities and access to social services worsen the situation. Nevertheless, in order to address the challenge of slums and improve the living conditions of slum dwellers, the South African government has committed itself to accelerating service delivery and improving the quality of life (DHS, 2015).

Challenges relating to the protection of forests arise from tracking the proportion of natural areas, which require good land cover data for the whole country, considering that the last national land cover study was published in 2005. According to DAFF (2015), the Department of Rural Development has been tasked to lead the project of creating land cover for the whole country, with some progress made to date. The private sector has also been active in creating land cover for the whole country, but with cost implications.

The main challenges facing ecosystem survival come from loss of natural habitat, invasive alien species, and climate change impacts, among others. All these impacts have increased in the last decade and put more pressure on ecosystems, leading to the loss of ecosystem services. In response, government has developed maps of biodiversity priority areas to ensure that appropriate decisions are made where development is best located and where it is critical to keep natural areas intact. Other threats to natural forests come from mining, development and illegal harvesting of certain species for medicinal purposes. DAFF has developed policies, principles and guidelines for the control of developments affecting natural forests which provide for off-sets in cases where it is not possible to avoid cutting down natural forests when development is carried out. The South African government has taken various initiatives to introduce community patrols, raise awareness, and to establish provincial conservation agencies responsible for ensuring that conservation targets are met. The development of the National Expanded Protected Areas Strategy serves to complement the National Forests Act of 1998 and other interventions for the effective protection of natural resources (DAFF, 2015).

6. PROGRESS IN ACHIEVING MDG 7 INDICATORS

6.1 BACKGROUND ON MDG 7

Analysis of the MDG7 targets and indicators is based on the latest data for each indicator. In some instances, the 2015 data for both MDGs and DMIs (e.g. service delivery indicators, permitted landfills, etc.) has been updated, while in other instances (e.g. land area covered by forest, threatened species, etc.), the data remained the same. Some MDG targets that have been previously reported as MDG targets have been domesticated due to differences in calculation methodology, while others, such as the ozone-depleting zones (MDG 7.3) that were previously reported as DMIs have been updated to MDG targets, using the appropriate data and calculation methodology to

comply with international standards. According to the UNECA (2014) report, Africa is making good progress on the environmental targets of MDG 7. Many African countries are reducing their CO_2 emissions and use of ozone-depleting substances, and are increasing the protection of territorial and marine areas. The following are some of the targets that have been achieved for South Africa as per analysis of this report.

Review of progress on MDG indictors is presented in Table 3, which shows that out of the fifteen MDG 7 indicators, four MDG indicators have been achieved, five have targets that go beyond the 2015 reporting period and two indicators have not been achieved.

Table 3: Progress on MDG Indicators and Targets: Facts and Findings

MDG Goal 7: Ensure Environmental Sustainability – MDG indicators and targets: Facts and findings								
Original indicator for monitoring progress	Goals & targets / Nationally adopted goals & targets (date when adopted)	1994 baseline (or closest)	2010 (Census)	Current status 2015 (using latest year of data availability)	2015 target	Other period target	Target achievability	Reporting status
Target 7A: Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources								
7.1: Proportion of land area covered by forest[25]	Not applicable	No data	No data	No data	No data	No target	Not applicable[26]	No data[27]
7.2.1: Carbon dioxide (CO_2) emissions: Total	The target[28] is to reduce CO_2 emissions by 34% from 'business as usual' by 2020 (2009)	380	480	518 (2010)		34% reduction from 'business as usual' by 2020	The target period goes beyond 2015[29]	The target period goes beyond 2015[30]
7.2.2: CO_2 emissions per capita		9.40	10.24	10.37 (2010)				
7.2.3: CO_2 emissions per $1 GDP (PPP)		1.34	1.18	1.09 (2010)				
7.3.1: Consumption of ozone-depleting substances[31]: Hydrochlorofluorocarbons (HCFCs)	HCFCs reduce by 10% of baseline value (369.7 ODP metric tonnes) by 2015	No data	222.6 (2006)	284.8 (2013)	Reduce HCFCs by 10% of baseline value by 2015		Achieved	
	Phase out consumption of HCFCs by 2040					Phase out HCFC by 2040	The target period goes beyond 2015	The target period goes beyond 2015
7.3.2: Consumption of ozone-depleting substances: Bromochloromethane (BCM)	100% reduction by 2002 (with possible essential use exemptions)	No data	0 (2006)	0 (2013)	100% reduction by 2002 (with possible essential use exemptions)		Achieved By 2006	

[25] No data is available for this indicator, and consequently the indicator is not reported on for this MDG report.
[26] All indicators without data are treated as not applicable.
[27] No data has been collected for this indicator since its adoption, due to resource constraints. Therefore, South Africa has not been able to monitor the target.
[28] Note should be taken that the datasets for calculation of the indicators differ. Data from 1994 to 1999 used different methodology from the data of 2000 to 2010.
[29] All indicators that go beyond the 2015 reporting period are denoted as 'post-2015 agenda' in the decision column.
[30] The 2020 target of 34% below BAU was made conditional to the support (financial, technology transfer and capacity building) that should be provided to South Africa by the developed countries.
[31] Latest data on consumption of ozone-depleting substances (ODSs) has been updated to 2013 to meet international reporting methodology. Therefore, MDG indicator 7.3 and its sub-indicators are now reported as MDGs and not as DMIs, as was the case in 2013.

MDG Goal 7: Ensure Environmental Sustainability – MDG indicators and targets: Facts and findings								
Original indicator for monitoring progress	Goals & targets / Nationally adopted goals & targets (date when adopted)	1994 baseline (or closest)	2010 (Census)	Current status 2015 (using latest year of data availability)	2015 target	Other period target	Target achievability	Reporting status
7.3.3: Consumption of ozone-depleting substances: Methylbromide (MeBr)	Phase out by 2015	No data	330.0 (2006)	140.5 (2013)	Phase out the consumption of MeBr by 2015		Not achieved	Target not achieved by 2015 using the latest 2013 data
7.4: Proportion of fish stocks within safe biological limits[32]	Not applicable	No data	No data	No data	No data		Not applicable	Not reported
7.5: Proportion of total water resources used	No target	26.61 (1990)	25.03 (2000)	No latest data	No target		Not applicable	Latest data is at 2000[33]
Target 7B: Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss								
7.6.1: Proportion of terrestrial areas protected (% of total)[34]	Have at least 17% of terrestrial and inland water areas protected by 2020 (2011)[35]	5.18	6.20	7.85 (2014)	No target	By 2020, have at least 17% of terrestrial and inland water areas are conserved	The target period goes beyond 2015	The target period goes beyond 2015
7.6.2: Proportion of marine areas protected (% of total)	Have at least 10% of marine areas protected by 2020 (2011)	No data	6.54	7.52 (2014)	No target	By 2020, have at least 10% of coastal and marine areas conserved	The target period goes beyond 2015	
7.7: Proportion of species threatened with extinction (% of total)	By 2010, restore, maintain or reduce the decline of populations of species of selected taxonomic groups and	Not applicable	No data	No data	By 2010, restore, maintain or reduce the decline of populations of		Not Achieved by 2015[36]	Target not achieved. Provided data does not correspond to the target
Plants		No data	No data	14 (2014)				

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[32] Provided data does not comply with MDG reporting methodology, and therefore the indicator is not reported on for the 2015 MDG report.

[33] No data has been collected for this indicator since 2000, due to resource constraints. Careful management of water resources required.

[34] Conservation areas and privately owned nature reserves not reported on here, as data is not available at present.

[35] UNEP/CBD/COP/10/27 (2011).

[36] 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 does not give a trend over time to see if the number or level of threatened species are declining or not.

MDG Goal 7: Ensure Environmental Sustainability – MDG indicators and targets: Facts and findings								
Original indicator for monitoring progress	**Goals & targets / Nationally adopted goals & targets (date when adopted)**	**1994 baseline (or closest)**	**2010 (Census)**	**Current status 2015 (using latest year of data availability)**	**2015 target**	**Other period target**	**Target achievability**	**Reporting status**
Inland mammals	improve the status of threatened species	No data	20 (2004)	No data	species of selected taxonomic groups and improve the status of threatened species			
Birds		No data	No data	11 (2013)				
Amphibians	A further target is set that, by 2020, there should be no decline in the status of threatened species	No data	No data	14 (2010)		A further target is set that, by 2020, there should be no decline in the status of threatened species.	The target period goes beyond 2015	The target period goes beyond 2015
Reptiles		No data	No data	9 (2011)				
Freshwater fish		No data	No data	21 (2007)				
Butterflies		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								
7.8: Proportion of population using an improved drinking water source (%)	Halve, by 2015, the water backlog by achieving a target of 88.3% to safe water access for all South Africans by 2015 (2000)	76.6% (1996)	89.1% (2011)	90.8% (2013)	88.3% (2015)		Achieved by 2005	Target achieved by 2005
7.9: Proportion of population using an improved sanitation facility (%)	Halve, by 2015, the sanitation backlog to achieve a target of 74.7% access to safe sanitation facilities for all South Africans by 2015 (2000)	49.3% (1996)	66.5% (2011)	76.8% (2013)	74.7% (2015)		Achieved by 2012	Target achieved by 2012

MDG Goal 7: Ensure Environmental Sustainability – MDG indicators and targets: Facts and findings								
Original indicator for monitoring progress	Goals & targets / Nationally adopted goals & targets (date when adopted)	1994 baseline (or closest)	2010 (Census)	Current status 2015 (using latest year of data availability)[37]	2015 target	Other period target	Target achievability	Reporting status
Target 7D: By 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers[37]								
Original indicator for monitoring progress	Nationally adopted goals & targets (date when adopted)	1994 baseline (or closest)	2010 (Census)	Current status (latest year of data)	2015 target	Other period target	Target achievability	Reporting status
7.10: Proportion of urban population living in slums	Domesticated	No data	No data	No data	No data		Not applicable	Target is domesticated to comply with available data[38]

[37] 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'.
[38] South Africa does not apply or use the 'slum' terminology as it deals with informal settlements and not slums. Therefore, this indicator has been domesticated under DMI 12.

6.2 ANALYSIS OF MDG 7 TARGETS AND INDICATORS

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

Target 7A covers the following MDG indicators: MDG 7.1: Proportion of land area covered by forests; MDG 7.2: Carbon dioxide emissions; MDG 7.3: Consumption of ozone-depleting substances; MDG 7.4: Proportion of fish stocks within safe biological limits; and MDG 7.5: Proportion of total water resources used.

MDG indicator 7.1: Proportion of land area covered by forests

The South African government has not been able to collect the required data for this indicator, due to resource constraints, despite substantial progress in terms of policies and other government interventions towards forest resource protection and management.

Table 4: MDG indicator 7.1 – Proportion of land area covered by forests[39]

INDICATOR	DEFINITION	TARGET
MDG 7.1: Proportion of land area covered by forests	The indicator is defined as the proportion of forest area to total land area and expressed as a percentage. 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 5 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	Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources

MDG indicator 7.2.1: Carbon dioxide (CO2) emissions (total)

Analysis of the indicators on carbon dioxide emissions needs to be put in context of the current situation prevailing in the country, as well as the challenges that government has to deal with in order to balance sustainable economic development and environmental sustainability. South Africa is a major emitter of carbon dioxide emissions 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 some 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.

Table 5: MDG indicator 7.2.1 – Carbon dioxide emissions (total)

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[39] This indicator is not reported on due to non-availability of data.

INDICATOR	DEFINITION	TARGET
MDG 7.2.1: Carbon dioxide emissions: Total	Estimates of total carbon dioxide (CO_2) emissions include anthropogenic emissions, less removal by sinks of carbon dioxide (CO_2). The term 'total' implies that emissions from all national activities are considered. The typical sectors for which carbon dioxide 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 that follows the Intergovernmental Panel on Climate Change guidelines is based on national emission inventories and covers all sources of anthropogenic carbon dioxide emissions as well as carbon sinks (such as forests). Carbon dioxide emissions/removals by land use, land-use change and forestry 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	34% reduction from 'business as usual' by 2020[40]

The estimates of total carbon dioxide emissions from 2000 to 2010 are presented in Figure 1, which shows an overall increasing trend for that period, recording an increase of 21.9% between the two periods. It should be noted that the calculation methodology used to calculate the 1994–1999 values for carbon emissions and that used for the 2000–2010 inventory differs. Therefore, the trend analysis for this report will focus on the period 2000–2010. Table 6 presents the rate of change of carbon dioxide emissions (total, per capita and per $1 GDP (PPP)) for the period 2000–2010. The rates of change are discussed under the discussion of results of each of the indicators.

Total carbon dioxide emissions increased by 22% between 2000 and 2010, with the greatest increase occurring between 2000 and 2005 (13%). The increase in total carbon dioxide emissions dropped to 8% in the period 2005–2010. The driving factors that could have contributed to high rates of increase in total carbon dioxide emissions in the first period could be attributed to several efforts implemented after democracy in 1994. High rates of emissions (total and per capita) in the years 1994–2000 could have been driven by measures implemented to drive macro-economic growth and transformation in the phase of less developed and fragmented environmental policies and strategies. Between 2001 and 2005, the increase in emissions could have been because policies and strategies were fairly new and therefore their implementation, compliance and enforcement were the main limitations. The trend has, however, changed and more emphasis is being placed on the impact of macro-economic investments on the environment, and various efforts are being implemented by the South African government in this regard as indicated below. The increasing efforts by government and various stakeholders to address environmental impacts (including emissions emanating from macro-economic transformation and growth initiatives) could also have contributed to the slow increase in emissions in the late 2010s.

The target set by the South African government is to reduce total carbon dioxide emissions by 34% from the 'business as usual' (BAU) scenario by 2020. However, the current data, which shows an increasing trend for total emissions between 2000 and 2010 (see Figure 1), does not provide

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[40] 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.

sufficient evidence that this target would be achieved by this period. The rate of carbon dioxide emissions for the three periods (2000–2005; 2005–2010; and 2000–2010) are presented in Table 6.

Table 6: Rate of carbon dioxide emissions

Timeframe	Rate of change of carbon dioxide emissions		
	Total carbon dioxide emissions (increase)	Carbon dioxide emissions per capita (increase)	Carbon dioxide emissions per $1 GDP (PPP) (decrease)
2000–2005	13%	5.2%	- 6.4%
2005–2010	8%	1.2%	- 7.7%
2000–2010	**22%**	**6.5%**	**- 13.7%**

Figure 1: MDG indicator 7.2.1 – Carbon dioxide emissions (total), 2000–2010[41]
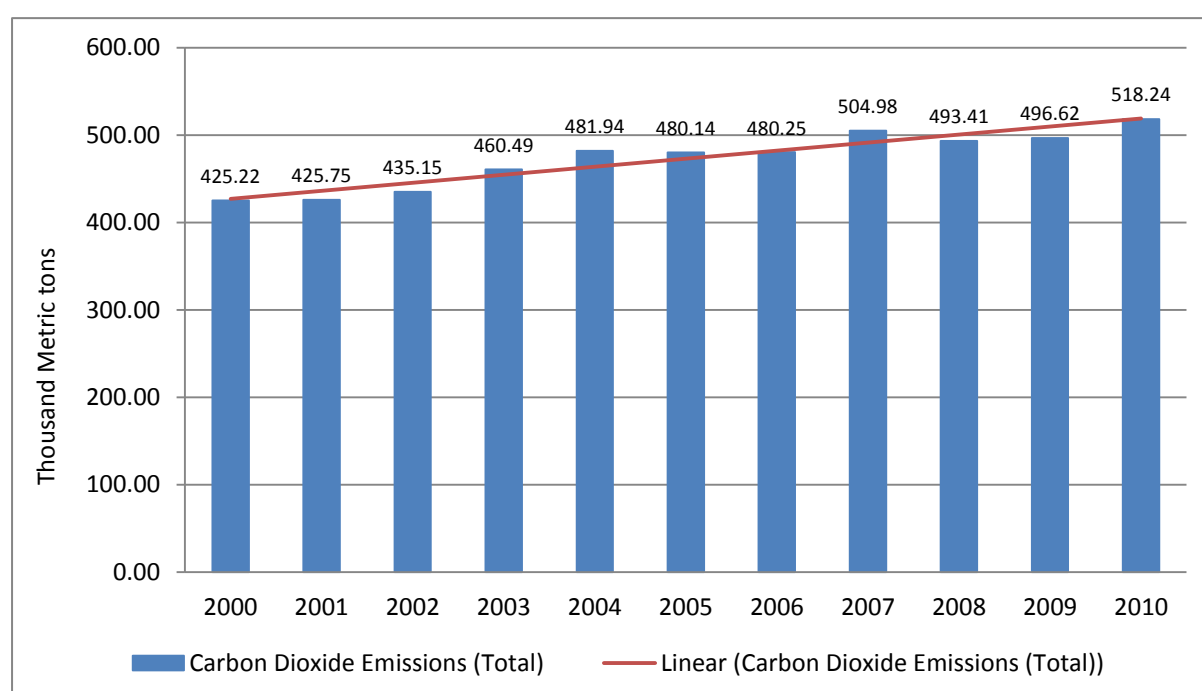
Source: Department of Environmental Affairs, 2014a

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[41] It should be noted that the calculation methodology used to calculate the 1994–1999 values for carbon emissions and that used for the 2000–2010 inventory differ. Therefore, the trend analysis for this report focuses on the period 2000–2010.

MDG indicator 7.2.2: Carbon dioxide emissions (per capita)

Table 7: MDG indicator 7.2.2 – Carbon dioxide emissions (per capita)

INDICATOR	DEFINITION	TARGET
MDG 7.2.1: Carbon dioxide emissions: Per capita	Carbon emissions per capita are measured as the total amount of carbon dioxide emitted by the country as a consequence of all relevant human (production and consumption) activities, divided by the population of the country.	34% reduction from 'business as usual' by 2020

Figure 2 presents carbon dioxide emissions per capita for the period 2000–2010. The results show that carbon dioxide emissions per capita increased by 6.6% from 2000 to 2010, with fluctuations in between. As with total carbon dioxide emissions discussed above, the period 2000–2005 experienced the highest increase in carbon dioxide emissions per capita (5.2%). The rate of increase of per capita emissions also slowed to 1.2% between 2005 and 2010. In the period 2005–2010, the reduction in the rate of increase (from 5.2% in the previous period to 1.2%) could also be a result of much attention being paid not only to designing but also to the implementation of environmental related regulations and programmes.

Figure 2: MDG indicator 7.2.2 – Carbon dioxide emissions (per capita), 2000–2010[42]
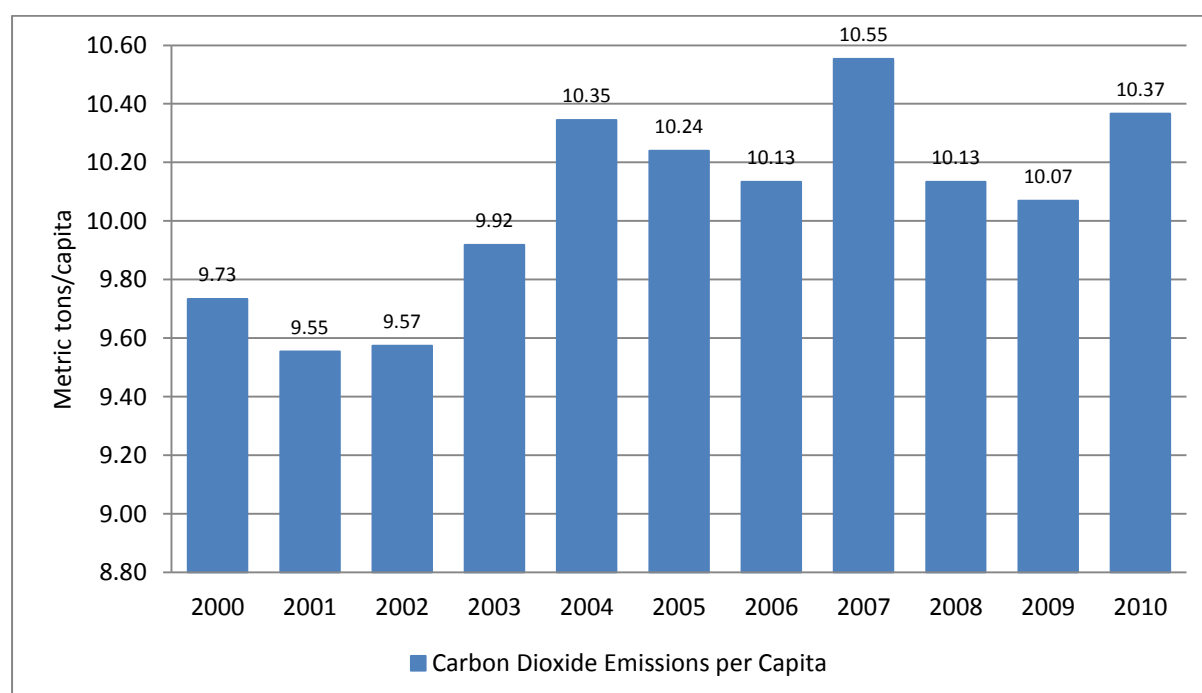
Source: Department of Environmental Affairs, 2014a

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[42] It should be noted that the calculation methodology used to calculate the 1994–1999 values for carbon emissions and that used for the 2000–2010 inventory differ. Therefore, the trend analysis for this report focuses on the period 2000–2010.

MDG indicator 7.2.3: Carbon dioxide emissions (per $1 GDP (PPP))

Table 8: MDG indicator 7.2.3 – Carbon dioxide emissions (per $1 GDP (PPP))

INDICATOR	DEFINITION	TARGET
MDG 7.2.3: Carbon dioxide emissions: Per $1 GDP (PPP)	Total carbon dioxide emissions divided by the total value of the gross domestic product (GDP) expressed in purchasing power parities (PPPs)	34% reduction from 'business as usual' by 2020

The estimates of carbon dioxide per $1 GDP (PPP) between 2000 and 2010 are presented in Figure 3. The intensity of carbon dioxide emissions per $1 GDP (PPP) has generally decreased between 2000 and 2010, despite marginal increases from the preceding year in some years (e.g. in 2003, 2004, 2009, 2010). During the period where data is available (2000–2010) per $1 GDP (PPP), carbon dioxide emissions decreased by 13.5%. The per $1 GDP (PPP) emissions decreased by a relatively larger margin in the period 2005–2010 (decreased by 7.7%) compared to the period 2001–2005 (decreased by 6.4%). The overall macro-economic performance of the South African economy (e.g. as measured by GDP growth) outpaced increases in emissions from production. The declining trend in carbon dioxide emissions per $1 GDP (PPP), particularly in the late 2010s could also be attributed to increased efforts in implementing measures that address environmental impacts of macro-economic transformation and growth initiatives. The resultant decline in the per $1 GDP (PPP) values is a combination of the above, but more especially can be ascribed to the decline in economic performance for the period 2000–2010 for the country. However, it is important to note that various factors (e.g. macro-economic performance factors) contribute to the observed trends and should not be solely seen as a result of implementation of environmental regulations and policies.

Figure 3: MDG indicator 7.2.3 – Carbon dioxide emissions (per $ GDP (PPP)), 2000–2010[43]

Source: Department of Environmental Affairs, 2014a

Overall, the South African government has increased efforts to address climate change – which is viewed as a threat to sustainable development in the country. Various efforts have been

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[43] It should be noted that the calculation methodology used to calculate the 1994–1999 values for carbon emissions and that used for the 2000–2010 inventory differ. Therefore, the trend analysis for this report focuses on the period 2000–2010.
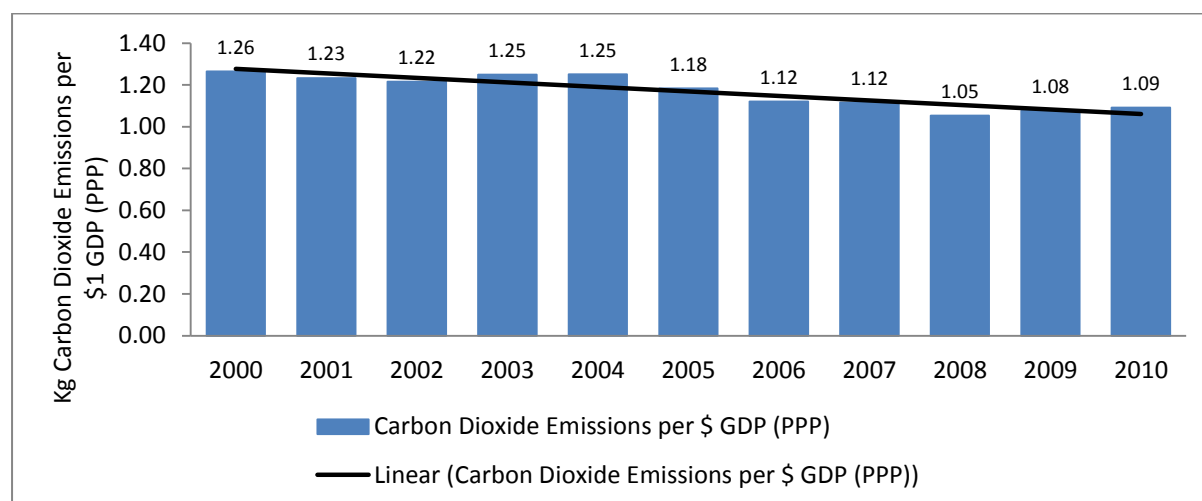
implemented, particularly in recent years, to address reduction in greenhouse gas emissions, such as carbon dioxide, and achieve the target of reducing carbon dioxide emissions by 34% below the 'business as usual' scenario by 2020. The South African 'Business as Usual' (BAU) estimate of future emission trends is based on the 'Growth without Constraints' (GWC) scenario contained in the Long Term Emission Scenarios (LTMS) (see DEA 2011d in the reference list 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 BAU baseline by around 34% by 2020 and by 42% by 2025.' The 2020 target of 34% below BAU was made conditional to the support (financial, technology transfer and capacity building) that should be provided to South Africa by the developed countries. In the period under review, such support has not matched this ambitious commitment that was made by the government of South Africa. Despite the unlikelihood of achieving the 2020 target, the country is implementing economy-wide programmes that will lead to significant reductions of GHG emissions for the period 2015-2020. Such actions include the implementation of existing policies together with the implementation of relevant projects and programmes.

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). 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, 'recognise 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). Other national policy documents and plans (e.g. NDP, Vision 2030, NGP, NSSD), emphasise 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 is 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: the Solar Water Heating Programme, the Energy Efficiency and Demand Management Programme, and the Green Fund, as well as South Africa's initiative to host the COP 17 international conference in 2011.

Despite having designed and being in the process of designing various regulations and policies, the challenges are ensuring that they are implemented to realise the expected reductions in carbon dioxide emissions. Further, it is critical for the South African economy to outgrow the current macro-

economic and other challenges to register production growth rates and the low carbon economy envisaged in the National Development Plan Vision 2030.

MDG 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.

MDG indicator 7.3: Consumption of ozone-depleting substances – HCFCs; BCM and MeBR

Table 9: MDG indicator 7.3.1 – Consumption of ozone-depleting substances (ODSs) – HCFC[44]

INDICATOR	DEFINITION	TARGET
Indicator 7.3.1: Consumption of ozone-depleting substances: HCFC	This indicator is used to monitor the reduction in the usage of ozone-depleting substances (ODSs) in accordance with 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 ODSs 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 by 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). An ozone-depleting substance (ODS) is any substance containing chlorine or bromine (or halogenated substances), which destroys the stratospheric ozone layer that absorbs most of the biologically damaging ultraviolet radiation. The phasing out of ozone-depleting substances, 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 would not fall under the control of the Protocol. Ozone-depleting potential (ODP) refers to the amount of ozone depletion caused by a substance. It is the ratio of the impact on the 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. For a full list of the controlled substances as well as the control measures applicable to each group of substance, refer to the Protocol	HCFCs reduce by 10% of baseline value (369.7 ODP metric tonnes) by 2015 and phase out by 2040

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[44] Data reported is based on actual consumption and no longer recommended figures, as was reported in the 2013 report.

INDICATOR	DEFINITION	TARGET
	text, which is available on the Ozone Secretariat's websites at: http://ozone.unep.org/; http://www.unep.ch/ozone; http://www.unep.org/ozone	

The consumption of hydrochlorofluorocarbons (HCFCs) is presented in Figure 4. The target is to reduce consumption of HCFCs by 10% of the baseline value (369.7 ODP metric tonnes) by 2015 and phase out by 2040. Overall, the results show fluctuating rates of reduction in the consumption of HCFCs between 2006 and 2013, ranging between 6.76% and 43.41%. However, there was an unusual increase in HCFCs consumption above the baseline value of 369.7 ODP metric tonnes by 8.22% in 2010. Between 2011 and 2013, the consumption of HCFCs has been reduced by an average of 18.16% of the baseline value, which is higher than the 10% target. Despite this observation, the rates of reduction of the consumption of HCFCs post-2010 are relatively less than the reductions achieved in 2006 (39.76%) and 2008 (43.41%).

South Africa stopped using ozone-depleting chlorofluorocarbon (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). South Africa acceded to the Vienna Convention for the Protection of the Ozone Layer and the Montreal 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, 2013; 2010). In addition, the Department of Environmental Affairs has measures in place to phase out consumption of ODSs. For example, to regulate consumption of HCFCs, the DEA is implementing the HCFCs Phase-out Management Plan (DEA, 2012). Implementation and enforcement of programmes in line with these international commitments are expected to help the country to phase out the consumption of HCFCs by 2040.

Figure 4: MDG indicator 7.3.1 – Consumption of ozone-depleting substances – HCFC
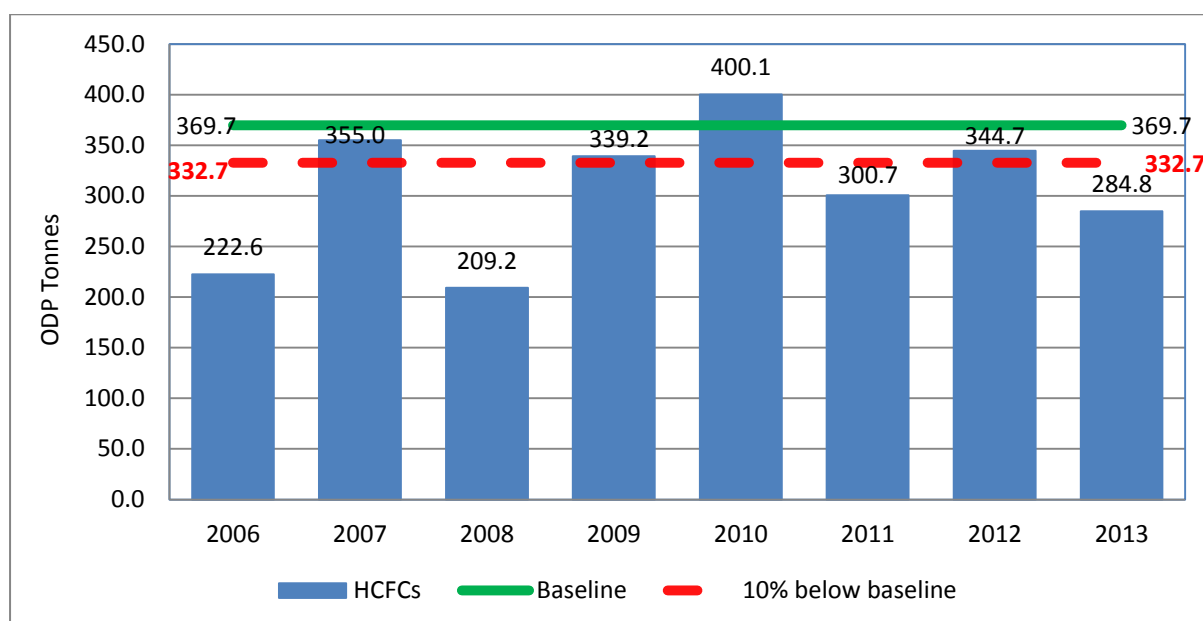
Source: Department of Environmental Affairs, 2014

Table 10: MDG indicator 7.3.2 – Consumption of ozone-depleting substances (ODSs) – BCM[45]

INDICATOR	DEFINITION	TARGET
Indicator 7.3.2: Consumption of ozone-depleting substances: BCM	Same as Indicator 7.3.1	100% reduction by 2002 (with possible essential use exemptions)

The data for South Africa between 2006 and 2013 indicates that the country has since achieved 100% reduction in bromochloromethane (BCM) consumption. South Africa has since phased out consumption of BCM, and the data provided from 2006 to 2013 shows values of zero for all the years. This could be attributed to efforts driven by the country, having ratified commitments focused on phasing out the consumption of ODSs as well as the implementation and enforcement of measures to phase out consumption of ODSs such as BCM.

Table 11: MDG indicator 7.3.3 – Consumption of ozone-depleting substances (ODSs) – MeBr[46]

INDICATOR	DEFINITION	TARGET
Indicator 7.3.3: Consumption of ozone-depleting substances: MeBr	Same as Indicator 7.3.1	Phase out by 2015

Figure 5 shows the consumption of methyl bromide (MeBr) between 2006 and 2013. The target for this indicator is to phase out consumption of MeBr by 2015 in South Africa. The results indicate that after a sharp increase in the consumption of MeBr from 221.4 ODP metric tonnes in 2007 to 568.8

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[45] Data reported is based on actual consumption and no longer recommended figures, as was reported in 2013.
[46] Data reported is based on actual consumption and no longer recommended figures, as was reported in 2013 .

ODP metric tonnes in 2008, MeBr consumption has substantially declined to a low of 140.5 ODP metric tonnes. Specifically, consumption of MeBr reduced from 5.62% of the baseline value (602.7 ODS metric tonnes) in 2008 to 76.69% of the baseline value in 2013. The trends indicate that South Africa is likely to have achieved the phasing out of MeBr by 2015; however, data would be required to ascertain this argument.

To regulate the consumption of MeBr, the DAFF implemented the Methyl Bromide Management Plan, and industry has to apply to the regulating authorities for the issuing of import and export permits. Overall, South Africa has managed to reduce consumption of ODSs by reducing imports of ODP-associated substances, and has almost completely phased out the use of ODSs such as aerosol spray-can propellants. Consumption of ODSs such as HCFCs, halons and other chemicals causes the thinning of the stratospheric ozone layer. This contributes to global warming, and the consumption of ODSs is a major global environmental concern. Generally, ratification of international commitments to reduce ODSs and implementation and enforcement of measures to achieve these targets have mainly contributed to achievements in reducing and phasing out the consumption of ODSs in the country.

Figure 5: MDG indicator 7.3.3 – Consumption of ozone-depleting substances – MeBr
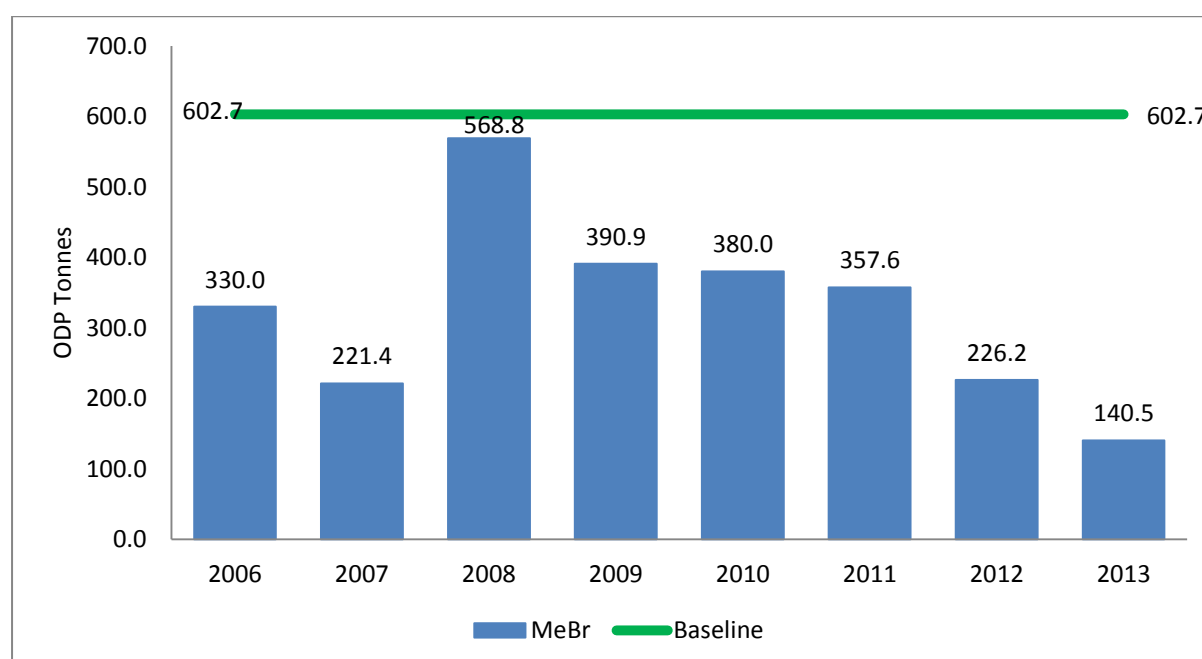
Source: Department of Environmental Affairs, 2014

INDICATOR 7.3: LESSONS LEARNT AND POST-2015 AGENDA
South Africa has made substantial progress in reducing consumption of ODSs. Implementing and enforcing measures aimed at reducing consumption of ODSs has been crucial in the observed progress in reduction of ODSs towards set targets. The post-2015 agenda on ODSs should focus on ensuring the complete phasing out of remaining ODSs (HCFC) and MeBr through swift implementation of the HCFC Phase-out Management Plan and Methyl Bromide Management Plan.

MDG indicator 7.4 – Proportion of fish stocks within safe biological limits

The South African government has made substantial progress in collecting data on the total catches and stocks of the different fish species between 1990 and 2012. These indicators are good measures for monitoring and evaluation, but not sufficient to track progress on the proportion of fish stocks within safe biological limits. This implies that the data available does not comply with the international methodology of the MDG indicator, and it is therefore not reported.

Table 12: MDG indicator 7.4 – Proportion of fish stocks within safe biological limits[47]

INDICATOR	DEFINITION	TARGET
MDG 7.4: Proportion of fish stocks within safe biological limits	Proportion of fish stocks within safe biological limits means the percentage of fish a stock, of which abundance is at or above the level that produces the maximum sustainable yield.	Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources

MDG Indicator 7.5: Proportion of total water resources used

This indicator requires a significant study in order to conduct an up to date country-wide appraisal of the proportion of total water resources used. According to the DWS (2015), the relevance of this indicator to South Africa is limited given the semi-arid nature of the country, the degree of water scarcity, the degree of water use (close to 100% of the water resources are used). There is an urgent need to conduct an extensive water resources use investigation for planning purposes. Since there is no data collected for this indicator, it is not reported for the 2015 closeout period.

Table 13: MDG indicator 7.5 – Proportion of total water resources used [48]

INDICATOR	DEFINITION	TARGET
MDG 7.5: Proportion of total water resources used	Proportion of total renewable water resources withdrawn is the total volume of groundwater and surface water withdrawn from their sources for human use (in the agricultural, municipal and industrial sectors), expressed as a percentage of the total actual renewable water resources. The terms water resources and water withdrawal are understood as freshwater resources and freshwater withdrawal	Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources

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

Target 7B covers the following MDG indicators: MDG 7.6: Have 17% of terrestrial and 10% of marine areas protected by 2020 and MDG 7.7: Restore, maintain or reduce the decline of the proportion of species threatened with extinction by 2010 and prevent further decline by 2020.

Table 14: MDG indicator 7.6 – Proportion of terrestrial and marine areas protected

INDICATOR	DEFINITION	TARGET
MDG 7.6.1: Proportion of area	The unit of measure in this indicator is terrestrial protected areas. The International Union for Conservation of Nature (IUCN) defines a	By 2020, at least 17% of terrestrial and inland

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[47] The indicator is not analysed due to data that does not comply with the MDG methodology.
[48] The indicator is not analysed due to non-availability of data, mainly due to resource constraints to conduct the required surveys.

INDICATOR	DEFINITION	TARGET
protected (as a percentage of total): Terrestrial	protected area as 'a clearly defined geographical space, recognised, 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). The system of protected areas in South Africa is recognised in terms of the National Environmental Management Protected Areas Act (Act No. 57 of 2003), the Mountain Catchment Areas Act, 1970 (Act No. 63 of 1970), the World Heritage Convention Act, 1999 (Act No. 49 of 1999), and the National Forests Act, 1998 (Act No. 84 of 1998). It provides for the protection and conservation of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes and seascapes. This indicator is calculated using all the declared protected areas, i.e. national parks, provincial, local and private nature reserves, special nature reserves, mountain catchments, world heritage sites, protected environment, forest nature reserves, and forest wilderness areas	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
MDG 7.6.2: Proportion of area protected (as a percentage of total): Marine	The unit of measure in this indicator is marine protected areas in territorial waters (up to 12 nautical miles from the coast) and Marion Island and Prince Edward Island. 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). The system of marine protected areas in South Africa is recognised in terms of the National Environmental Management Protected Areas Act (Act No. 57 of 2003) and the Marine Living Resources Act, (Act No. 18 of 1998). It provides for the protection and conservation of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes and seascapes. This indicator is calculated using data on all the declared marine protected areas	By 2020, at least 10% 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

The indicator of the proportion of protected terrestrial[49] and marine areas measures formal protection of components of biodiversity. The proportions of total protected areas (both terrestrial and marine) for the years 1994, 2010, 2012 and 2014 are presented in Figure 6. The results show that both terrestrial and marine protected areas increased from 1994 to 2014. The terrestrial protected area increased by 51.54% between 1994 and 2014. Much of the increase in terrestrial protected area occurred between 2010 and 2014 (26.61%), compared to the 19.69% increase between 1994 and 2010. This observed trend could be attributed to increased efforts in implementing and enforcing environmental regulations aimed at protecting terrestrial areas, for example the National Environmental Management Protected Areas Act (Act No. 57 of 2003), the Mountain Catchment Areas Act, 1970 (Act No. 63 of 1970), the National Protection Expansion Area Strategy (NPEAS), the World Heritage Convention Act, 1999 (Act No. 49 of 1999), and the National Forests Act, 1998 (Act No. 84 of 1998).

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[49] 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'.

Given the target to achieve 17% of terrestrial protected areas by 2020, and using the latest data for 2014, achieving the target would require the 2014 value (7.85) to increase by 9.15 (a 116.56% increase) by 2020, which is unlikely to be achieved. However, the target on this indicator indicates that 'terrestrial areas 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.' Therefore, this target does not include terrestrial protected areas only, but also makes provision for conservation areas. The terrestrial areas as per the data in the report occupy 7.85%, and the conservation areas reported on in the report occupy a further 3.98%. Furthermore, the Department of Environmental Affairs is conducting more audits on other types of conservancies such as private protected areas. Based on these developments and qualifications of the indicator, the target of 17% is likely to be achieved.

The data for marine protected areas shows zero value for 1994[50] and for the analysis the focus is on the periods 2010, 2012 and 2014. From 2010 to 2014, the proportion of marine protected areas increased by 14.98%, and most of this increase occurred between 2010 and 2012 (12.23%). Efforts to increase marine protected areas in South Africa are driven by the implementation of regulations in the National Environmental Management Protected Areas Act (Act No. 57 of 2003) and the Marine Living Resources Act, (Act No. 18 of 1998). Based on data reported on this indicator, to achieve the target of having 10% marine protected areas by 2020, current efforts would need to increase to ensure the latest value (7.52 in 2014) increase by 32.98%. The South African government, through Operation Phakisa (http://www.operationphakisa.gov.za/Pages/Home.aspx), has launched an initiative to unlock the economic potential of South Africa's oceans; as part of this initiative the protected marine environment will also be expanded. In addition, South Africa has added the large Marion Island and Prince Edward Island to its protected areas, but the islands are not included in the calculations due to their large size (to avoid distortions in the results as per stipulated methodology).

Figure 6: MDG indicator 7.6 – Proportion of total protected area (terrestrial and marine)
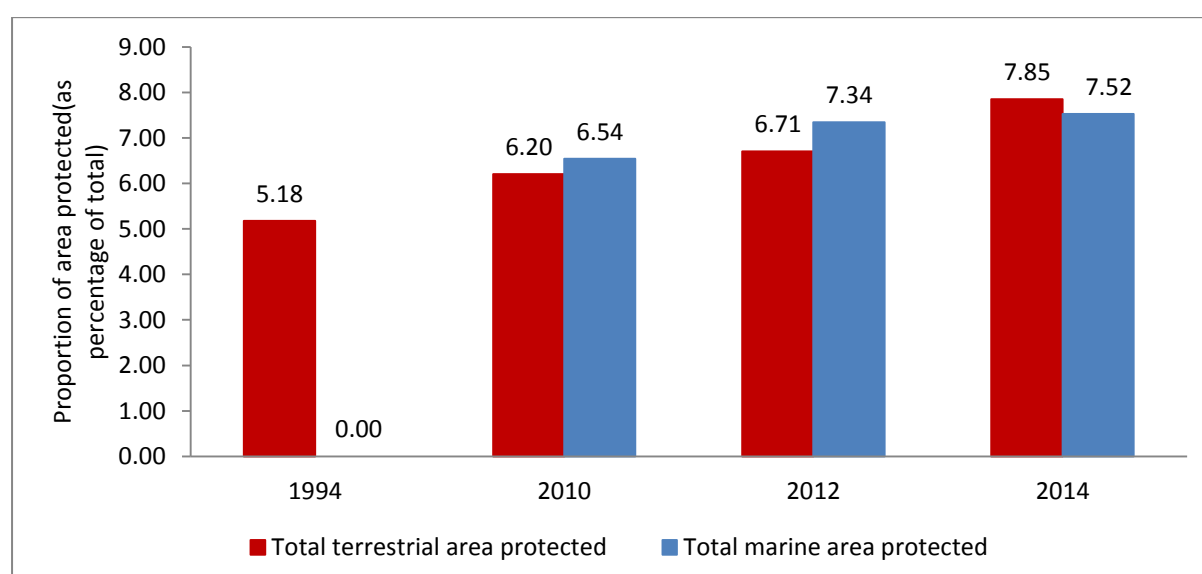
Source: Department of Environmental Affairs, 2014b

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[50] The first MPA was declared in December 2000.

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; the National Environmental Management: Protected Areas Act; the 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).

MDG 7.6: LESSONS LEARNT AND POST-2015 AGENDA
The high rates of increase in proportions of protected terrestrial and marine areas post-2010 indicate an increase in the implementation and enforcement of measures to protect these areas. Current assessment/or measurement programmes are important for achievement of the targets for both terrestrial and marine protected areas. Stepping up current and future efforts to protect terrestrial and marine areas is critical for achievement of targets for these indicators.

Table 15: MDG indicator 7.7 – Proportion of species threatened with extinction

INDICATOR	DEFINITION	TARGET
MDG 7.7: Proportion of species threatened with extinction	Conservation assessments or Red Lists assess the likelihood of a species becoming extinct in the wild, based on a series of objective criteria set out by the IUCN. The number of taxa that qualify in each of the broad categories when assessed using the IUCN Red Cist criteria, are disaggregated by the broad taxonomic group into which they fell. Taxa are species, or some smaller taxonomic unit to which the criteria were applied. The broad taxonomic groups into which species are divided are plants, mammals, reptiles, amphibians, birds, fish and butterflies. Species are the building blocks of ecosystems, playing a fundamental role in maintaining well-functioning ecosystems and thus in supporting the provision of ecosystem services	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

The proportion of species threatened by extinction is presented in Figure 7 and Table 16.

The results, based on the 2011 National Biodiversity Assessment, show that most species threatened with extinction are freshwater fish (21%) and inland mammals (20%). The other species with proportions of threatened species above 10% include plants and amphibians (both at 14%) and birds (11%). The least threatened species is the butterfly species (7%). Overall, the results of Red List assessments for South Africa to date (in Figure 7 and Table 16) show that (Driver et al., 2012):

• One in every five inland mammal species is threatened.
• One in every five freshwater fish species is threatened.
• One in every seven frog species is threatened.
• One in every seven bird species is threatened.
• One in every eight plant species is threatened.
• One in every twelve reptile species is threatened.
• One in every twelve butterfly species is threatened.

Figure 7: MDG indicator 7.7 – Proportion of species threatened with extinction, 2011
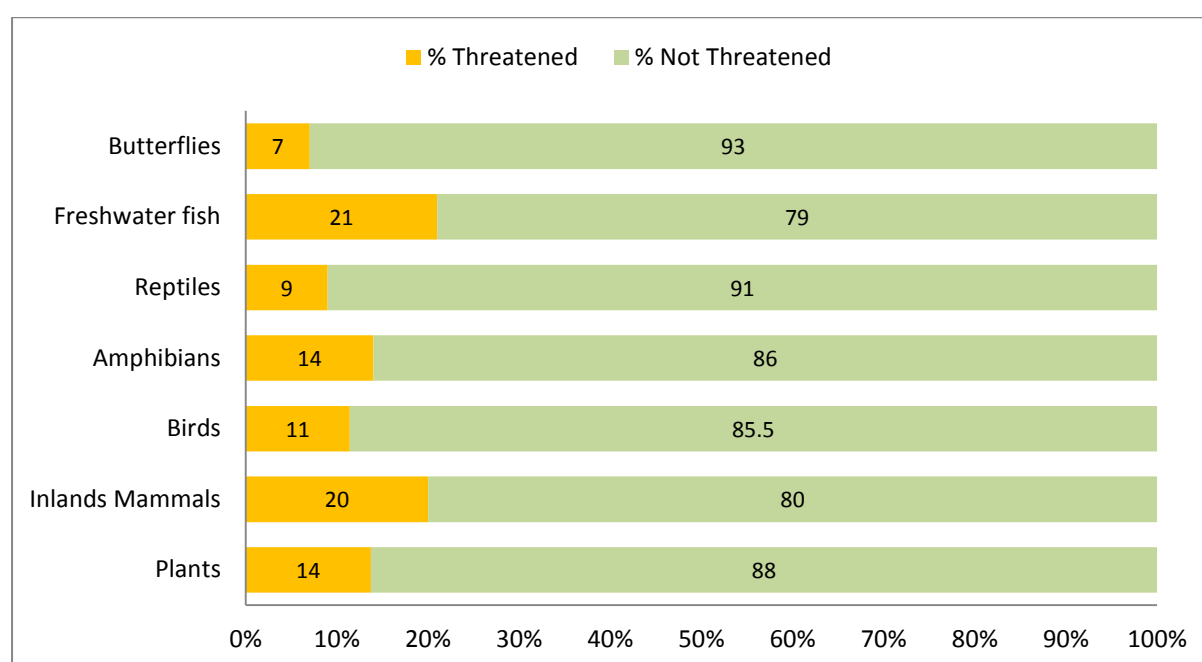
Source: Driver et al., 2012

Table 16: 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	% endemic to SA	% of earth's taxa	Most recent Red List
Plants	20 692	2 896	14%	40	14 252	69%	6%	2014
Inland mammals	307	60	20%	3	57	19%	6%	2004
Birds	845	91	11%	2	68	8%	8%	2013
Amphibians	118	17	14%	0	51	43%	2%	2010
Reptiles	421	36	9%	2	196	47%	5%	2011
Freshwater fish	114	24	21%	0	58	51%	1%	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 maybe a subspecies or variety.

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.[51] According to Driver et al. (2012), South Africa is a

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[51] 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.

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.

Red Lists also provide information on factors that contribute to the 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).

MDG 7.7: LESSONS LEARNT AND 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. Conservation activities need to be set up around agricultural areas, and land-use changes in both protected and unprotected areas need to be controlled.

Access to basic water supply and sanitation

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

Target 7C covers the following MDG indicators: Indicator 7.8: Proportion of population using an improved drinking water source (%), and Indicator 7.9: Proportion of population using an improved sanitation facility (%).

MDG 7.8: Access to improved drinking water

Table 17: MDG indicator 7.8 – Proportion of population with improved drinking water source

INDICATOR	DEFINITION	TARGET
MDG 7.8: Proportion of population using an improved drinking water source	The proportion of the population using an improved drinking water source[52], 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). It 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 (WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation at www.wssinfo.org) – this definition does not address the South African standard of access within 200 meters of a household.	Halve, by 2015, the proportion of people without sustainable access to safe drinking water

Figure 8Figure 8 presents data on the proportion of households using an improved drinking water source, which data was obtained from the GHS from 2002 to 2013 and census data for 1996, 2001 and 2011. The census data with 1996 as the base year is used to determine the baseline for the MDG 7.8 target. According to the census data for 1996, 2001 and 2011, the proportion of the South

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[52] The protected well/spring as well as rainwater collection is not included as a safe source as the protected nature of the source is not established by questionnaires.

African population with access to improved drinking water sources was 76.6%, 84.4% and 90.8%, respectively (Stats SA, 2011). Using the 1996 baseline of 76.6% gives a water backlog of 23.4%, which needed to be halved by 2015 in order to meet the MDG target. This led to a target of 88.3% by 2015. Using the GHS data, the MDG target was met in 2005, with 89.1% of the population having access to improved water sources, supported by the 2011 census data, where the target has been exceeded, with 90.8% of the population now having access to improved water resources.

Figure 8: MDG indicator 7.8 – Proportion of population using an improved drinking water source (national)
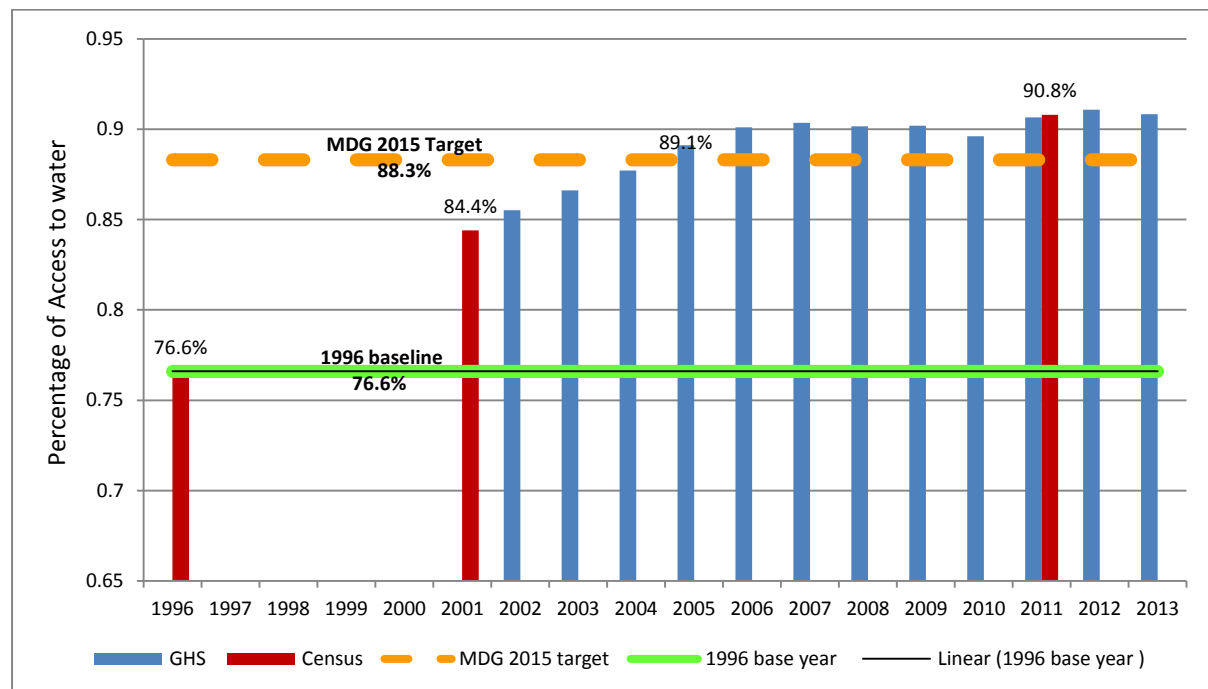
Source: Constructed from the General Household Survey dataset, 2002–2013 (Stats SA, 2015) and census data (Stats SA 2013)

The proportion of households with improved water sources at provincial level is shown in

Figure 9Figure 9. Using the GHS data it confirms that all the provinces have reached their individual goal of halving their backlogs by 50% to contribute to the country's MDG target of 88.3% MDG being met. According to the DWS (2015), the five top performing provinces, namely Western Cape, Gauteng, Free State, North West and Northern Cape, are clustered above 95% access. However, in context of the high level of improved water access at national level, GHS data shows that provinces like Eastern Cape, KwaZulu-Natal and Limpopo are still accelerating to reach above average level of access. Although the MDGs have been achieved, we still have major challenges in the provinces. For Eastern Cape, 75.8% of households had access to improved drinking water sources by 2013, implying a backlog of 24%, while KwaZulu-Natal and Limpopo both posed a backlog of 15% for 2013. What is worth noting is that for some provinces the proportion of households with improved access has been declining over time. The main reasons are the challenges to address migration and population growth (managing a moving target) and in others, infrastructure is failing due to inadequate focus on operation and maintenance infrastructure.

Nevertheless, a province like Eastern Cape has shown significant improvement in access to safe drinking water sources from a low base of 53% in 2002 (e.g. backlog of 47.4%) to 76% in 2013, implying an achievement of the target of halving the backlog to 23.7%. Further, the GHS data also shows disparities in terms of access to improved water sources among the nine provinces. The relatively developed provinces like Western Cape, Gauteng, Northern Cape and Free State had higher proportions (over 98%) of their population with access to improved water sources, than the national indicator of 90.88% in 2013. The disparities in access among provinces can be attributed to the level of infrastructure development and maintenance as well as the population and migration dynamics in the respective provinces.

Although the South African government has reached its target of eradicating the historical backlog in water services 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. The challenge regarding the availability and maintenance of infrastructure applies to all the other basic services (Presidency, 2012). The lesson learnt is that, as government approaches the threshold of over 90% access to these services, twice the amount of effort and resources are required for an additional 1% improvement in access. Therefore, greater resource mobilisation is required to eradicate the remaining backlog through improved infrastructure management and programme governance, and achieve a 100% access for all South Africans.

As noted by UNESCO (2015), water issues have risen in prominence in recent years, reflecting a growing understanding of the importance of water, which contributed to the world's success in achieving the MDG 7 target of halving the proportion of people without sustainable access to safe drinking water in 2010 (WHO and UNICEF, 2012; UNESCO, 2015). This was evidenced by 2.1 billion people gaining access to an improved water source between 1990 and 2010. However, while globally the MDG target on water has been achieved, the issue of monitoring drinking water safety still comes to the fore as there are no mechanisms to ensure improved access to safe drinking water for all. Further, while the world achieved the water MDG target, 45 countries were still not on track to meet the target by 2015, and 44% of those countries are from Africa. This was partly due to a low

baseline in 1990 for most of those countries, with a high population growth exacerbating the challenges of meeting the water target. Nevertheless, the UNECA (2014) acknowledges that on average, these countries had to increase drinking water coverage by 26%, which for some meant doubling their 1990 coverage levels (WHO and UNICEF, 2014).

Figure 9: MDG indicator 7.8 – Proportion of population using an improved drinking water source (provincial)

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
National	85.5	86.6	87.7	89.1	90.1	90.4	90.2	90.2	89.6	90.7	91.1	90.8
Western Cape	99.1	99.2	99.4	99.6	99.7	99.7	99.6	99.7	98.9	99.7	99.1	99.2
Eastern Cape	52.6	55.2	59.1	64.2	66.4	70.3	67.1	69.7	67.5	70.4	72.8	75.8
Northern Cape	97.4	97.5	97.2	97.6	97.9	97.7	96.9	98.3	97.7	98.1	98.8	98.8
Free State	97.5	98.7	98.2	99.2	99.4	99.2	98.9	98.5	99.2	99.3	99.1	98.9
KwaZulu-Natal	76.1	77.4	79.8	81.6	82.5	82.5	83.1	83.0	81.5	83.1	84.9	85.3
North West	96.5	95.8	96.9	97.3	95.9	96.2	97.5	96.8	96.6	97.3	96.9	94.9
Gauteng	99.6	99.4	99.6	98.8	99.4	99.2	99.1	99.0	98.2	99.5	99.3	98.3
Mphumalanga	92.7	91.5	90.1	92.1	90.5	91.5	93.0	91.9	89.9	92.0	89.9	90.4
Limpopo	82.0	86.8	86.9	88.8	93.9	90.6	89.9	88.0	91.4	88.6	89.0	85.2

Source: Constructed from the General Household Survey dataset, 2002–2013 (Stats SA, 2015)

MDG 7.8: LESSONS LEARNT AND POST-2015 AGENDA

South Africa has achieved the target of halving the proportion of the population without water access by 2005. This includes all provinces contributing to the country target of 88.3%. The unpacking of the water stability indicator has highlighted the need to address the big picture of water services, where life-cycle costing of water services comes into play. Going beyond 2015, South Africa has embraced the reliability indicator into its processes (MTSF 2014–19) by setting a target of 90% access to reliable and sustainable water services and focusing on improving this indicator in the 27 district municipalities (i.e. rural areas). The post-2015 agenda should focus on providing water services, which embraces sustainability into the definition of water services. There is also a need to ensure consistency in the provision of water services by adopting a common understanding and interpretation of the definition of access to basic services by the various provincial authorities, including functional infrastructure for reliable access to water services in the country. Access to infrastructure does not imply access to water services, unless the infrastructures are functional.

According to UNESCO (2015), lessons from the MDGs show that a thematically broader, more detailed and context-specific framework for water, beyond the issues of water supply and sanitation, is called for in the post-2015 development agenda. In 2014, UN-Water recommended a dedicated Sustainable Development Goal for Water comprising five target areas: (i) Water and sanitation and hygiene (WASH); (ii) water resources; (iii)

water governance; (iv) water quality and wastewater management; and (v) water-related disasters. Such a focused water goal would create social, economic, financial and other benefits that greatly outweigh its costs. Benefits would extend to the development of health, education, agriculture and food production, energy, industry and other social and economic activities. UNESCO (2015) acknowledges that the publication of the *World Water Development Report 2015*, 'Water for a Sustainable World', comes as member states strive to build on the gains made under the MDG framework, articulate an inspiring post-2015 development agenda and reach an ambitious agreement on climate change. Further, the global water demand is projected to increase by 55%, mainly due to growing demands from manufacturing, thermal electricity generation and domestic use (UNESCO, 2015).

MDG 7.9: Access to improved sanitation

Table 18: MDG indicator 7.9 – Proportion of population using an improved sanitation facility

INDICATOR	DEFINITION	TARGET
MDG 7.9: Proportion of population using an improved sanitation facility	The proportion of the population using an improved sanitation facility, total, urban, 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 a sewer, septic tank, or pit latrine, ventilated improved pit latrines, pit latrines with a slab or platform of any material that 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 in water bodies or in the open and the practice of open defecation in the bush, field or bodies or water. Definitions and a detailed description of these facilities can be found at the website of the WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation at www.wssinfo.org	Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation

Figure 10 presents GHS data on the proportion of households with improved sanitation facilities for South Africa. The census data[53] shows that the sanitation backlog was 50.7% in 1996, 46.4% in 2001 and 33.5% in 2011, respectively. Using 1996 as the base year, halving the backlog of 50.7% by 2015 requires a backlog of 25.3% or improved access for 74.7% of the population. Using the GHS data for 2012 where 75.2% of the population had access to improved sanitation facilities, the figure shows that South Africa achieved the sanitation target of 74.7% by 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). This is an indication of the government's commitment to accelerate service delivery by putting targets higher than the MDG targets. Achieving a proportion of 75.2% by 2012 confirms that commitment.

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[53] To calculate the sanitation MDG targets for 2015, the census data (not GHS) was used to correspond with the 1996 base year.

Figure 10: MDG indicator 7.9 – Proportion of population using an improved sanitation facility (national)
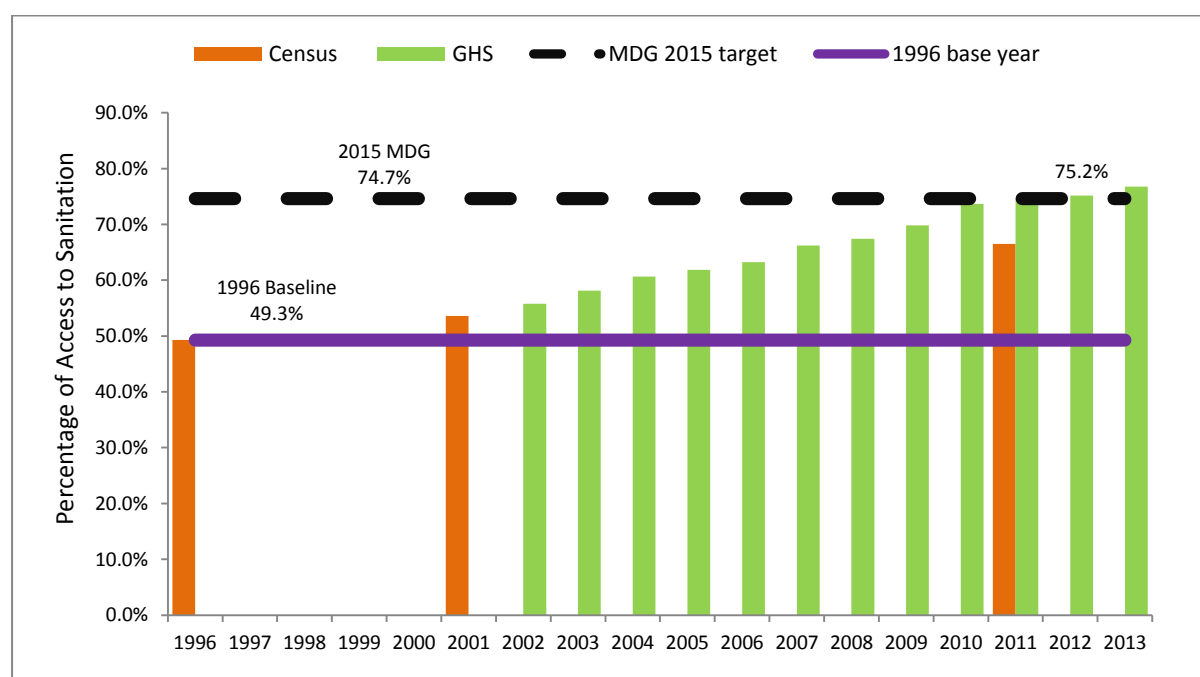
Source: Constructed from General Household Survey dataset, 2002-2013 (Stats SA, 2015) and census data (Stats SA 2013)

Globally, the world is not on track to meet the MDG sanitation target of halving the proportion of the global population without access to improved sanitation facilities by 2015 (WHO and UNICEF 2012; WHO and UNICEF 2014). This is because, despite the fact that 1.9 billion people gained access since 1990, there were 2.5 billion people who did not have access to improved sanitation facilities, by the end of 2012. Out of the 69 countries that were not on track to achieve the sanitation target in 2012, 52% of them were in Africa. Therefore, the UN acknowledges that, given the progress to date, there will be a gap globally in the MDG sanitation target by over half a billion people (WHO and UNICEF, 2014; UNECA, 2015).

While the national picture shows progress towards achieving the sanitation target, provincial indicators show disparities in terms of access to sanitation among the South African provinces Figure 11). However, the data confirms that each province has fulfilled its role in meeting their own MDG 7.9 target of halving 50% of its sanitation 1996 backlog, collectively contributing to the country's achievement of the MDG 2015 target of 74.7%. The provinces where the metros are located are the centres of growth, together with the mining towns, which leads to in-and-out migration that in turn results in informal settlements and the need to provide basic services for such.

Figure 11: MDG indicator 7.9 – Proportion of population using an improved sanitation facility (provincial)

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
National	55.8	58.1	60.6	61.9	63.3	66.2	67.4	69.8	73.7	74.6	75.2	76.8
Western Cape	91.4	89.5	93.1	93.9	95.6	96.4	94.5	94.8	96.7	96.5	96.3	95.7
Eastern Cape	28.9	30.2	35.5	43.9	45.5	49.5	54.1	56.8	63.8	67.0	68.3	72.2
Northern Cape	77.5	73.9	77.1	78.9	76.2	81.1	76.3	83.1	82.2	86.1	84.7	84.9
Limpopo	23.2	21.9	31.7	29.8	28.7	30.6	30.5	38.6	38.9	42.4	48.0	48.0
Free State	58.0	61.3	64.7	68.1	70.6	73.7	75.8	78.6	82.9	84.2	83.9	84.9
KwaZulu-Natal	41.4	47.0	47.6	50.7	53.0	58.1	57.5	63.8	68.7	68.1	64.5	71.1
North West	50.4	57.2	53.7	51.5	50.3	58.5	57.9	65.0	67.1	64.4	71.6	71.3
Gauteng	88.0	88.8	89.8	88.1	88.8	88.1	92.6	89.5	92.9	93.1	92.5	91.5
Mphumalanga	42.8	48.6	47.2	44.5	49.5	54.0	52.2	48.8	54.6	57.4	60.3	60.6

Source: Constructed from the General Household Survey dataset, 2002-2013 (Stats SA, 2015)

MDG 7.9: LESSONS LEARNT AND POST-2015 AGENDA
South Africa in 2011 achieved the target of halving the backlog for access to an improved sanitation facility. Dealing with appropriate technologies that can serve as an acceptable temporary solution for informal settlements remains a challenge. The slow pace towards achieving the global target of improved sanitation has been acknowledged by the UN is urging countries to put in place drastic measures to address that going forward (WHO and UNICEF, 2012; WHO and UNICEF, 2014). The UN further acknowledges that given the progress to date, there will be a gap globally in the MDG sanitation target by over half a billion people (WHO and UNICEF, 2014, UNECA, 2015).

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

Target 7D covers MDG indicator 7.10 on the proportion of the urban population living in slums.

This indicator has been domesticated under DMI 13, which deals with the proportion of the population living in informal settlements with improved access to services.

Table 19: MDG indicator 7.10 – Proportion of urban population living in slums[54]

INDICATOR	DEFINITION	TARGET
MDG 7.10: Proportion of urban population living in slums	The proportion of the 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, and who are lacking one or more of the following conditions: 1. Durable housing of a permanent nature that protects against extreme climate conditions 2. Sufficient living space which means not more than three people sharing the same room 3. Easy access to safe water in sufficient amounts at an affordable price 4. Access to adequate sanitation in the form of a private or public toilet shared by a reasonable number of people 5. Security of tenure that prevents forced evictions	By 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers

In 2012, the UN MDG report showed a reduction in the share of urban populations living in slums from 39% in 2000 to 33% in 2012, with more than 200 million of these people gaining access to improved water sources, improved sanitation facilities, and more durable and/or less crowded housing. This was recorded as a significant improvement, leading to the MDG target being globally exceeded ahead of the 2020 deadline (UN, 2012). However, despite the achievement of the MDG target on the lives of slum dwellers, the absolute number of slum populations has continued to grow from 650 million people in 1990 and now estimated to reach nearly 900 million by 2020 (UNESCO, 2015).

According to UNESCO (2015), the increase in the number of people without access to basic services in urban areas is directly related to the rapid growth of slum populations in the developing world and the inability (or unwillingness) of local and national governments to provide adequate water and sanitation facilities in these communities. The increasing global population living in slums is also vulnerable to environmental impacts, such as extreme weather events.

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[54] Although this indicator was reported as an MDG indicator in 2013, the indicator has now been domesticated and it is reported as DMI to comply with the international methodologies, as South Africa does not have slums as per the UN definition, but refers to them as informal settlements. Therefore, this indicator is not reported on as an MDG for 2015.

7. PROGRESS IN ACHIEVING DOMESTICATED INDICATORS (DMIs)[55]

The DMIs analysed in this report are summarised in the table below, based on data available. Most of the DMIs do not have numerical targets in terms of achievements, but evaluation of progress made towards their achievement is based on the trends portrayed by the data for each indicator, where such indicator has data. Worth noting is also the fact that some of the DMIs (e.g. access to electricity) have been revised to align their targets with the NDP Vision 2030, which goes beyond the review period ending in 2015.

Table 20: Domesticated Indicators – Targets with MDG indicators (Reporting status and data availability)

MDG 7: Goal Targets and Indicators			
Indicator	**Target**	**Reported: Status**	**Not reported: Reason**
DMI 1: Proportion of natural habitat (Area in percentage)	By 2010 the rate of loss and degradation of natural habitats should be decreased		No data
DMI 2: Ecosystem threat status (Percentage at 2011)	By 2010 have at least five key industries actively avoiding threatened ecosystems in their production	Not Achieved	
	By 2013 threatened or protected ecosystems have been identified and listed, and the list has been updated at least once	Achieved	
DMI 3: Percentage of permitted landfill sites (Decrease in the number of unlicensed waste disposal sites)	Have 80% (272.8) of the 341 identified landfill sites licensed by 2015	Achieved	
DMI 4: Proportion of area protected (Conservation areas)	By 2020, have at least 17% of terrestrial and inland water areas are conserved	The target goes beyond 2015	
DMI 5: Proportion of land area covered by natural forests	Reduce biodiversity loss		No data[56]
DMI 6: Proportion of land area covered by savannah woodlands			
DMI 7: Proportion of land area covered by Albany thicket			
DMI 8: Proportion of land area covered by commercial plantations			
DMI 9: Proportion of households with access to electricity	By 2025 have 90% on grid and 10% on non-grid[57]	The target goes beyond 2015	
DMI 10: Proportion of population using solid fuels as primary source of energy: Cooking	No target	Not applicable	
DMI 11: Proportion of population using solid fuels as primary source of energy: Heating	No target	Not applicable	
DMI 12: Number of households in informal settlements upgraded with access to basic services and secure tenure	Have 400 000 households in informal settlements upgraded with access to basic services and secure tenure by 2014	Achieved	
DMI 13: Instability of water supply[58]	No target, but the aim is to set a target for the water related SDGs	Not applicable[59]	

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[55] 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.

[56] Survey done in 2005 – only one data point does not allow a conclusive decision on target.

[57] This target has been revised from the 92% recorded in the 2013 report to align with the National Development Plan (NDP) Vision 2013. The revised target is by 2025 to achieve 90% grid technology and 10% non-grid technology in line with the NDP.

[58] The water stability indicator is defined as the percentage of households that received water from a municipality but who, over the 12 months before the survey, reported interruptions that lasted more than 2 days or who have experienced water interruptions for more than 15 days during that time. Therefore, the data provided refers to instability, which needs to be reduced over time.

[59] DWA and Stats SA are in partnership to develop a monitoring and evaluation system to track this indicator. Its importance resides in post-2015.

7.1 REVIEW OF PROGRESS ON THE DOMESTICATED INDICATORS

Out of the thirteen DMIs, only one indicator (dealing with the permitted landfill sites) has been achieved; three have not been achieved, while the rest either lack data or do not have clear targets and time frames as shown in Table 21.

Table 21: Domesticated indicators and targets

Type of habitat/ Indicators	Nationally adopted goals & targets (date when adopted)	1994 baseline (or closest)	2010 Census	Current status 2015 (or nearest year)	2015 target	Other period target	Target achievability	Reporting status
DMI 1: Proportion of natural habitat (area in percentage)								
Urban	The target is that by 2010 the rate of loss and degradation of natural habitats should be decreased	0.85	1.98 (2005)	3.96 (2013)		By 2010 the rate of loss and degradation of natural habitats should be decreased	Not Achieved by 2015	Provided data not clear on target[60]
Forestry & plantations		1.16	1.62 (2005)	1.05 (2013)				
Mining and quarries		0.13	0.17 (2005)	0.17 (2013)				
Cultivation/ agriculture		12.43	11.92 (2005)	12.91 (2013)				
Natural		85.44	84.31 (2005)	81.91 (2013)				

Type of ecosystems	Nationally adopted goals & targets (date when adopted)	Status of threatened ecosystems: Percentage at 2011						
		Critically endangered (CR)	Endangered (EN)	Vulnerable (VU)	Least threatened (LT)	2015 target	Other period target	Target achievability	Reporting status
DMI 2: Ecosystem threat status (percentage at 2011)								
Terrestrial	The targets are to identify 5 key industries, identify a list of threatened or protected ecosystems	9	11	19	60		By 2010 have at least five key industries actively avoiding threatened ecosystems in their production	Not achieved by 2015	Provided data not clear on target [61]
River		26	19	13	43				

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[60] Target is not clear to determine what 'reduce' requires. Provided data by 2013 shows percentage of threatened species, but no clarity on target for each category of species.
[61] Target is not clear to determine what 'reduce' requires. Provided data by 2011 shows status of threatened ecosystems, but no indication of the five active industries.

Indicator(s)	Nationally adopted goals & targets (date when adopted)	1994 baseline (or closest)	2010	Current status 2015 (or nearest year)	2015 target	Other period target	Target achievability	Reporting status
Percentage of wetland	and to update the list at least once	48	12	5	35	By 2013 threatened or protected ecosystems have been identified and listed, and the list has been updated at least once	Achieved by 2011	
Estuarine		39	2	2	57			
Marine & coastal habitat		17	7	23	53			

DMI 3: Percentage of permitted landfill sites (decrease in number of unlicensed waste disposal sites)

Indicator(s)	Nationally adopted goals & targets (date when adopted)	1994 baseline (or closest)	2010	Current status 2015 (or nearest year)	2015 target	Other period target	Target achievability	Reporting status
DMI 3: 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	341 (2007)	80 (2012)	332 (2015)	Have 80% licensed by 2015 = 272.8		Achieved by 2015	This target is achieved using updated data[62]

DMI 4 – DMI 8: Proportion of land area covered

Indicators	Nationally adopted goals & targets (date when adopted)	1994 baseline (or closest)	2010	Current status 2015 (or nearest year)	2015 target	Other period target	Target achievability	Reporting status
DMI 4: Proportion of area protected (Conservation areas)	By 2020, at least 17% of terrestrial and inland water areas	No data	No data	3.98 (2014)		By 2020, have at least 17% of terrestrial and inland water areas are conserved	The target goes beyond 2015[63]	The target period goes beyond 2015
DMI 5: Proportion of land area covered by natural forests	Reduce biodiversity loss	No data	No data	0.4	No data		Not applicable	No data collected over time[64].
DMI 6: Proportion of land area covered by savannah woodlands	Reduce biodiversity loss	No data	No data	32.62	No data			
DMI 7: Proportion of land area covered by Albany thicket	Reduce biodiversity loss	No data	No data	2.37	No data			

[62] The data used in 2013 did not include provincial and municipal data on this indicator, but now the 2015 reporting period covers data at all levels, not only national.
[63] Data collected for the first time in 2014, giving only one data point.
[64] Survey done in 2005 – only one data point does not allow a conclusive decision on target.

Indicators	Nationally adopted goals & targets (date when adopted)	1994 baseline (or closest)	2010	Current status 2015 (or nearest year)	2015 target	Other period target	Target achievability	Reporting status
DMI 8: Proportion of land area covered by commercial plantations	Reduce biodiversity loss	No data	No data	1.04 (2006)	1.03 (2012)		Not applicable	
DMI 9 – DMI 11: Proportion of households with access to electricity								
DMI 9: Proportion of households with access to electricity	In line with the National Development Plan[65] (NDP) the target is to reach universal access by 2025 in which 90% will be grid technologies and 10% will be non-grid technologies	77.1 (2002)	82.9	85.4 (2013)	No target	By 2025 have 90% on grid and 10% on non-grid[66]	The target goes beyond 2015	The target period goes beyond 2015
DMI 10: Proportion of population using solid fuels as primary source of energy: Cooking	No target	22.6 (2002)	15.2	11.0 (2013)	No target		Not applicable	No target
DMI 11: Proportion of population using solid fuels as primary source of energy: Heating	No target	28.9 (2002)	22.1	13.9 (2011)	No target		Not applicable	No target
Indicator	**Nationally adopted goals & targets (date when adopted)**	**1994 baseline (or closest)**	**2010**	**Current status 2015 (or nearest year)**	**2015 target**	**Other period target**	**Target achievability**	**Reporting status**
DMI 12: Number of households in informal settlements upgraded with access to basic services and secure tenure								

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[65] The Department of Energy revised the target of access to electricity from the 92% recorded in the 2013 report to the universal access of 90% grid and 10% non-grid in line with the NDP Vision 2030. Therefore, the 2015 report only refers to the universal target and not the 92% as reported in 2013.

[66] This target has been revised from the 92% recorded in the 2013 report to align with the National Development Plan (NDP) Vision 2013. The revised target is by 2025 to achieve 90% grid technology and 10% non-grid technology in line with NDP.

Indicator	Nationally adopted goals & targets (date when adopted)	1994 baseline (or closest)	2010	Current status 2015 (or nearest year)	2015 target	Other period target	Target achievability	Reporting status
DMI 12: Number of households in informal settlements upgraded with access to basic services and secure tenure	No data	No data		447,480 (2014)		Have 400 000 households in informal settlements upgraded with access to basic services and secure tenure by 2014	Achieved[67]	

Indicator	Nationally adopted goals & targets (date when adopted)	1994 baseline (or closest)	2010	Current status 2015 (or nearest year)	2015 target	Other period target	Target achievability	Reporting status
DMI 13: Instability of water supply								
DMI 13: Instability of water supply[68]	No data	23.1 (2009)	25.3	25.9 (2013)	No target		Not applicable	No target

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[67] Although the data provided show that 447 480 households had access to basic services by 2014, it is not clear on the issue of tenure and related indicators to fulfil the definition of slums. There is also no clear definition of informal settlements with clear targets.

[68] The water instability indicator is defined as the percentage of households that received water from a municipality but who, over the 12 months before the survey, reported interruptions that lasted more than 2 days or who have experienced water interruptions for more than 15 days during that time. Therefore, the data provided refers to instability, which needs to be reduced over time.

Table 22: DMI 1 – Proportion of natural habitat

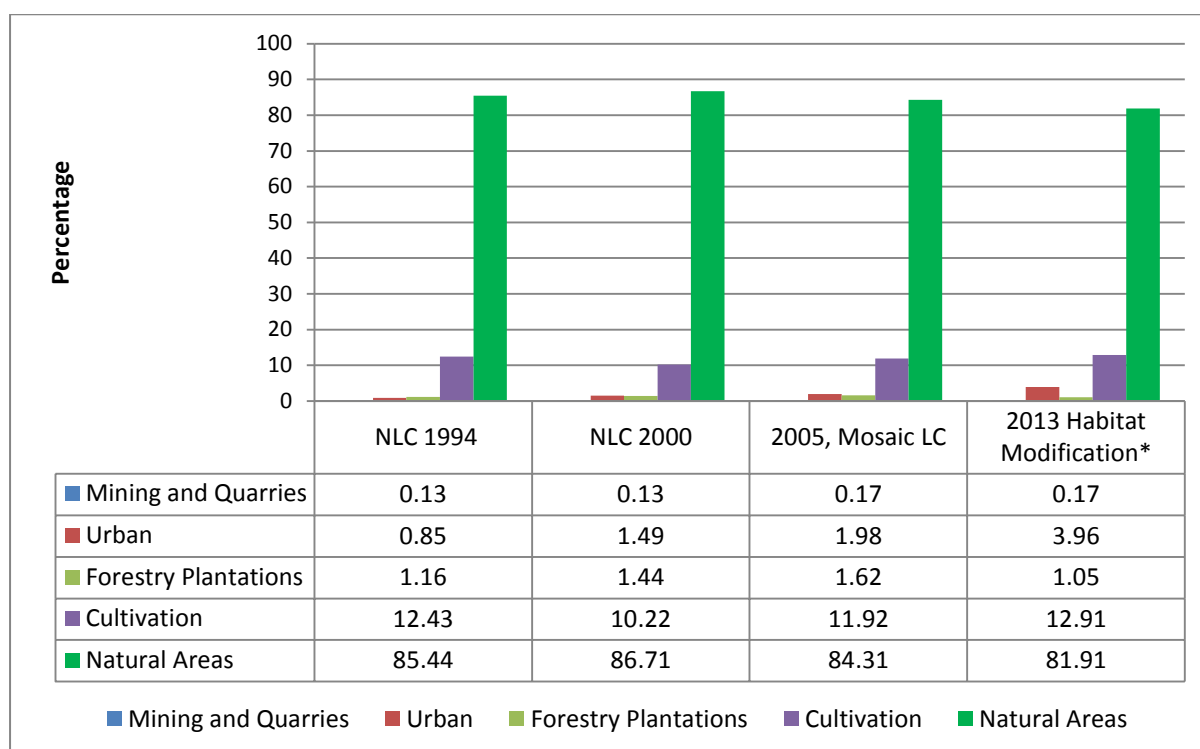| INDICATOR	DEFINITION	TARGET
DMI 1: Proportion of natural habitat	The proportion of natural habitat is the degree at which natural habitat has been transformed into different land use classes. The loss of natural habitat is one of the main causes of biodiversity loss	South Africa's National Biodiversity Strategy and Action Plan (NBSAP) sets the target that by 2010 the rate of loss and degradation of natural habitats should be decreased

Figure 12 shows the proportion of natural habitat in South Africa. The proportion of natural areas has slightly decreased by 4.13% between 1994 and 2013. There have been substantial increases in land-use change activities that contribute to loss of natural habitat, leading to biodiversity loss. For example, land area under urban areas has increased by 365.88% between 1994 and 2013. This indicates the increasing rates of urbanisation in South Africa, which rings alarming bells on rates of destruction of natural areas and loss of biodiversity where urban areas are growing. The proportion of land-use change as a result of mining and quarries increased by 30.77% in the same period. From the results, land-use change into urban areas and mining and quarries causes the largest destruction of the natural habitat. More efforts are required to ensure that growing urbanisation and mining activities address environmental management issues in the respective areas.

Land cover change is a major pressure on terrestrial ecosystems; it is used to quantify where natural habitat has been irreversibly lost and provides 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 on-going loss are high in provinces such as 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:

a. 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.
b. 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.
c. 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).

Figure 12: DMI 1 – Proportion of natural habitat

	NLC 1994	NLC 2000	2005, Mosaic LC	2013 Habitat Modification*
■ Mining and Quarries	0.13	0.13	0.17	0.17
■ Urban	0.85	1.49	1.98	3.96
■ Forestry Plantations	1.16	1.44	1.62	1.05
■ Cultivation	12.43	10.22	11.92	12.91
■ Natural Areas	85.44	86.71	84.31	81.91

■ Mining and Quarries ■ Urban ■ Forestry Plantations ■ Cultivation ■ Natural Areas

Source: SANBI, 2014

DMI 1: LESSONS LEARNT AND 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.

Table 23: DMI 2 – Ecosystem threat status

INDICATOR	DEFINITION	TARGET
DMI 2: Ecosystem threat status	Species extinction: This includes preventing further degradation and loss of structure, function and composition of threatened ecosystems	South Africa's National Biodiversity Strategy and Action Plan sets the targets that by 2010, at least five key industries are actively avoiding threatened ecosystems in their production, planning and operations, and invest in managing threatened 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. Appropriate supporting material is available, and listed ecosystems are routinely taken into account in land-use planning and decision-making

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). The ecosystem protection level shows whether ecosystems are adequately protected or underprotected. 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). The ecosystem threat status based on the 2011 National Biodiversity Assessment is shown in Figure 14. The most critically endangered and vulnerable ecosystems are the estuarine (79%), wetland (48%) and river (26%) ecosystems. The least threatened ecosystems are the terrestrial (60%) and marine and coastal (53%) ecosystems.

The Department of Environmental Affairs 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; the SANParks – Land Acquisition Plan; the National Environmental Management: Protected Areas Act; the 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 under way 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.

In terms of meeting the second target of updating the list of protected ecosystems at least once, South Africa met the target. According to SANBI (2004), the first list of protected ecosystems was produced in 2004 as per Table 14.

Figure 13: DMI 2 – First list of ecosystem threat status, 2004
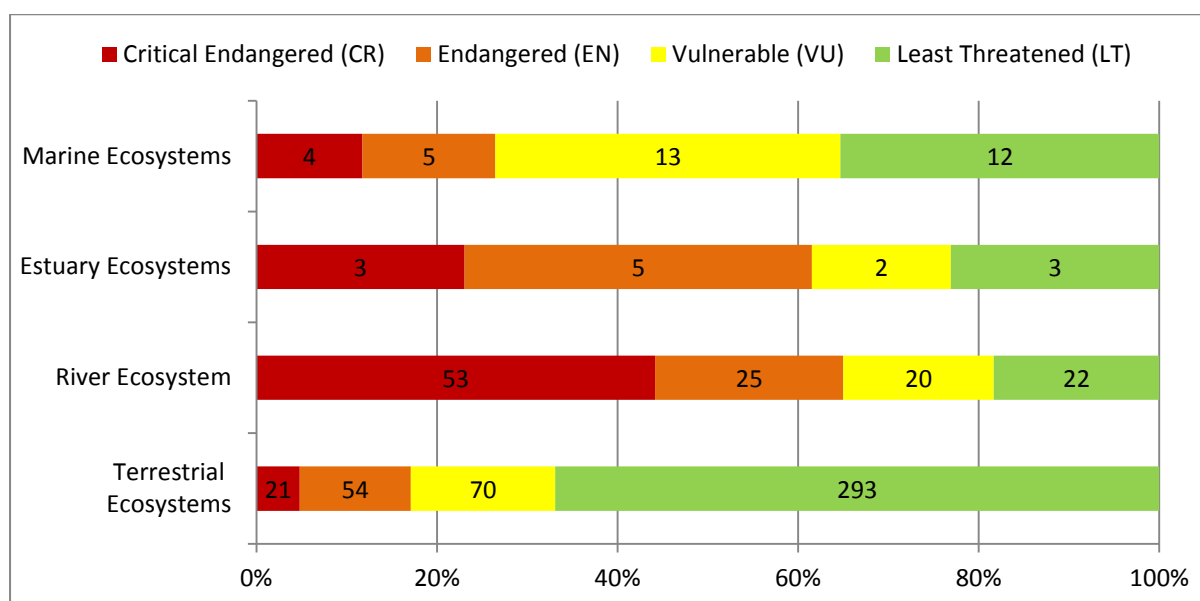
Source: SANBI, 2004 (National Spatial Biodiversity Assessment Report, 2004)

The data on the status of ecosystem threats shows that there has been a significant reduction in the number of species listed as threatened between 2004 and 2011. The update of the list from 2004 to 2011 enabled government to partially achieve the target on DMI 2, which requires that by 2013, threatened or protected ecosystems must have been identified and listed, and the list has been updated at least once.

Figure 14: DMI 2 – Ecosystem threat status, 2011
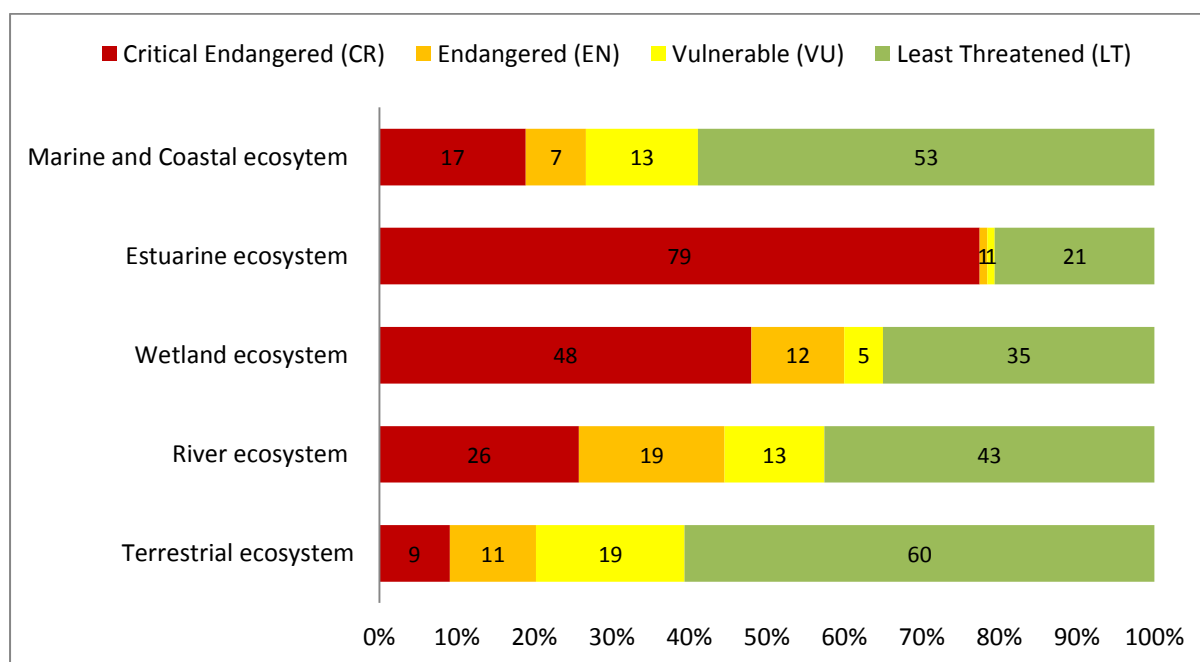
Source: Driver et al., 2012

DMI 2: LESSONS LEARNT AND POST-2015 AGENDA
Protection of threatened ecosystems requires efforts to be stepped up in the implementation and enforcement of the various policies and strategies (e.g. the NPAES; Provincial Protected Area Expansion Strategies; the SANParks – Land Acquisition Plan; the National Environmental Management: Protected Areas Act; the National Protected Areas Database; and the National Biodiversity Framework, etc.).

Table 24: DMI 3 – Percentage of permitted landfill sites[69]

INDICATOR	DEFINITION	TARGET
DMI 4: Percentage of permitted landfill sites (Decrease in number of unlicensed waste disposal sites)	A waste disposal site (landfill) is a place that is used for the disposal of waste	To have 80% of the 341 known unlicensed landfill sites licensed by 2015

Data of the percentage of permitted landfill sites is presented in Figure 15. The Department of Environmental Affairs commissioned a study in 2007 to identify and determine all waste disposal facilities that were not licensed in South Africa, and 341 sites have been identified with an action plan on how to license the permitted landfill sites. The study further assisted in the development of a strategy on how to assess negative environmental impacts that may be caused by these facilities and to ensure that they are authorised for continued operation or closure (DEA, 2015).

Data on landfill licences shows that DEA has achieved the original target of 80% of the 341 identified landfill sites licences by 2014/2015 (DEA, 2015).

Figure 15 presents progress of the percentage of targets licensed since 2012/2013, in order to achieve the target of 80% of the 341 identified landfill sites. Prior to 2012/2013, only 23.5% of outstanding unlicensed landfill sites were licensed; however, the 80% target was achieved in 2014/2015. In the 2013 MDG country report, the data provided showed that only 4.3% of the designated 341 landfill sites were licensed by 2012/2013, compared to the 31.3% recorded in the figure below. The discrepancy in data arises from the fact that the 2013 MDG report only accounted for the national data, excluding data on licensed landfills by municipalities through the municipal infrastructure agency (MISA) as per the data presented in the table above. With the inclusion of all provincial and municipal data on permitted landfills, the 80% target has been exceeded[70] by 17.3% in the 2014/2015 financial year, which records 90.7% (DEA, 2014).

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[69] This indicator has been changed from number of authorised landfill sites to the percentage of permitted landfill sites. The change was made as there are no concrete targets linked to the number of authorised landfill sites, and consequently this does not give a good account of what is happening in the South African waste management context. The indicator in percentage permitted landfill sites is reflected in the Outcome 10 delivery agreement and has also been reflected in the DEA Strategic Plan 2011–2016. This indicator has set measurable targets linked to it (DEA, 2014).

[70] The remaining landfill sites are in the final stages of being licensed.

Figure 15: DMI 3 – Percentage of permitted landfill sites licensed
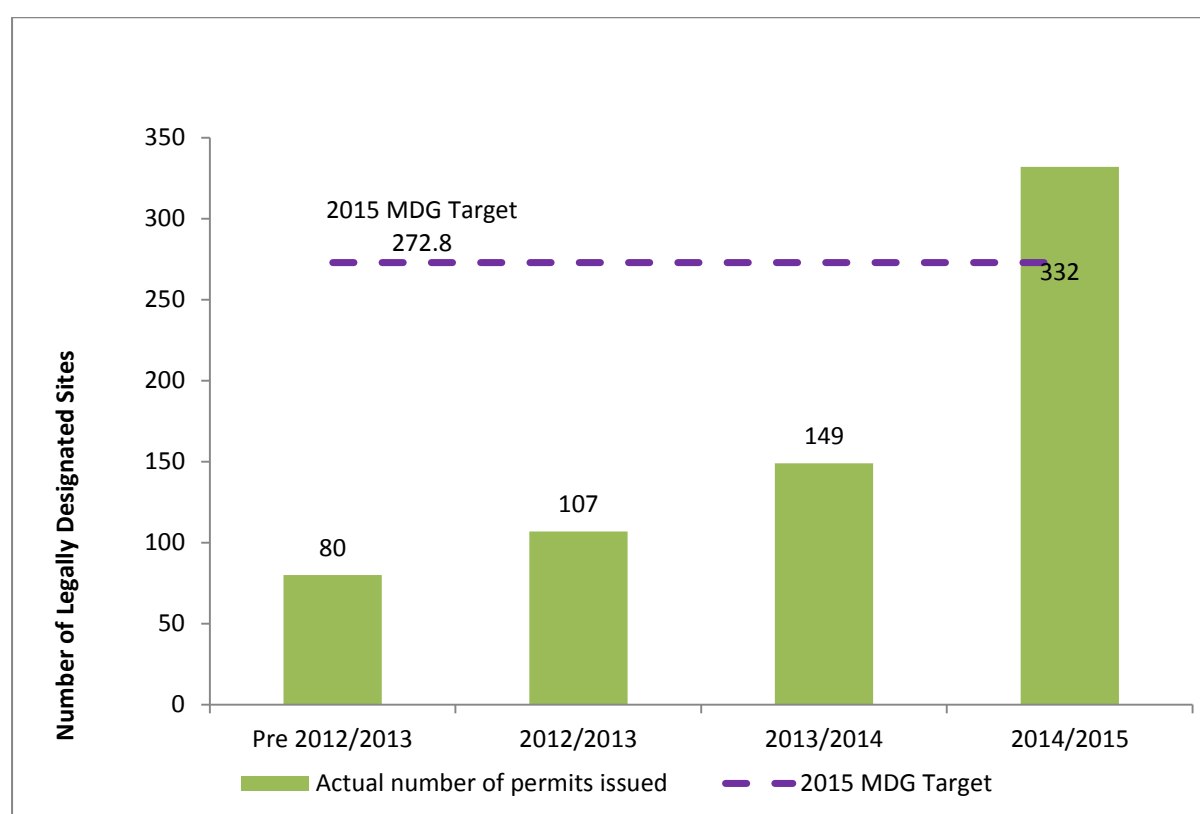
Source: Department of Environmental Affairs, 2015

DMI 3: LESSONS LEARNT AND POST-2015 AGENDA
The South African government has achieved the target for licensing the 341 landfills by 2014/2015, but there is a need to strengthen consultations with local municipalities to ensure efficient coordination of relevant data on identified landfills, and as such it is crucial for future interventions. The disparities between the 2013 reported achievement for the indicators show that not all data was utilised in the 2013 report.

Table 25: DMI 4 – Proportion of total area conserved

INDICATOR	DEFINITION	TARGET
DMI 4: Proportion of area protected (conservation areas)	Proportion of area protected (conservation areas)	By 2020, at least 17% of terrestrial and inland water areas, and 10% 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

Data for this indicator has been recorded for 2014 for the first time and shows that 3.98% of terrestrial land area has been conserved. No detailed analysis can be provided at this stage.

Table 26: DMIs 5, 6, & 7 – Proportion of land area covered by natural forests, Albany thicket and savannah woodlands

INDICATOR	DEFINITION	TARGET
DMI 5: Proportion of land area covered by natural forests	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 multilayered 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. (Guide to and Summary of the Meta-Database pertaining to Selected Attributes of South African Indigenous Forests and Woodlands: CSIR Environmentek report ENV-P-C 99027, 1999, C.M. Shackleton, et al. [editors])	Reduce biodiversity loss
DMI 6: Proportion of land area covered by savannah woodlands	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. Generally the herbaceous stratum is dominated by C4 grasses and sedges, but this, and the overall cover of the woody and herbaceous strata, may be temporarily altered by a range of disturbance phenomena. ('Dictionary of Forest Structural Terminology': SA National Scientific Programmes Report No. 147, 1988, C.J. Geldenhuys et al. [editors])	Reduce biodiversity loss
DMI 7: Proportion of land area covered by Albany thicket	Albany thicket: biologically/ecologically, thicket seems to fit neither the definition of true woodland nor forest. It is, however, defined as a biome characterised by a sparse to dense spiny evergreen shrub vegetation, with a tree component of varying proportions. Dictionary of Forest Structural Terminology: SA National Scientific Programmes Report No. 147, 1988, C.J. Geldenhuys et al. [editors])	Reduce biodiversity loss

Figure 16 shows the proportion of national land area covered by natural forests, savannah woodlands, and Albany thicket. 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. The results show that 32.62% of national land area was reported to be covered by savannah woodlands; 2.37% by Albany thicket and 0.4% by natural forests. Although natural/indigenous forests constitute only 0.4% of the South African land area, the indigenous forest biome contains resources valued for biodiversity, ecotourism, non-timber forest products, and medicine (DAFF, 2011).

The natural/indigenous forests are mainly located in Eastern Cape and KwaZulu-Natal (see Figure 17). Albany thicket is found in Eastern and Western Cape (see Figure 18). The 2001 report of the Department of Agriculture, Forestry and Fisheries on the state of forests indicates that the NLC datasets show that natural forests are stable, although evidence exists of decline in some areas and increases in many other areas. In addition, the 2011 state-of-the-forests report argues that there is no concrete data to back up these claims at national level or to quantify the loss or gain. However,

evidence of increases in land-use changes – as discussed under the proportion of natural habitat above, particularly urbanisation and mining – means that these proportions have changed.

Figure 16: DMIs 5, 6 & 7 – Proportion of land area covered by natural forests, Albany thicket & savannah woodlands (national), 2005[71]
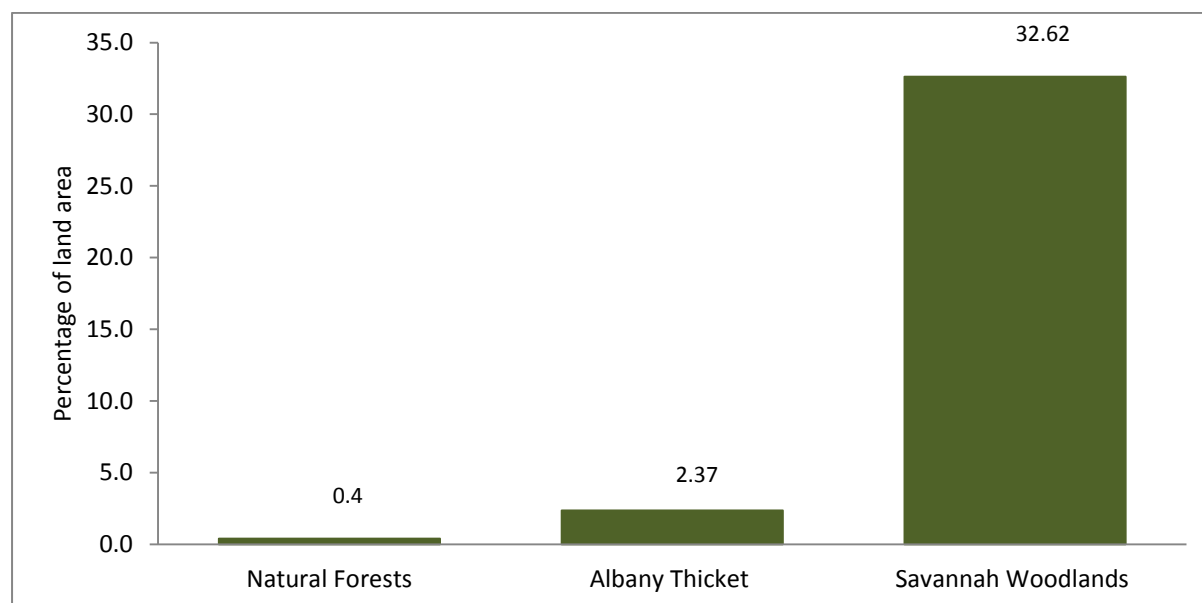
Source: Department of Agriculture, Forestry and Fisheries, 2014

South Africa has put in place several interventions to ensure sustainable forest management. In terms of the National Forests Act, 1998 all natural/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 No. 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. Given the growing land-use changes in the country, more effort is required in working with various stakeholders to ensure that natural forests remain protected to reduce natural habitat and biodiversity loss.

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

Figure 17: DMI 5 – Republic of South Africa forest resource map
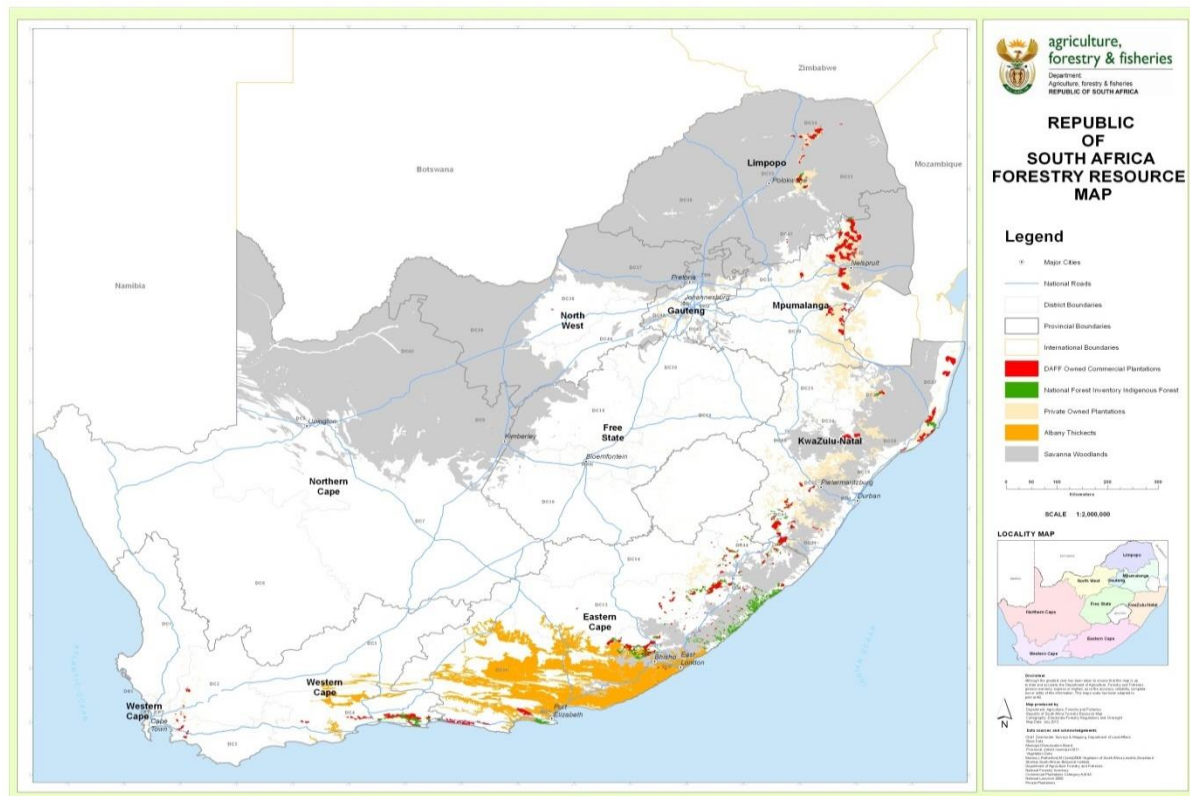
Source: Department of Agriculture Forestry and Fisheries (2013)

Figure 18: DMI 6 – Albany thicket map
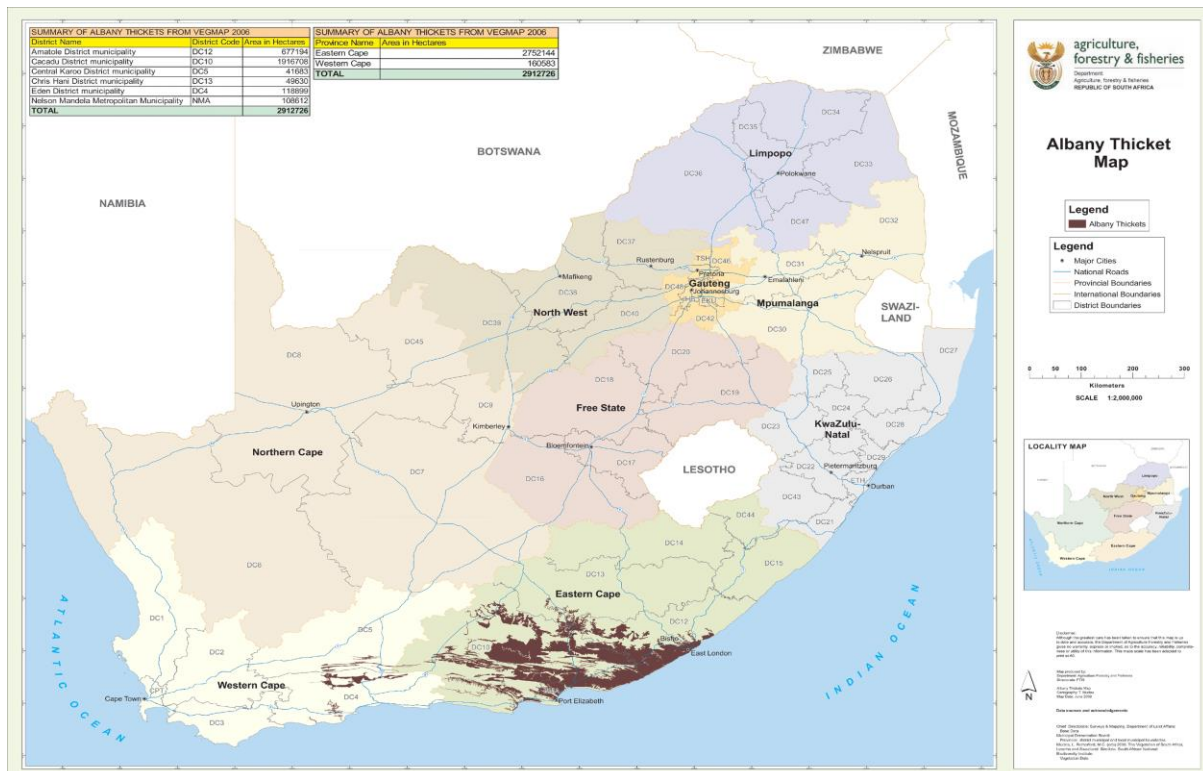
Source: Department of Agriculture Forestry and Fisheries (2013)

Figure 19 shows the proportion of land area covered by savannah woodlands at provincial level in 2005. South Africa is mainly covered by dry savannah woodlands and bushveld, owing to its dry climatic conditions (Department of Agriculture, Forestry and Fisheries, 2011). The provinces with the highest proportion of land areas under savannah woodlands (above 600 000 ha) are Limpopo, North West and Northern Cape. Gauteng has the smallest proportion of land area covered by savannah woodlands. The results show that the provinces that have large rural areas have the highest proportions of land area under savannah woodlands. Gauteng, which is experiencing very high rates of urbanisation as the economic hub of the country, has the smallest proportions of area under savannah woodlands.

Figure 19: DMI 7 – Proportion of land area covered by savannah woodlands (provincial), 2005
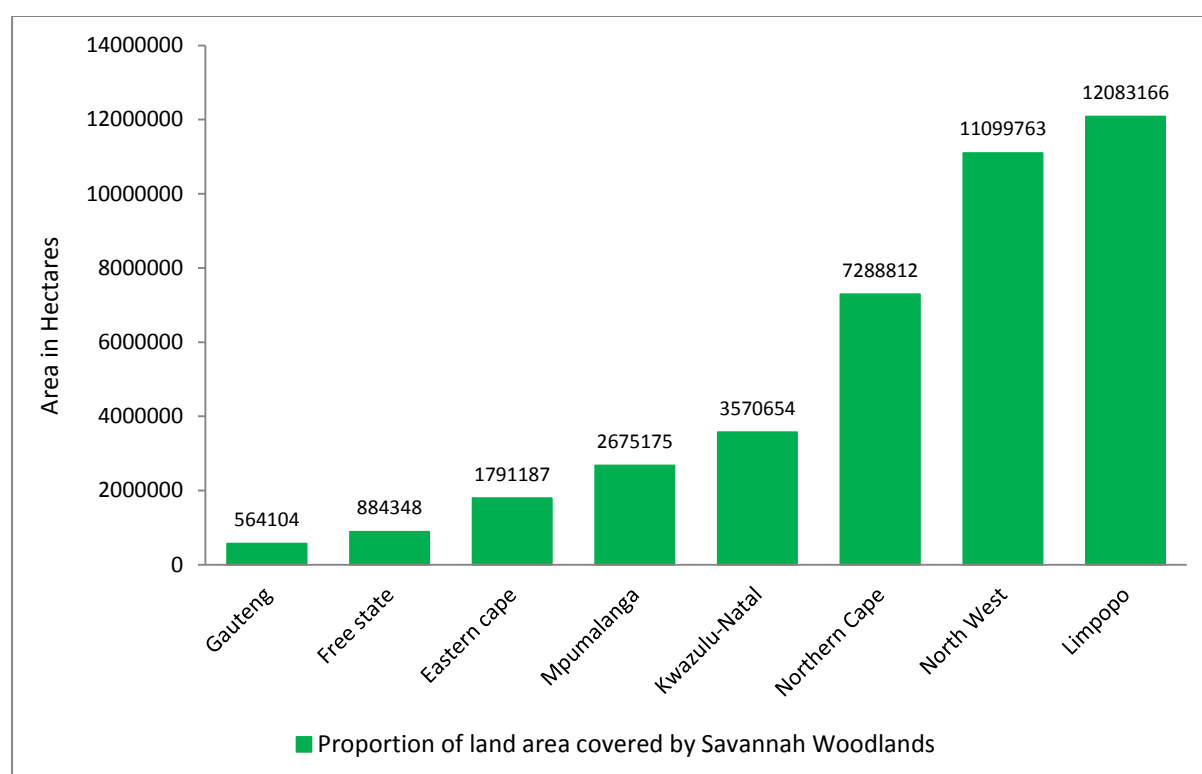
Source: Department of Agriculture, Forestry and Fisheries, 2014

The extent of savannah woodlands in South Africa is presented in Figure 20. Savannah woodlands are important sources of livelihood, especially for rural people in the communal areas of South Africa. Examples of products from the woodlands are wood and non-wood products for fuel, wood, building material, household utensils, traditional fencing and a variety of food and medicine items (Department of Agriculture, Forestry and Fisheries, 2011). In addition, savannah woodlands provide important opportunities for tourism through their rich biodiversity. 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 Forests Act. It is critical to conserve and maintain these woodlands to ensure sustained provision of these ecosystem services and benefits for the well-being of the South African society, especially poor rural people who live in close proximity to woodland areas.

Although the National Land Cover 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 (Department of Agriculture, Forestry and Fisheries, 2011). For example, as discussed above, land-use change activities such as urbanisation and mining result in the destruction of savannah woodlands. The National Forests Act mandates the minister to monitor trends and address negative trends. There are species that are endemic to certain types of forests, and if those forests are affected, these species will disappear. This will affect biodiversity. It is critical that environmental regulations are swiftly implemented and enforced in areas experiencing rapid land-use changes to protect the environment (and reduce biodiversity loss) while at the same time ensuring macro-economic growth.

Figure 20: DMI 7 – Savannah woodland map

Source: Department of Agriculture, Forestry and Fisheries, 2013
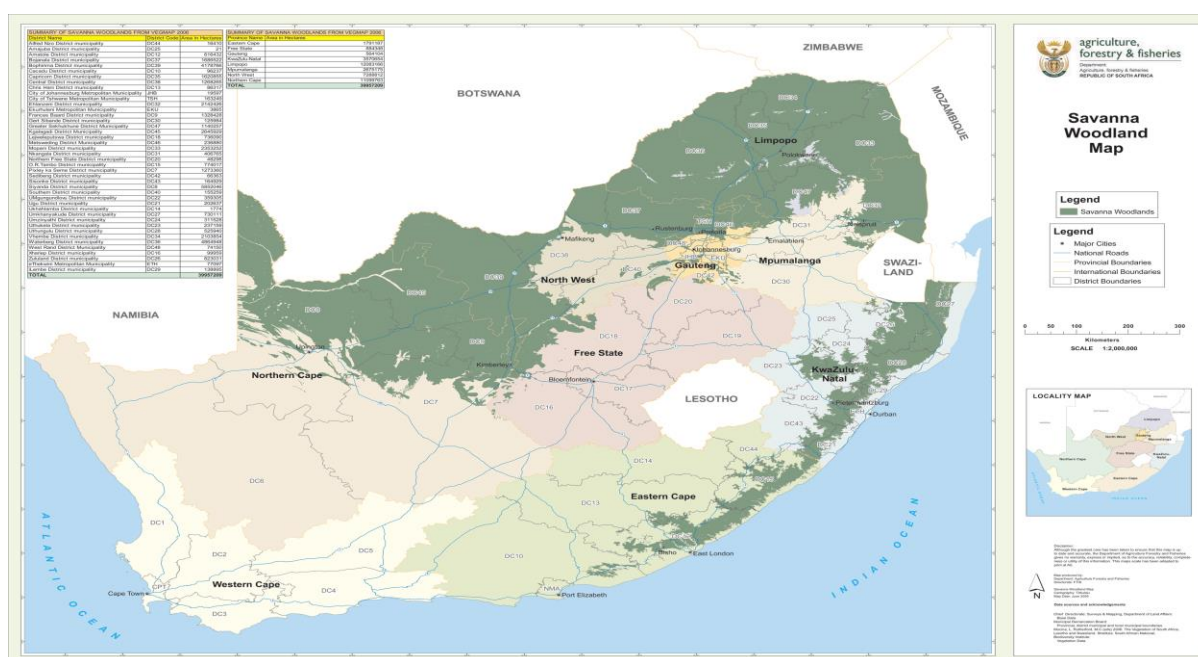
DMIs 6, 7 and 8: LESSONS LEARNT AND POST-2015 AGENDA
Indigenous forests have multiple roles that include: socio-economic benefits; biodiversity conservation; carbon sequestration; habitat for fauna and flora etc. The post-2015 agenda for DMIs 6, 7 and 8 should focus on ensuring the implementation and enforcement of the various national policies and strategies aimed at protecting indigenous forests (e.g. the National Protected Area Expansion Strategy (NPAES); Provincial Protected Area Expansion Strategies; the SANParks – Land Acquisition Plan; the National Environmental Management: Protected Areas Act; the National Protected Areas Database; and the National Biodiversity Framework).

Table 27: DMI 8 – Proportion of land area covered by commercial plantations

INDICATOR	DEFINITION	TARGET
DMI 9: Proportion of land area covered by commercial plantations	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). The indicator is defined as the proportion of forest area to total land area and expressed as a percentage. Forest is defined in the Food and Agriculture Organisation'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	None

Figure 21 and Figure 22 show the proportion of land area covered by commercial plantations at national and provincial levels, respectively. At national level, the proportion of land area under commercial plantations decreased by 1.89% between 2006 and 2008, followed by a sharp increase (of 1.39%) in 2009. The proportion of land area under commercial plantations then slightly decreased by 0.50% during the period 2009–2012. Afforestation efforts driven by the Department of Agriculture, Forestry and Fisheries are expected to contribute to reversing the declining trends in the proportion of land area under commercial plantations in the country. For example, over 100 000 hectares of virgin land were identified in KwaZulu-Natal and Eastern Cape for afforestation programmes (Department of Agriculture Forestry and Fisheries, 2009). At provincial level, Mpumalanga and KwaZulu-Natal reported the highest proportions of land area under commercial plantations between 2006 and 2012. The other provinces with relatively high proportions of land area under commercial plantations are Eastern Cape, Western Cape, Limpopo and North West. The rest of the provinces reported no commercial plantations between 2006 and 2012.

Commercial plantation forestry in South Africa encompasses large planted forests (established to supply raw materials to satisfy mining, construction and industrial markets) that supply the pulp mills, 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 a reduction in the area under plantations can affect biodiversity issues and the capacity of forests to mitigate the effects of climate change, especially in areas with 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.

Figure 21: DMI 8 – Proportion of land area covered by commercial plantations (national)
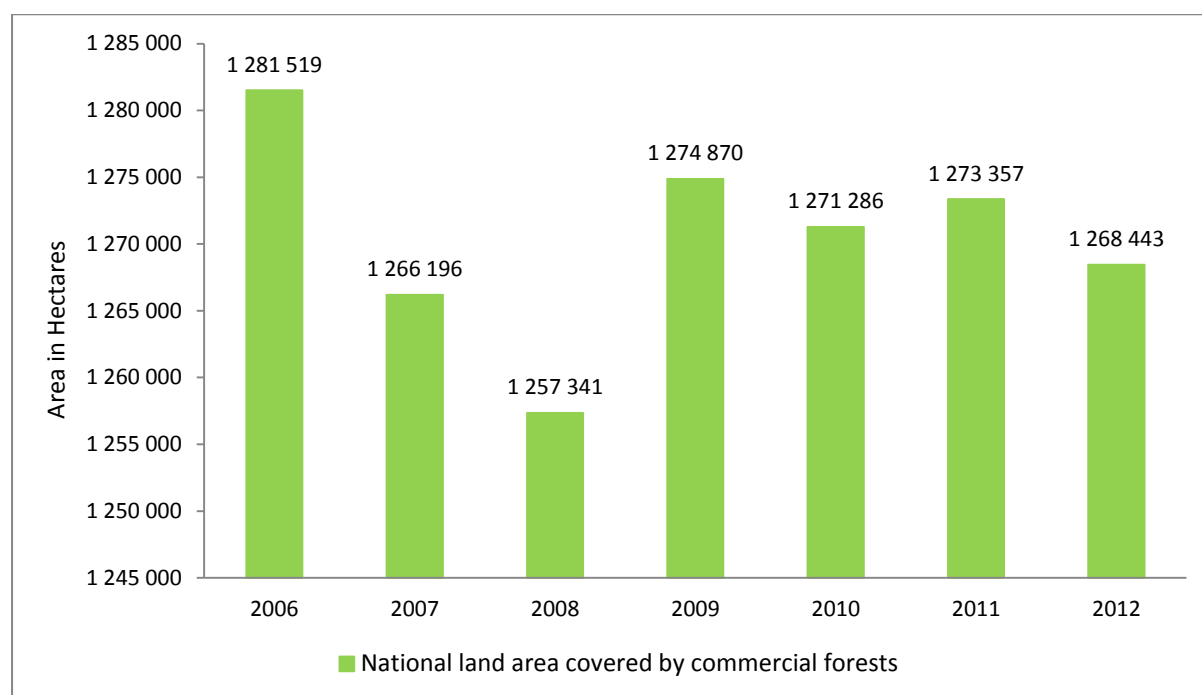
Source: Department of Agriculture, Forestry and Fisheries, 2014

Figure 22: DMI 8 – Proportion of land area covered by commercial plantations (provincial)

	2006	2007	2008	2009	2010	2011	2012
North West	126	126	126	304	304	304	304
Limpopo	48778	48 096	47 982	49 669	48 295	48 284	48 338
Western Cape	61715	61 097	59 570	59 171	60 512	61 454	55 594
Eastern Cape	158862	155 079	153 380	141 819	141 540	141 413	142 458
KwaZulu-Natal	490781	486 967	486 020	504 393	502 016	503 213	502 691
Mpumalanga	521257	514 831	510 263	519 513	518 619	518 689	519 058
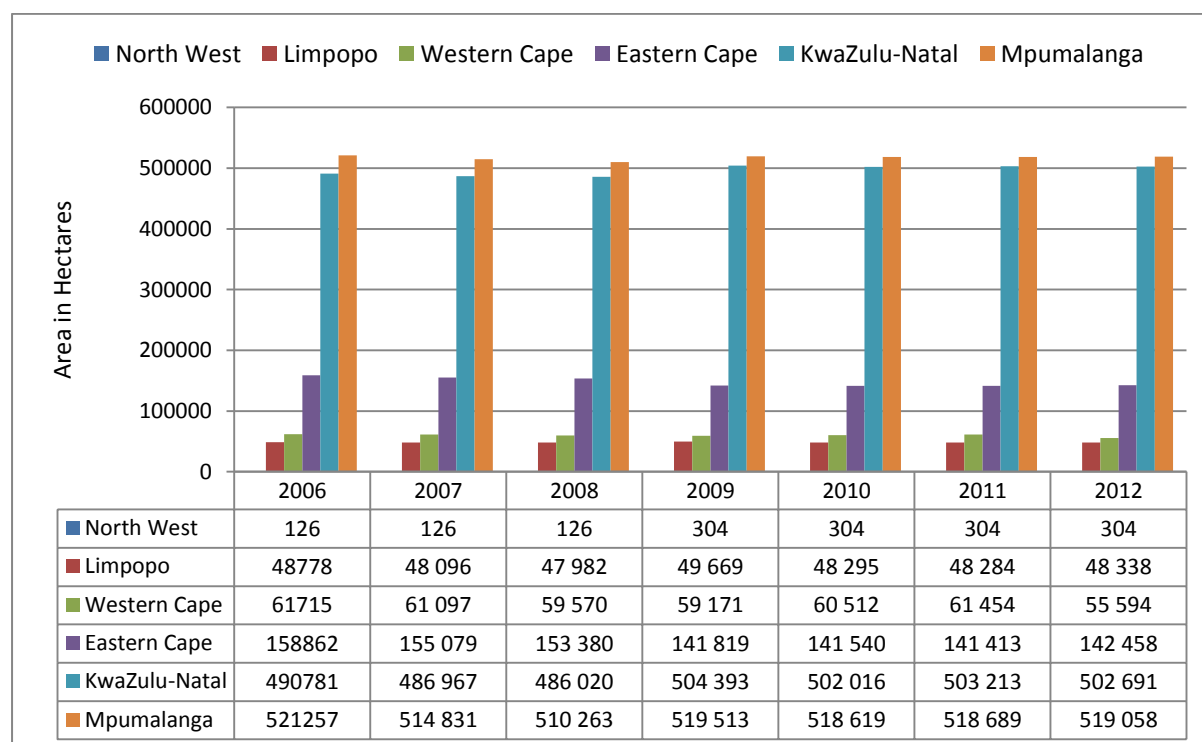
Source: Department of Agriculture, Forestry and Fisheries, 2014

DMI 6: LESSONS LEARNT AND POST-2015 AGENDA
Commercial plantations have multiple roles that include economic benefits; biodiversity conservation; carbon sequestration; habitat for fauna and flora etc. Trends show marginal decreases in the proportion of land area under commercial plantations. Afforestation and re-afforestation efforts driven by the Department of Agriculture, Forestry and Fisheries should be increased in the post-2015 agenda. Overall, protecting natural forests and commercial plantations from destruction from land-use changes through various policies and strategies by the Department of Agriculture, Forestry and Fisheries (including various stakeholders) should be strictly implemented post-2015.

Table 28: DMI 9 – Proportion of households with access[72] to electricity

INDICATOR	DEFINITION	TARGET
DMI 9: Proportion of households with access to electricity	Proportion of households with access to electricity	In line with the National Development Plan[73] (NDP), the target is to reach universal access by 2025 in which 90% will be grid technologies and 10% will be non-grid technologies

Although improved access to energy was not adopted as one of the MDG targets in 2000, the energy indicator is crucial for economic development and for the attainment of the other MDGs, like eradicating poverty and hunger (MDG1), and improving universal access to education (MDG2), among others. Similarly, the South African government adopted the energy indicators as DMIs and revised the 2009 targets to have universal access to electricity by 2025 – where 90% access would be from grid technologies and 10% from non-grid technologies by 2025 in line with the NDP Vision 2030 target of universal access by 2025. According to the DoE Strategic Plan (2015–2020), the right combination of policies and technologies is strategically important to ensure that economic growth, energy demand and the associated energy related carbon emissions are well managed, while increasing energy generation capacity. This requires concerted efforts from all relevant stakeholders, including the private sector. In 1994, the government introduced the Integrated National Electrification Programme (INEP), enabling 85% of households to have access to energy by 2012 (DoE, 2012). The INEP has been noted as the largest budget item of the DoE in its first five years of existence (DoE, 2013/14).

The GHS data presented in Figure 23 shows that over 85% of South African households had access to electricity in 2013, constituting an improvement from 77% in 2002. The steady increase in access to electricity is an indication that there is progress towards achieving the target. In order to support and track the domesticated access to energy, the South African government has put in place several initiatives, regulatory frameworks, policies and strategies, such as the Energy White Paper, the Electricity Regulation Act, and the Free Basic Electricity (FBE) strategy.

According to DoE (2012), 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. With so many socio-economic challenges arising from high unemployment, poverty and inequalities, low-income households carry the energy burden, facing limited access to cleaner energy sources and forcing them to resort to alternative sources of energy, like solid fuels. However,

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[72] Although estimates from the General Household Survey (GHS 2002-2013) display similar trends over time with data from studies by the Department of Energy, magnitudes often differ slightly. This question was not asked in the 2011 Census (DoE, 2014).
[73] The Department of Energy revised the target of access to electricity from the 92% recorded in the 2013 report to the universal access of 90% grid and 10% non-grid in line with the NDP Vision 2030. Therefore, the 2015 report only refers to the universal target.

the DoE made strides in ensuring that the poor are given some relief against high energy costs by introducing policies such as the FBE, Free Basic Alternative Energy (FBAE) and Inclined Block Tariff (IBT) which offer 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 50 kWh of electricity free of charge. The 2011 household survey on energy showed that about 69% of households in South Africa are benefiting from the FBE provision, with non-electrified households benefiting from the FBAE provisions. 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 (DoE, 2012).

Figure 23: DMI 9 – Proportion of household with access to electricity (national)
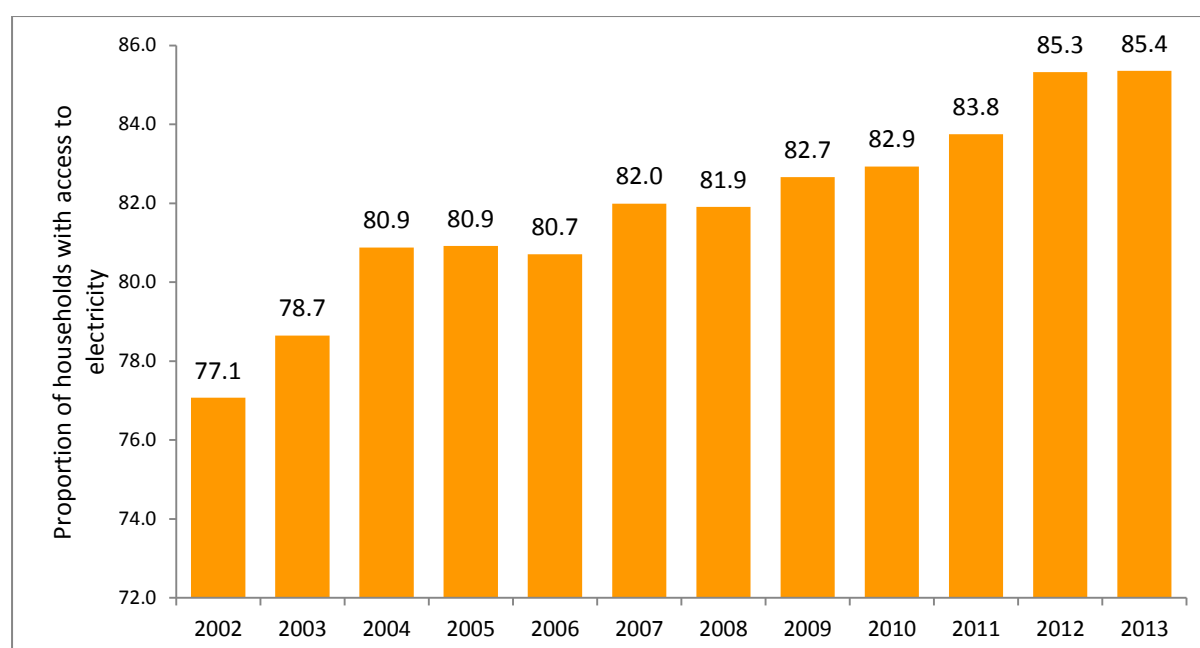
Source: Constructed from the General Household Survey dataset, 2002-2013 (Stats SA, 2015)

The provincial data on access to electricity is presented in Figure 24. It is worth noting that while the less developed provinces like Limpopo, KwaZulu-Natal and Eastern Cape had the lowest proportion of households with access to electricity in 2002, this proportion increased over time for all three provinces. For Limpopo, it increased from 72.5% to 90.3%, for KwaZulu-Natal from 68.2% in 2002 to 80% in 2013, and for Eastern Cape from 55.3% to 81.3% between 2002 and 2013, respectively. This is a situation where the least developed provinces like Limpopo, Mpumalanga and Eastern Cape have made significant strides towards improving access to electricity. This can be attributed to efforts of government interventions, as well as efforts of the local municipalities towards addressing the service delivery targets, especially the energy backlog that allowed over 80% of households to have access to electricity by 2013.

For Western Cape, the proportion of households with access to electricity declined from its highest of 96.2% in 2007 to 83.3% in 2013, while Gauteng recorded a decline from 87.1% in 2002 to 83.6% in 2013 (see Figure 24). The decline in access to electricity for these two most developed provinces could be attributed to the rapidly growing urban populations arising from rural-urban migration of

people, who end up in informal settlements in most urban centres, especially the big metros like Cape Town and Johannesburg.

Figure 24: DMI 9 – Proportion of households with access to electricity (provincial)

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
National	77.1	78.7	80.9	80.9	80.7	82.0	81.9	82.7	82.9	83.8	85.3	85.4
Western Cape	88.5	89.1	90.9	92.5	93.4	96.2	93.6	89.6	87.1	86.6	90.5	89.3
Eastern Cape	55.3	57.8	60.4	68.0	69.5	69.8	66.8	69.7	72.8	76.4	80.4	81.3
Northern Cape	81.8	79.4	83.0	88.5	87.7	88.7	87.6	89.6	88.6	91.4	91.9	89.7
Free State	85.1	84.3	88.0	88.5	88.3	87.9	89.7	91.9	92.8	93.8	91.5	91.7
KwaZulu-Natal	68.9	70.6	73.0	72.6	74.8	75.8	73.5	75.9	76.9	78.2	79.3	80.0
Northwest	82.0	85.4	88.9	84.8	85.5	84.9	80.5	80.9	83.7	86.3	85.3	88.3
Gauteng	87.1	87.2	88.3	83.4	79.0	80.4	87.2	86.1	83.6	82.2	84.6	83.6
Mpumalanga	75.9	81.1	83.6	81.6	83.3	85.3	82.5	85.8	87.0	87.6	88.4	89.3
Limpopo	72.5	75.3	77.0	82.6	83.4	86.5	81.8	84.3	88.0	91.0	90.5	90.3

Source: Constructed from the General Household Survey dataset, 2002-2013 (Stats SA, 2015)

Figure 25: DMI 9 – Backlog in access to electricity (provincial)
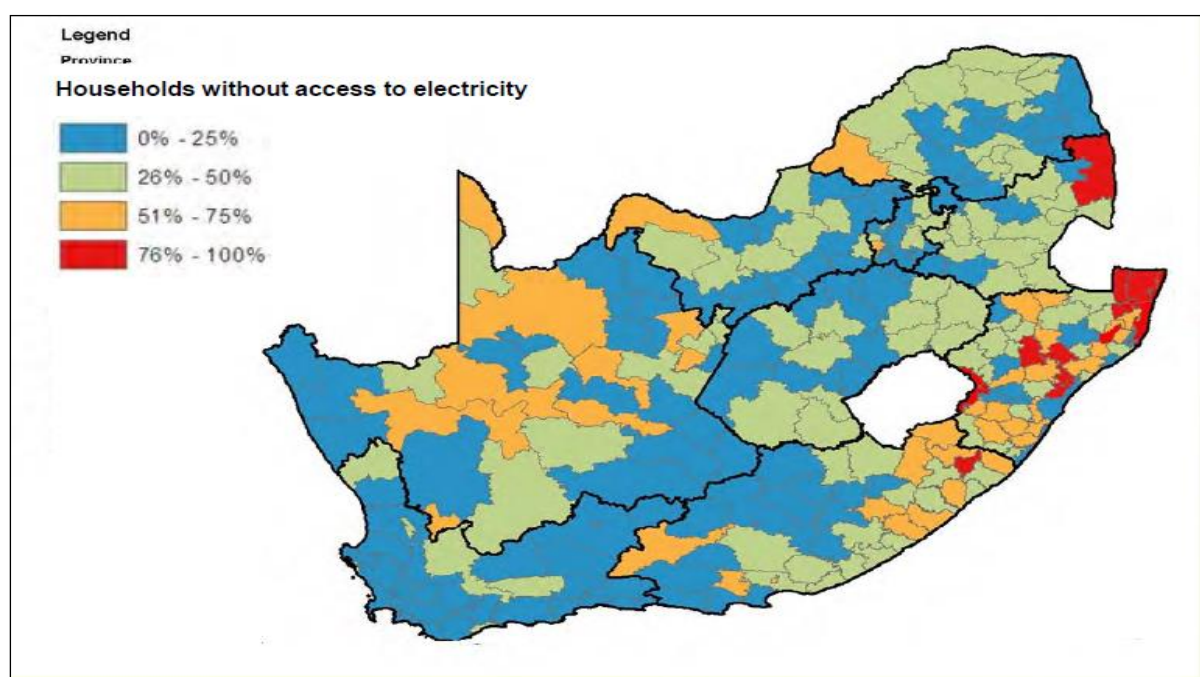
Source: DOE (2013)

DMI 7: LESSONS LEARNT AND 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. Growing urbanisation presents challenges for access to electricity and other services in urban areas. Informal settlements: most of these areas have not been proclaimed and it is therefore difficult for the government to electrify areas that are not proclaimed, since there is no assurance that these settlements will not be moved/relocated to other areas. In rural areas, the main challenges include lack of infrastructure, topography, scattered settlements and households.

Table 29: DMI 10 – Proportion of population using solid fuels as primary source of energy for cooking

INDICATOR	DEFINITION	TARGET
DMI 10: Proportion of population using solid fuels as primary source of energy: Cooking	The percentage of households that use solid fuels as primary source of energy for cooking are households that use coal, wood and dung for cooking.	None

At provincial level, some provinces recorded increases in the use of solid fuels around 2007 and 2008, which could be attributed to the global economic meltdown, forcing poor households to resort to solid fuels for cooking. Provinces like Gauteng, Western Cape and Eastern Cape were the provinces to make the least use of solid fuels for cooking as a source of energy, while Limpopo and Mpumalanga recorded the highest percentages as far as this source of energy for cooking is concerned. Again, the disparity in access to energy sources illustrates the level of technological advancement among the different provinces. This is presented in Figure 26.

Figure 26: DMI 10 – Proportion of households using solid fuels as primary source of energy for cooking (provincial)

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
National	22.6	21.7	20.6	18.0	16.4	16.2	17.8	16.7	15.2	13.8	12.6	11.0
Eastern Cape	38.6	37.6	35.4	26.7	25.8	22.2	27.2	24.3	21.4	19.4	17.9	13.7
Northern Cape	14.5	13.1	16.0	12.8	11.0	12.8	14.4	11.1	10.7	10.2	8.9	4.3
Free State	17.1	15.5	15.4	10.8	10.5	9.3	8.5	7.7	5.4	4.8	5.0	4.4
KwaZulu-Natal	25.1	25.7	23.2	22.4	21.1	21.3	24.5	23.7	22.3	20.1	16.7	16.7
Northwest	21.6	19.1	17.6	13.4	11.7	11.3	15.5	13.8	12.7	9.6	9.4	8.6
Gauteng	3.4	3.5	3.0	2.7	2.0	3.0	2.8	2.1	1.6	1.7	1.4	1.1
Mpumalanga	39.2	36.5	38.9	38.2	34.9	32.9	34.9	34.7	29.1	26.3	23.5	18.3
Limpopo	61.0	60.4	57.5	53.7	47.7	50.2	51.5	50.0	48.9	45.6	45.4	41.5

Source: Constructed from the General Household Survey dataset, 2002-2013 (Stats SA, 2015)

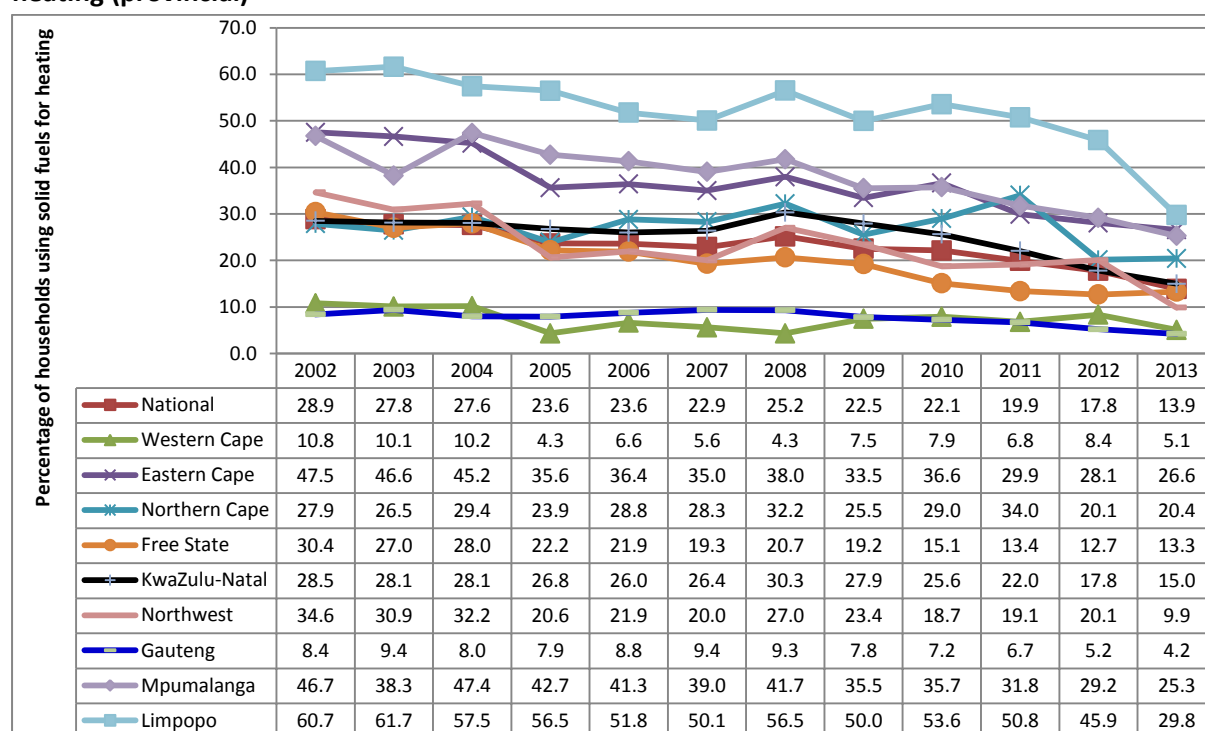| DMI 10: LESSONS LEARNT AND POST-2015 AGENDA |
|---|
| Ensuring affordable access and productive use of the relatively cleaner sources of energy, particularly among poor households, should be central to the post-2015 agenda on energy access. Growing urbanisation presents challenges for access to electricity and other services in urban areas. Informal settlements: most of these areas have not been proclaimed, and it is therefore difficult for the government to electrify areas that are not proclaimed, since there is no assurance that these settlements will not be moved/relocated to other areas. In rural areas, the main challenges include lack of infrastructure, topography, scattered settlements and households. |

Table 30: DMI 11 – Proportion of population using solid fuels as primary source of energy for heating

INDICATOR	DEFINITION	TARGET
DMI 11: Proportion of population using solid fuels as primary source of energy: Heating	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	None

According to Stats SA (2014), the decline in solid-fuel consumption in 2013 was likely due to the introduction of continuous data collection in which the sample was equally distributed across the calendar year. Whereas the sample was previously concentrated in the colder winter and early spring months (July–September), households were now interviewed across the year – also in the summer months. Data on provincial use of solid fuels for heating shows that again, the relatively less developed provinces of Mpumalanga, Limpopo, Eastern Cape and KZN had high proportions of households using solid fuels, although a modest decline over time can be observed.

Figure 27: DMI 11 – Proportion of households using solid fuels as primary source of energy for heating (provincial)

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
National	28.9	27.8	27.6	23.6	23.6	22.9	25.2	22.5	22.1	19.9	17.8	13.9
Western Cape	10.8	10.1	10.2	4.3	6.6	5.6	4.3	7.5	7.9	6.8	8.4	5.1
Eastern Cape	47.5	46.6	45.2	35.6	36.4	35.0	38.0	33.5	36.6	29.9	28.1	26.6
Northern Cape	27.9	26.5	29.4	23.9	28.8	28.3	32.2	25.5	29.0	34.0	20.1	20.4
Free State	30.4	27.0	28.0	22.2	21.9	19.3	20.7	19.2	15.1	13.4	12.7	13.3
KwaZulu-Natal	28.5	28.1	28.1	26.8	26.0	26.4	30.3	27.9	25.6	22.0	17.8	15.0
Northwest	34.6	30.9	32.2	20.6	21.9	20.0	27.0	23.4	18.7	19.1	20.1	9.9
Gauteng	8.4	9.4	8.0	7.9	8.8	9.4	9.3	7.8	7.2	6.7	5.2	4.2
Mpumalanga	46.7	38.3	47.4	42.7	41.3	39.0	41.7	35.5	35.7	31.8	29.2	25.3
Limpopo	60.7	61.7	57.5	56.5	51.8	50.1	56.5	50.0	53.6	50.8	45.9	29.8

Source: Constructed from the General Household Survey dataset, 2002-2013 (Stats SA, 2015)

DMI 11: LESSONS LEARNT AND POST-2015 AGENDA
Ensuring affordable access and productive use of the relatively cleaner sources of energy, particularly among poor households, should be central to the post-2015 agenda on energy access. Growing urbanisation and internal migration, among others, present challenges for access to electricity and other services in urban areas. Informal settlements: most of these areas have not been proclaimed, and it is therefore difficult for the government to electrify areas that are not proclaimed, since there is no assurance that these settlements will not be moved/relocated to other areas. In rural areas, the main challenges include lack of infrastructure, topography, scattered settlements and households.

Table 31: DMI 12 – Number of households upgraded within well-located informal settlements with access to basic services

INDICATOR[74]	DEFINITION	TARGET
DMI 12: Number of households in informal settlements upgraded with access to basic services and secure tenure	Number of households upgraded in well-located informal settlements with access to basic services	Have 400 000 households with upgraded services by 2014

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[74] The data provided by the DHS (2014) does not support the targets and is not clear, as some of the targets are new and not consistent with the data used for 2013. The DMI also needs to be clearly defined in order to allocate a specific target.

The target of improving the lives of 400 000 households living in informal settlements upgraded with access to basic services has been met. By 2014, a total of 447 480 households had access to basic services, which is an indication that the target has been exceeded. However, this target encompasses other basic services, which include water, sanitation and housing as well as finance for housing and accreditation of municipalities to offer housing services, plus tenure security, which are not clearly defined in the context of informal settlements. Actual access to a growing population in the informal settlements, due to rural-urban migration poses a challenge and needs to be monitored closely. Service delivery protests in informal settlements are becoming major issues, affecting sustainability of services in those areas. Therefore, local government planners and policymakers need to include such issues in their long-term planning and provide the necessary resources in their Integrated Development Plans (IDPs).

DMI 12: LESSONS LEARNT AND POST-2015 AGENDA
The target on ensuring that 400 000 households have access to basic services requires more than just upgrading the settlement. The issue of tenure security and access to funds for housing needs to be taken into account at local development level, and municipalities should ensure that their Integrated Development Plans (IDPs) are well articulated and cover issues of human settlements. The lesson is that government is dealing with a moving target, due to increasing populations in informal settlements as people move to bigger cities in search of jobs and better livelihoods.

Table 32: DMI 13 – Instability of water supply

INDICATOR	DEFINITION	TARGET
DMI 13: Instability of water supply	Percentage of households that received water from a municipality but who, over the 12 months before the survey, reported interruptions that lasted more than 2 days or who have experienced water interruptions for more than 15 days during that time	None

Data on instability of water supply, or the number of reported water interruptions experienced at national level, shows a modest increase over the review period (see Figure 28). The proportion of households who reported interruptions over the 12 months before the survey increased from 23.1% in 2009 to 25.9% in 2013, with a slight decline (22.8%) in 2011. This paints a different picture, given the proportion of the population with access to improved water sources (MDG 7.8), where over 90% of households have access. The instability indicator takes into consideration the level and reliability of infrastructure, which also reflects the level of access across the different provinces (and between urban and rural areas) as indicated earlier.

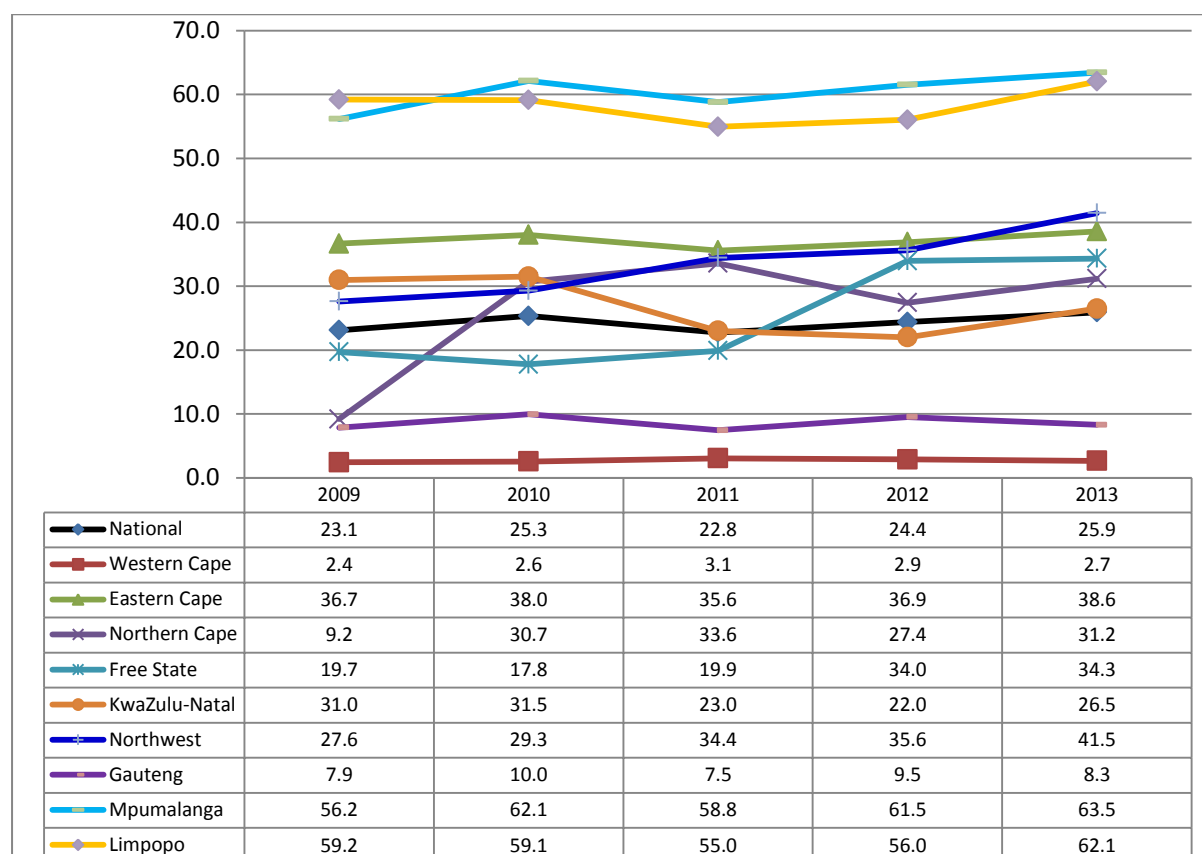**Figure 28: DMI 13 – Instability of water supply (national)**
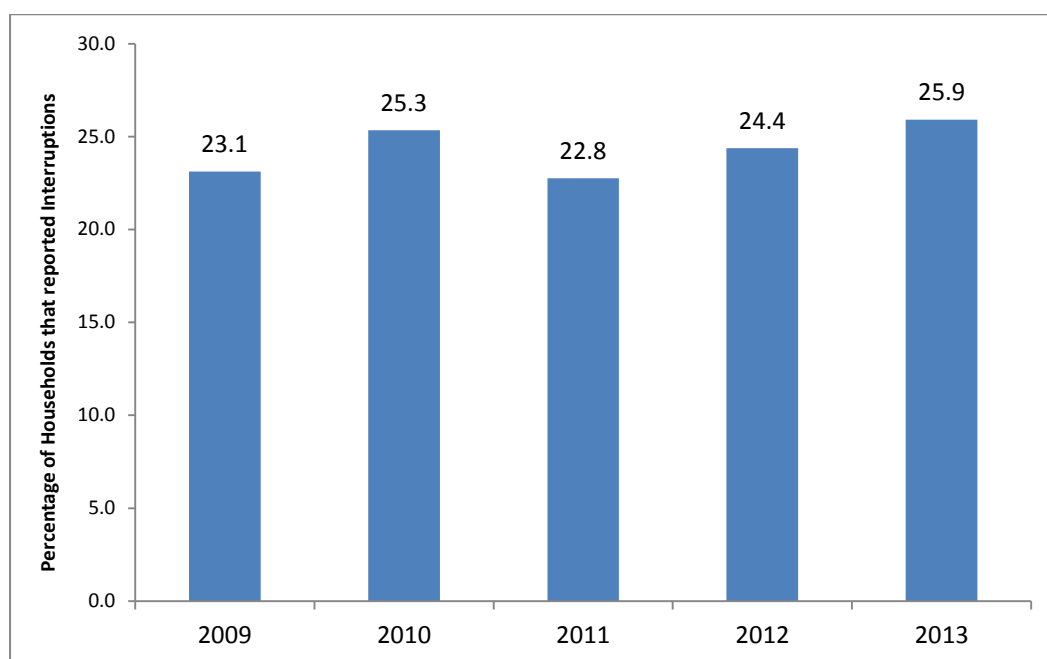
Source: Constructed from the General Household Survey dataset, 2002-2013 (Stats SA, 2015)

At provincial level, stability of water supply remained stable for provinces like Gauteng and Western Cape, which can be attributed to their relative infrastructure development and capital budget allocations (DWS, 2015) compared to other provinces (see Figure 29).

Western Cape and Gauteng had less than 10% of households reporting interruptions over the 12 months before the survey, which implies that over 90% of households have water stability. The provinces that recorded consistent increases in water instability were North West and Free State. The highest jump was recorded in 2011, increasing from 19.9% to 34.3% for Free State, and 27.6% to 41.5% for North West. The worst performing provinces when it comes to water interruptions were Mpumalanga with over 63% of households in 2013, where the proportion has been increasing since 2009, and Limpopo, that recorded 62.1% of households reporting water interruptions.

According to DWS (2015), the main reason for the difference in provincial performance with regard to water stability lies behind the fact that in provinces like Western Cape and Gauteng, among others, there are large metropolitan municipalities with the capacity and the resources to keep up with the demand for water. Free State seems to show an anomaly in that it has a metro, but the results for 2012 and 2013 show that it is experiencing a higher number of water interruptions than in previous years. The local water resource supplies are, therefore, under stress and in most cases, the reason for interruptions is due to a water resource problem and not necessarily due to infrastructure and capacity challenges encountered in the other provinces. Other factors cited for stability challenges are attributed to vandalism during service delivery protests and other socio-economic factors at community level.

Figure 29: DMI 13 – Instability of water supply (provincial)

	2009	2010	2011	2012	2013
National	23.1	25.3	22.8	24.4	25.9
Western Cape	2.4	2.6	3.1	2.9	2.7
Eastern Cape	36.7	38.0	35.6	36.9	38.6
Northern Cape	9.2	30.7	33.6	27.4	31.2
Free State	19.7	17.8	19.9	34.0	34.3
KwaZulu-Natal	31.0	31.5	23.0	22.0	26.5
Northwest	27.6	29.3	34.4	35.6	41.5
Gauteng	7.9	10.0	7.5	9.5	8.3
Mpumalanga	56.2	62.1	58.8	61.5	63.5
Limpopo	59.2	59.1	55.0	56.0	62.1

Source: Constructed from the General Household Survey dataset, 2002-2013 (Stats SA, 2015)

DMI 13: LESSONS LEARNT AND POST-2015 AGENDA
With the success story highlighted earlier for overall access to improved water services under the MDG 7C target, the domesticated instability indicator (DMI 13) shows the difference that could arise from achievement based on access to water infrastructure, while the service may not be accessible, due to operational inefficiency. The findings should guide the South African government on the provision and maintenance of water services infrastructure, to ensure long-term reliability and sustainability during its useful life.

8. CONCLUSIONS

The 2015 Millennium Development Goal Seven (MDG 7) report reviews the latest data on all the indicators and targets to determine progress made since the adoption of the MDGs in 2000. MDG 7 has four main targets (targets 7A to 7D discussed above) and ten broad indicators (see Table 1), which are further broken down into sub-indicators for some (e.g. Indicator 7.2 is divided into three sub-indicators; and indicator 7.3 is divided into three sub-indicators as well; while indicator 7.6 is divided into 2 sub-indicators), producing fifteen MDG indicators in total. Out of the fifteen indicators, four indicators have been achieved by 2015; four indicators do not have data and are therefore not reported on, five indicators have targets that go beyond 2015, while two indicators have not been achieved. The four indicators achieved include: MDG 7.3.1, which deals with reducing the consumption of hydrochlorofluorocarbons (HCFCs) by 10% of the baseline value (369.7 ODP metric tonnes) by 2015; MDG 7.3.2, which targets a 100% reduction of bromochloromethane (BCM) by 2002 (with possible essential use exemptions); and MDG 7.8 and MDG 7.9 which deal with halving, by 2015, the backlog of the proportion of people without sustainable access to safe drinking water and basic sanitation. With regard to the global water targets on access to improved water sources, which were achieved in 2010, countries need to draw lessons learnt and take and leverage on the prevailing MDG frameworks and climate.

Five of the fifteen indicators have target periods that go beyond the 2015 reporting period. They are the three indicators under MDG 7.2, which deals with reducing carbon dioxide (CO_2) emissions by 34% from 'Business as Usual' by 2020; and MDG 7.3.1 on phasing out consumption of HCFCs by 2040. Two indicators, namely MDG 7.3.3, which deals with the consumption of ozone-depleting substances: methyl bromide (MeBr) and MDG 7.7, which deals with the proportion of species threatened with extinction (% of total) have not been achieved by 2015. Out of the thirteen DMIs, three indicators have been achieved, namely DMI 2, which deals with protected ecosystems; DMI 3, which deals with the permitted landfill sites; and DMI 12, which deals with access to services in informal settlements. Three DMIs have not been achieved, while the remaining seven DMIs either lack data or do not have clear targets and time frames.

South Africa still faces challenges in meeting some of the MDG 7 indicators and DMIs as stated earlier. Nevertheless, government's efforts by intervening in terms of strategies, regulatory frameworks and appropriate policies made a significant improvement towards achieving the indicators by 2015, using the latest available data. The prevailing and other potential interventions need to form part of the post-2015 agenda, based on the findings and challenges identified as well as lessons learnt in order to guide implementation of the SDGs. Concerted efforts in implementing the recommendations from these various policies and plans can substantially steer the country towards driving sustainable development beyond 2015. Substantial progress that has been made in achieving some of the indicators should be strengthened and further supported by providing the required resources and capacity in the form of funding and infrastructure development and maintenance as these have been identified as some of the challenges, especially at the local government level.

The challenge for the South African government is how to tackle those MDG indicators that have not been achieved beyond 2015, especially if they are not well articulated in the SDGs. A similar

challenge relates to how the MDG indicators that have been achieved can be driven further in order to eradicate all forms of backlog in service delivery or eliminate the use or consumption of environmentally damaging substances. It is therefore necessary for South Africa to ensure effective implementation of the NDP in order to drive the country's low carbon development path.

9. LESSONS LEARNT AND THE POST-2015 AGENDA

Some of the lessons learnt during the MDG monitoring and evaluation period is the process of engagement among the various stakeholders, ranging from the custodian departments to the data providers and others (including civil society) to track progress to date. These processes have helped in fostering relationships and building a better understanding of the required strategies and methodologies for data collection in order to develop the appropriate targets. The engagement process also helped in developing the appropriate response interventions. It is therefore necessary for government to leverage on these established networks to maximize future development planning priorities.

Coming to the end of the MDG process in 2015 requires government and policymakers to identify the appropriate strategies, policies and other forms of interventions to steer sustainable development beyond 2015, of which some could be addressed under the SDGs. This can be leveraged from the findings on progress made towards achieving the MDGs, based on lessons learnt and potential challenges identified to inform South Africa's future development agenda.

With regard to the MDG targets that have been achieved, the lesson is to ensure reliability and operational sustainability going forward. For example, having achieved the water and sanitation targets by reducing by 50% the backlogs relating to access to improved facilities shows excellent progress by the South African government. However, for both these targets, the prevailing infrastructures in place need to be strengthened to eradicate the remaining backlog. The lesson learnt is that as government approaches the threshold of over 90% access to these services, twice the amount of effort and resources are required for an additional 1% improvement in access. Therefore, greater resource mobilisation is required to eradicate the remaining backlog, and achieve a 100% access for all South Africans.

Another lesson is for South Africa to develop domesticated indicators in order to monitor progress locally. However, without clear, measurable and time-bound targets for the DMIs, evaluating progress would not have an effective impact on future development planning. Out of the thirteen DMIs, three indicators have targets that go beyond the 2015 reporting period, while others either do not have data or targets, which makes the process ineffective.

There are a number of cross-cutting indicators between the SDGs and MDG 7 and the related DMIs. Some of the SDGs that relate to MDG 7 are those dealing with poverty eradication, sustainable and inclusive growth and development, equitable access to services and sustainable utilisation and conservation of environment resources, among others. Table 33 presents a summary that traces those SDGs that are directly related to the MDG7 indicators, where possible, as a guide for governments and all stakeholders to leverage on the existing MDG frameworks as they start to implement interventions towards the new SDGs.

The MDG indicators that deal with environmental impacts are: Indicator 7.2: Reduce carbon dioxide (CO_2) emissions; and Indicator 7.3: Reduce the consumption of ozone-depleting substances. The related sustainable goal is SDG 13: Take urgent action to combat climate change and its impacts. Indicators 7.4 and 7.5 deal with the protection of fish stocks, which is covered under SDG 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development. The MDG indicators dealing with water and sanitation are: Indicator 7.5 on water usage; Indicator 7.8, which deals with the proportion of the population using (%) an improved drinking water source, and Indicator 7.9, which deals with the proportion (%) of the population using an improved sanitation facility. The related goal is SDG 6: Ensure availability and sustainable management of water and sanitation for all. The last MDG indicator (Indicator 7.10) covers the proportion (%) of the urban population living in slums, which relates to SDG 11: Make cities and human settlements inclusive, safe, resilient and sustainable.

The summaries contained in Table 33 are an attempt to trace the linkages in order to inform and guide governments and civil society at this stage of identifying the key indicators for the SDGs.

Table 33: Cross-cutting issues between MDGs and Sustainable Development Goals (SDGs)

MDG indicator	Related Sustainable Development Goal (SDG)
Target 7A: Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources	
MDG 7.1: Proportion of land area covered by forests	**SDG 15:** Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
MDG 7.2: Reduce carbon dioxide (CO_2) emissions	**SDG 13:** Take urgent action to combat climate change and its impacts
MDG 7.3. Reduce the consumption of ozone-depleting substances	
MDG 7.4: Percentage of fish stocks within safe biological limits	**SDG 14:** Conserve and sustainably use the oceans, seas and marine resources for sustainable development
MDG 7.5: Percentage of water resources used	**SDG 6:** Ensure availability and sustainable management of water and sanitation for all **SDG 14:** Conserve and sustainably use the oceans, seas and marine resources for sustainable development
Target 7B: Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss	
MDG 7.6.1: Proportion (%) of terrestrial areas protected (% of total) MDG 7.6.2: Proportion (%) of marine areas protected (% of total)	**SDG 15:** Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
MDG 7.7: Proportion (%) of species threatened with extinction (% of total)	**SDG 14:** Conserve and sustainably use the oceans, seas and marine resources for sustainable development
Target 7C: Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation	
MDG 7.8: Proportion (%) of population using an improved drinking water source **MDG 7.9:** Proportion (%) of population using an improved sanitation facility	**SDG 6:** Ensure availability and sustainable management of water and sanitation for all
Target 7D: By 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers	
MDG 7.10: Proportion (%) of urban population living in slums	**SDG 11:** Make cities and human settlements inclusive, safe, resilient and sustainable

Source: Own construct

Table 34 establishes some links between the DMIs and the related SDGs.

Table 34: Cross-cutting issues between domesticated indicators and Sustainable Development Goals (SDGs)

Domesticated indicator	Related Sustainable Development Goal (SDG)
DMI 1: Proportion of natural habitat	**SDG 15:** Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
DMI 2: Ecosystem threat status	
DMI 3: Number of legally designated landfills	
DMI 4: Proportion of area protected (conservation areas)	**SDG 15:** Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
DMI 5: Proportion of land area covered by natural forests	
DMI 6: Proportion of land area covered by savannah woodlands	
DMI 7: Proportion of land area covered by Albany thicket	
DMI 8: Proportion (%) of land area covered by commercial plantations	
DMI 9: Proportion (%) of households with access to electricity	**SDG 7:** Ensure access to affordable, reliable, sustainable, and modern energy for all
DMI 10: Proportion (%) of population using solid fuels as primary source of energy for cooking	
DMI 11: Proportion (%) of population using solid fuels as primary source of energy for heating	
DMI 12: Number of households upgraded in well-located informal settlements with access to basic services	**SDG 11:** Make cities and human settlements, inclusive, safe, resilient and sustainable
DMI 13: Proportion (%) of population with stability of water supply	**SDG 6:** Ensure availability and sustainable management of water and sanitation for all

10. RECOMMENDATIONS

The South African government needs to leverage on the efforts undertaken during the MDG process, and foster strong partnerships where necessary in order to ensure effective implementation of the post-2015 agenda and/or the new SDGs. Provision and maintenance of infrastructure at provincial level is crucial for sustainable service delivery post-2015 and needs to be strengthened at all levels. Further, the provision of scarce resources should also embrace sustainability into the definition of such service delivery, and adopt a common understanding of such a definition.

As government reaches the end of the MDG agenda, it is necessary to implement appropriate interventions for a smooth transition towards the sustainable development goals (SDGs), as well as mainstreaming the other indicators into the national development agenda. Even though not all MDGs relate directly to the new SDGs, there is a need to start framing the imperatives towards the SDGs and guide government and all stakeholders accordingly. This is being addressed through the NDP Vision 2030, but effective implementation of the recommended interventions and milestones is crucial to ensuring that the country follows and achieves the proposed low-carbon development path.

The South African government needs to ensure that the relevant, up-to-date data is available with proper benchmarks in order to track and monitor progress of its on-going and/or new development indicators. This will close the data gaps and ensure that the selected targets are measurable within a given time period. Ensure that all indicators, especially those domesticated, have clear measurable targets, with proper benchmarking.

Ensure that MDG indicators and other national development priorities are clearly defined with proper strategies and programmes to drive them. Where such strategies and policies are in place, there is a need to ensure effective implementation, by moving from policy to practice. The NDP Vision 2030 sets out clear milestones with time-bound strategies that need to be strictly adhered to in order to ensure the achievement of a low-carbon development path. This requires a participatory approach by all stakeholders, including government, the private sector and civil society. There is a need for dedicated strategies and programmes to address the issue of reliability and operational sustainability. There is a need to bridge the gap between the MDGs and SDGs through mapping of the NDP with adequate provisions in the medium-term development planning initiatives. Government needs to ensure that the unfinished business is taken up in the SDGs or mainstreamed in other national development priorities within the NDP.

11. ANNEXURE A: MDG INDICATORS – SUMMARY OF FINDINGS, LESSONS LEARNT AND STRATEGIES FOR POST-2015 AGENDA

Table 35: MDG indicators summary of findings, lessons learnt and strategies for post-2015 agenda

SUMMARY OF FINDINGS, LESSONS LEARNT AND STRATEGIES FOR POST-2015 AGENDA		
INDICATORS	**KEY FINDINGS**	**LESSONS LEARNT AND STRATEGIES FOR POST-2015 AGENDA**
Indicator 7.2: Carbon dioxide emissions (total, per capita & per $1 GDP (PPP))	• South Africa is a major emitter of carbon dioxide emissions and the country's economy is energy intensive • The major sources of carbon dioxide emissions in South Africa are from the energy sector, mainly from electricity supply, industry, transport and liquid fuels supply • High rates of emissions (total and per capita) in the years 1994–2000; and 2001–2005 could have been driven by measures implemented to drive macro-economic growth and transformation in the phase of less developed environmental policies and strategies • Increasing environmental awareness in the late 2000s (2006–2010) could have contributed to a decreasing rate of increase in carbon dioxide emissions (total and per capita) and further reductions in per $1 GDP (PPP) emissions • The intensity of carbon dioxide emissions measured by per $1 GDP (PPP) has been decreasing as opposed to total and per capita emissions • If not addressed, climate change is a threat to sustainable development (including progress in MDGs) in the country • South Africa has voluntarily set up measures to reduce greenhouse gas emissions through key flagship mitigation programmes and started promoting and implementing clean energy resources such as renewable energy and energy-efficient initiatives	• Increased implementation and enforcement of environmental regulatory measures is important to significantly contribute to reducing emissions • Current efforts aimed at driving the economy into a green economy and sustainable development state should be stepped up if current targets are to be met and/or to move the economy closer to achieving the targets • The country has committed to stringent carbon dioxide 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 • The commitment for support to South Africa's stringent emission targets is critical, for the country to achieve the set targets related to the MDG 7.2 indicators • Despite the unlikelihood of achieving the 2020 target, the country is implementing economy-wide programmes that will lead to significant reductions of GHG emissions for the period 2015–2020 (e.g. implementation of existing policies and relevant projects and programmes) • The South African government commits to establish an independent Climate Change Centre, in partnership with academic and other appropriate institutions
Indicator 7.3: Consumption of ozone-depleting substances (ODSs) (HCFCs, BCM, MeBr)	• South Africa has achieved great success in phasing out ODSs • South Africa acceded to the Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol on Substances that Deplete the Ozone Layer in 1990 • The rate of reduction of HCFCs slowed down in recent years; however, the country is implementing the HCFCs Phase-out Management Plan • Consumption of BCM has been phased out • South Africa is likely to achieve the target to phase out consumption of MeBr	• Implementing and enforcing measures aimed at reducing consumption of ODS has been crucial in the observed progress in the reduction of ODSs towards set targets • The post-2015 agenda on ODSs should focus on ensuring the complete phasing out of remaining ODSs (HCFCs and MeBr) through swift implementation of the HCFCs Phase-out Management Plan and Methyl Bromide Management Plan

SUMMARY OF FINDINGS, LESSONS LEARNT AND STRATEGIES FOR POST-2015 AGENDA		
INDICATORS	**KEY FINDINGS**	**LESSONS LEARNT AND STRATEGIES FOR POST-2015 AGENDA**
	• Generally, South Africa has managed to reduce consumption of ODSs by reducing imports of OD-associated substances	
Indicator 7.6: Proportion of terrestrial and marine areas protected	• The proportions of both terrestrial and marine protected areas increased significantly from 1994 to 2014 • Much of the increase in terrestrial and marine protected areas was reported post-2010 • Based on data reported on both terrestrial and marine protected areas, the country is unlikely to meet these indicators • However, evidence available from the Department of Environmental Affairs indicates that both indicators are likely to be achieved • The Department of Environmental Affairs has developed a national framework for an integrated approach among all stakeholders to manage biodiversity as well as various national policies and strategies to protect terrestrial and marine and coastal resources	• The high rates of increase in the proportions of protected terrestrial and marine areas post-2010 indicate a lot of implementation and enforcement measures to protect these areas • Frequent assessment or measurement programmes are important for the achievement of the targets for both terrestrial and marine protected areas • Stepping up current and future efforts to protect terrestrial and marine areas is critical for the achievement of the targets for these indicators
Indicator 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 latest national biodiversity assessment was conducted in 2011 • The species most threatened with extinction are freshwater fish (21%) and inland mammals (20%) • 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
Indicator 7.8: Proportion of population using an improved drinking water source	• South Africa has achieved the target of halving the proportion of population without water access by 2005, where 89.1% of households had access to an improved water supply • This includes all provinces contributing to the country target of 88.3% of households having access, or halving the backlog of 1996 • 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, disparities in provincial access need to be considered in future planning, with attention paid to infrastructure maintenance • The unpacking of the water stability indicator has highlighted the need to address the big picture of water services where life cycle costing of water services comes into play	• Going beyond 2015, South Africa has embraced the reliability indicator into its processes (MTSF 2014–19) by setting a target of 90% access to reliable and sustainable water services, and is focusing on improving this indicator in the 27 district municipalities (i.e. rural areas) • The post-2015 agenda should focus on providing water services that embrace sustainability into the definition of water services • There is also a need to ensure consistency in the provision of water services by adopting a common understanding and interpretation of the definition of access to basic services by the various provincial authorities, including functional

SUMMARY OF FINDINGS, LESSONS LEARNT AND STRATEGIES FOR POST-2015 AGENDA		
INDICATORS	**KEY FINDINGS**	**LESSONS LEARNT AND STRATEGIES FOR POST-2015 AGENDA**
		infrastructure for reliable access to water services in the country. Access to infrastructure does not imply access to water services, unless the infrastructures are functional. • According to UN-Water (2014), lessons from the MDGs show that a thematically broader, more detailed and context-specific framework for water, beyond the issues of water supply and sanitation, is called for in the post-2015 development agenda
Indicator 7.9: Proportion of population using an improved sanitation facility	• In 2011, South Africa achieved the target of halving the 1996 backlog for access to an improved sanitation facility, with 75.2% of households having access to an improved sanitation facility in 2012 • Individually, all provinces also achieved their respective sanitation targets, contributing to the achievement of the national target	• Dealing with appropriate technologies that can serve as an acceptable temporary solution for informal settlements remains a challenge • The slow pace towards achieving the global target of improved sanitation seems to be a global challenge and the UN is urging countries to put in place drastic measures to address that going forward (WHO and UNICEF, 2012; WHO and UNICEF, 2014) • Further, the UN acknowledges that given the progress to date, there will be a gap globally in the MDG sanitation target by over half a billion people (WHO and UNICEF, 2014; UNECA, 2015)

12. ANNEXURE B: DOMESTICATED INDICATORS – SUMMARY OF FINDINGS, LESSONS LEARNT AND STRATEGIES FOR POST-2015 AGENDA

Table 36: Domesticated indicators – Summary of findings, lessons learnt and strategies for post-2015 agenda

SUMMARY OF FINDINGS, LESSONS LEARNT AND STRATEGIES FOR POST-2015 AGENDA		
INDICATORS	**KEY FINDINGS**	**LESSONS LEARNT AND STRATEGIES FOR POST-2015 AGENDA**
DMI 1: Proportion of natural habitat	• The proportion of natural areas decreased by 4.13% between 1994 and 2013 • There have been substantial increases in land-use changes that contribute to natural habitat loss (e.g. urban areas increased by 365.88% and mining areas increased by 30.77% from 1994 to 2014) • 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 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 • Implementation and enforcement of environmental regulations that protect natural habitats is important to reduce loss of these resources
DMI 2: Ecosystem threat status	• Ecosystem threat status and protection levels are the two headline indicators assessed in the 2011 national biodiversity assessment • The most critically endangered and vulnerable ecosystems are the estuarine (79%), wetlands (48%) and river (26%) ecosystems • The least threatened ecosystems is the terrestrial (60%), estuarine (57%) and marine and coastal habitat (53%) ecosystems • South Africa has achieved the target of having a list of protected or threatened ecosystems by 2011 • South Africa has put in place various policies and strategies aimed at protecting terrestrial and marine resources and progress has been made in mainstreaming biodiversity into different production sector	• South Africa has achieved the target of having a list of protected or threatened ecosystems by 2011 • It is critical to step up efforts in implementation and enforcement of current and future policies and strategies to protect terrestrial and marine and coastal resources
DMI 3: Percentage of permitted landfill sites (Decrease in number of unlicensed waste disposal sites)	• The target of having all 341 designated landfills licensed has been achieved in the 2014/2015 financial year • In 2015, a total of 332 out of 341 or 92% landfills have been licensed	• The South African government has achieved the target for licensing the 341 landfills by 2014/2015 • However, there is a need to strengthen consultations with local municipalities to ensure efficient coordination of relevant

SUMMARY OF FINDINGS, LESSONS LEARNT AND STRATEGIES FOR POST-2015 AGENDA		
INDICATORS	**KEY FINDINGS**	**LESSONS LEARNT AND STRATEGIES FOR POST-2015 AGENDA**
		data on identified landfills, as such is crucial for future interventions. The disparities between the 2013 reported achievement for the indicators show that not all data was utilised in the 2013 report
DMIs 5, 6 & 7: Proportion of land area covered by natural forests; savannah woodland and Albany thicket	• The recent National Land Cover assessment was only released in 2005 and there has not been any assessment after that; hence, the figures are reported for 2005 only • Indigenous forests constitute about 0.4% of the land surface in South Africa and contain resources valued for biodiversity, ecotourism, non-timber forest products, and medicine • Evidence of increases in land-use changes reported under DMI 1 (especially urbanisation, agriculture and mining) is a threat to natural forests • South Africa has put in place several interventions to ensure sustainable forest management	• It is critical to protect natural forest areas from further development through the various policies and strategies put in place by the Department of Agriculture, Forestry and Fisheries and its partners • Guidelines on property development have been developed and should be strictly implemented going forward and post-2015 • Overall implementation and enforcement of current and future policies and strategies to natural forests, savannah woodlands and Albany thicket
DMI 8: 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 pulp mills, sawmills and factories that process the raw materials • Commercial plantations have a crucial role in biodiversity conservation (important habitats of fauna and flora) and carbon sequestration • At national level, the proportion of land area under commercial plantations decreased by 1.89% between 2009 and 2012 • Mpumalanga has the highest proportions of land area covered by commercial plantations, followed by KwaZulu-Natal, Eastern Cape, Western Cape, Limpopo and North West	• Commercial plantations have multiple roles that include economic benefits, biodiversity conservation, carbon sequestration, habitat for fauna and flora, etc. • Afforestation and re-afforestation efforts driven by the Department of Agriculture, Forestry and Fisheries should be increased in the post-2015 agenda • Overall, protecting natural forests, savannah woodlands and commercial plantations from destruction from land-use changes through various policies and strategies by the Department of Agriculture, Forestry and Fisheries (including various stakeholders) should be strictly implemented post-2015
DMI 9: Proportion of households with access to electricity	• In line with the National Development Plan[75] (NDP), the target is to reach universal access by 2025 in which 90% households will have access from grid technologies and 10% from non-grid technologies • Using the GHS data for 2002 to 2013, there has been an increase in access to electricity from 77.1% to 84.5% • This gives an indication that the 90% grid technologies target by 2025 is feasible • However, disparities in provincial access need to be considered in future planning, with attention paid to infrastructure maintenance	• 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

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[75] The Department of Energy revised the target of access to electricity from the 92% recorded in the 2013 report to the universal access of 90% grid and 10% non-grid in line with the NDP Vision 2030. Therefore, the 2015 report only refers to the universal target.

SUMMARY OF FINDINGS, LESSONS LEARNT AND STRATEGIES FOR POST-2015 AGENDA		
INDICATORS	**KEY FINDINGS**	**LESSONS LEARNT AND STRATEGIES FOR POST-2015 AGENDA**
		• Growing urbanisation presents challenges for access to electricity and other services in urban areas. • Informal settlements: most of these areas have not been proclaimed, and it is therefore difficult for the government to electrify areas that are not proclaimed, since there is no assurance that these settlements will not be moved/relocated to other areas • In rural areas, the main challenges include lack of infrastructure, topography, scattered settlements and households
DMI 10: Proportion of population using solid fuels as primary source of energy: cooking	• The use of solid fuels (coal, firewood and dung) for cooking has been declining over time, as traced by various national surveys in South Africa • Using the census data, the proportion of households using solid fuels for cooking declined from 27.8% in 1996 to 13.5% in 2011. The decline is further supported by the GHS data from 22.6% in 2002 to 11.0% in 2013 • This could be attributed to improvement in the use of access to better energy sources, implying that those households may now have access to grid electricity for cooking or adopted better and/or cleaner technologies, which is an improvement towards achieving the universal energy target stated earlier • The relatively higher proportion of households in some provinces like Limpopo (over 44% in 2013), and Eastern Cape and Mpumalanga (over 20%) are indications that those households are facing challenges, either due to income or just lack of access • At the provincial level, some households recorded increases in the use of solid fuels around 2007 and 2008, which can be attributed to the global economic meltdown, forcing poor households to resort to solid fuels for cooking	• Ensuring affordable access and productive use of the relatively cleaner sources of energy, particularly among poor households, should be central to the 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 have not been proclaimed and it is therefore difficult for the government to electrify areas that are not proclaimed, since there is no assurance that these settlements will not be moved/relocated to other areas • In rural areas, the main challenges include lack of infrastructure, topography, scattered settlements and households
DMI 11: Proportion of population using solid fuels as primary source of energy: heating	• The trend of solid fuels for heating has also been declining between 1996 and 2013 • This is a good sign, provided households are adopting better and cleaner technologies for heating • As was the case of solid fuels for cooking, again some households recorded increases in the use of solid fuels around 2007 and 2008, which can be attributed to the global economic meltdown, forcing poor households to resort to solid fuels for cooking	• 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 and internal migration among others, present challenges for access to electricity and other services in urban areas • Informal settlements: most of these areas have not been proclaimed and it is therefore difficult for the government to

SUMMARY OF FINDINGS, LESSONS LEARNT AND STRATEGIES FOR POST-2015 AGENDA		
INDICATORS	**KEY FINDINGS**	**LESSONS LEARNT AND STRATEGIES FOR POST-2015 AGENDA**
		electrify areas that are not proclaimed, since there is no assurance that these settlements will not be moved/relocated to other areas • In rural areas, the main challenges include lack of infrastructure, topography, scattered settlements and households
DMI 12: Number of households in informal settlements upgraded with access to basic services and secure tenure	• The target of improving the lives of 400 000 households living in informal settlements upgraded with access to basic services has been met • By 2014, a total of 447 480 (or 111.7%) households had access to basic services, which is an indication of exceeding the target	• Improving the lives of 400 000 households in informal settlements requires a lot more initiatives at 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 • Nevertheless, ensuring that over 400 000 households in informal settlements have access to basic services is a significant achievement for South Africa • However, exceeding this target on its own is not enough as it encompasses the other targets under this indicator, which need to be monitored closely. Service delivery protests in informal settlements are becoming major issues affecting sustainability of services in those areas. Therefore, local government planners and policymakers need to include such issues in their long-term planning and provide the necessary resources in their Integrated Development Plans (IDPs)
DMI 13: Stability of water supply	• Data on instability of water supply, or the number of reported water interruptions experienced at national level shows a modest increase over the review period • The proportion of households who reported interruptions over the 12 months before the survey increased from 23.1% in 2009 to 25.9% in 2013, with a modest decline (22.8%) in 2011 • This paints a different picture, given the proportion of the population with access to improved water sources (MDG 7.8), where over 90% of households have access • The stability indicator takes into consideration the level and reliability of infrastructure, which also reflects the level of access across the different provinces (and between urban and rural areas) as indicated earlier	• 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 water infrastructure, while the service may not be accessible • The findings should guide the South African government on the provision and maintenance of water services infrastructure, to ensure functionality during its useful life

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