



**SOUTH AFRICA'S REVIEW REPORT
FOR THE SIXTEENTH SESSION OF THE UNITED
NATIONS COMMISSION ON SUSTAINABLE
DEVELOPMENT (CSD-16)**

March 2008

TABLE OF CONTENTS

SECTION	PAGE
1	INTRODUCTION 1
2	BACKGROUND TO THE THEMATIC AREAS IN SOUTH AFRICA..... 2
3	KEY ISSUES FOR REPORTING 4
4	AGRICULTURE AND RURAL DEVELOPMENT 6
4.1	Enhancing food security 6
4.1.1	Progress 6
4.1.2	Challenges and opportunities..... 8
4.2	Providing a conducive environment for increasing agricultural productivity and economic returns 10
4.2.1	Progress 10
4.2.2	Challenges and opportunities..... 12
4.3	Reducing poverty through rural development 12
4.3.1	Progress 12
4.3.2	Challenges and opportunities..... 14
4.4	Reducing the environmental impact of agricultural production 15
4.4.1	Progress 15
4.4.2	Challenges and opportunities..... 17
4.5	Improving access to international agricultural markets 17
4.5.1	Progress 17
4.5.2	Challenges and opportunities..... 18
5	DROUGHT AND DESERTIFICATION 19
5.1	Incorporating desertification into strategic planning 19
5.1.1	Progress 19
5.1.2	Challenges and opportunities..... 21
5.2	Research and information generation and dissemination to combat desertification and drought..... 22
5.2.1	Progress 22
5.2.2	Challenges and opportunities..... 23
6	LAND 24
6.1	Inclusive land use planning to ensure equitable land rights 24
6.1.1	Progress 24
6.1.2	Challenges and opportunities..... 28
7	INTEGRATED WATER RESOURCE MANAGEMENT 31
7.1	Implementing policies, plans and programmes for integrated water resource management 31
7.1.1	Progress 31
7.1.2	Challenges and opportunities..... 35
7.2	Technologies for alternative water supply 36
7.2.1	Progress 36
7.2.2	Challenges and opportunities..... 37
7.3	Managing water resources in the context of extreme events 37
7.3.1	Progress 37
7.3.2	Challenges and opportunities..... 38
7.4	Information generation and dissemination 38
7.4.1	Progress 38

	7.4.2	Challenges and opportunities.....	39
8		INTEGRATED MEANS FOR IMPLEMENTATION	46
	8.1	Institutional arrangements.....	46
	8.2	Finance	46
	8.3	Technical Assistance/ Transfer	46
	8.4	Capacity Building	47
9		AFRICA.....	47
	9.1	NEPAD.....	47
	9.1.1	Implementing measures to ensure success.....	47
	9.2	Sustainable Development in Africa	50
10		CONCLUSION.....	55
11		BIBLIOGRAPHY	56
		APPENDIX 3: IWRM QUESTIONNAIRE	63
		REPORTING ON JPOI TARGET ON.....	63
		INTEGRATED WATER RESOURCES MANAGEMENT AND WATER EFFICIENCY PLANS BY 2005	63

TABLES IN THIS DOCUMENT

Table 1:	Challenges and opportunities for land reform in South Africa.....	30
Table 2:	South Africa's contribution to meeting the targets of Chapter II of the Johannesburg Plan of Implementation.....	40
Table 3:	Sanitation Review	42
Table 4:	South Africa's contribution to meeting the targets of Chapter IV of the Johannesburg Plan of Implementation.....	44
Table 5:	South Africa's contribution to meeting the targets of Chapter VIII of the Johannesburg Plan of Implementation.....	51

APPENDICES

Appendix 1	Analysis of progress in terms of key Agenda 21 and JPOI issues
Appendix 2	Bilateral S&T cooperation in Africa
Appendix 3	IWRM Questionnaire

ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
ADMP	Agricultural Drought Management Plan
AGIS	Agricultural Geo-referenced Information System
AMCOW	African Ministerial Council on Water
AMCOST	African Ministerial Council for Science and Technology
APRM	African Peer Review Mechanism
ARC-ISCW	Agricultural Research Council-Institute for Soil, Climate and Water
ASGISA	Accelerated Shared Growth Initiative
ASPIS	African Scholarship Programme for Innovation Studies
AU	African Union
CARICOM	Caribbean Community
CASP	Comprehensive Agricultural Support Programme
CBNRM	Community Based Natural Resource Management
CLARA	Communal Land Rights Act, No. 11 of 2004
CMA	Catchment Management Areas
CMS	Catchment Management Strategy
CSD	United Nations Commission on Sustainable Development
CSIR	Centre for Scientific and Industrial Research
DANIDA	Danish International Development Agency
DEAT	Department of Environmental Affairs and Tourism
DFA	Department of Foreign Affairs
DLA	Department Land Affairs
DME	Department of Minerals and Energy
DMP	Disaster Management Plan
DoA	Department of Agriculture
DoE	Department of Education
DoH	Department of Health
DoT	Department of Transport
DPLG	Land Affairs, Provincial and Local Government
DRC	Democratic Republic of Congo
DSD	Social Development
DST	Department of Science and Technology
DTI	Department of Trade and Industry
DWAF	Department of Water Affairs and Forestry
EBSST	Electricity Basic Support Services Tariff Strategy
EU	European Union
EPWP	Expanded Public Works Programme
FETWater	Framework Programme for Research, Education and Training in Water
FOCAC	Forum on China-Africa Co-operation
GDP	Gross Domestic Product
GEF	Global Environmental Facility
GIS	Geographic Information Systems
GM	Global Mechanism
GMO	Genetically Modified Organism
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit
HIV	Human Immuno Virus
IAM	Infrastructure Assessment Management

ICT	Information and Communication Technology
IDP	Integrated Development Plan
IFSS	Integrated Food Security Strategy
IKS	Indigenous Knowledge System
IMF	International Monetary Fund
ISRDP	Integrated Sustainable Rural development Programme
IWRM	Integrated Water Resource Management
JPOI	Johannesburg Plan of Implementation
LA	Local Authorities
LADA	SA South African Land Degradation Assessment in Drylands
LRAD	Land Redistribution and Agricultural Development
MAFISA	Micro Agricultural Financial Institutional Scheme of South Africa
MERS	Micro-Economic Reform Strategy
MDG	Millennium Development Goals
MRC	Medical Research Council
NAP	National Action Programme
NAASP	New Asian African Strategic Partnership
NBSAP	National Biodiversity Strategy and Action Plan
NCB	National Coordinating Body
NCCRS	National Climate Change Response Strategy
NECSA	South African Nuclear Energy Corporation
NEMA	National Environmental Management Act, No. 107 of 1998
NEPAD	New Partnership for Africa's Development
NIKSO	National Indigenous Knowledge Systems Office
NISSA	NEPAD Implementation Strategy of South Africa
NWRS	National Water Resource Strategy
ODA	Overseas Development Assistance
OECD	Organisation for Economic Cooperation and Development
ORASECOM	Orange-Senqu River Commission
OUZIT	Okavango Upper Zambezi International Tourism Spatial Development Initiative
PEFOL	Panel of Experts on Foreign Ownership of Land
PFIA21	Programme for Further Implementation of Agenda 21
PRSP's	Poverty Reduction Strategy Papers
RETOSA	Regional Tourism Organisation of Southern Africa
RISDP	SADC Regional Indicative Strategic Development Programme
SADC	South Africa Development Community
SARD	Sustainable Agriculture and Rural Development
SDI	Spatial Development Initiatives
SLAG	Settlement Land Acquisition Grant
STAP	Scientific and Technical Advisory Panel
StatsSA	Statistics South Africa
TFCDA	Transfrontier Conservation and Development Area
UN	United Nations
UNCCD	United Nations Convention to Combat Desertification
UNCED	United Nations Conference on Environment and Development
UNDP	United Nations Development Programme
UNEP	United Nations Environmental Programme
WAR	Water Allocation Reform
WARMS	Water Authorisation and Registration Management System
WEF	World Economic Forum

WHO	World Health Organisation
WISA	Water Institute of Southern Africa
WMA	Water Management Area
WRC	Water Research Council
WSDP	Water Services Development Plan
WSSD	World Summit on Sustainable Development
WTO	World Trade Organisation

1 INTRODUCTION

The United Nations Commission on Sustainable Development (CSD) was formed in December 1992 as the high-level commission on sustainable development in the United Nations (UN) and with the mandate of ensuring effective implementation of the outcomes of the United Nations Conference on Environment and Development (UNCED) in 1992 – Agenda 21. As such, CSD provides a forum for considering issues relating to the three core elements of sustainable development (namely economic, social and environmental). In 2002, the World Summit on Sustainable Development (WSSD) – as captured in the Johannesburg Plan of Implementation (JPOI) – agreed the need to enhance the role of the CSD to focus on “reviewing and monitoring progress in the implementation of Agenda 21 and fostering coherence of implementation, initiatives and partnerships”.

The CSD is organised in two-year “implementation cycles”, with each cycle focusing on thematic clusters alongside cross-sectoral issues. This approach was outlined in a multi-year programme of work (2004-2017) adopted at CSD-11 in 2003. Each cycle is comprised of a Review Year and a Policy Year. The review year evaluates progress made in implementing sustainable development goals and identifying obstacles and constraints while the policy year decides on measures to speed up the implementation and to mobilise action to overcome these obstacles and constraints.

The third implementation cycle of the CSD will start with the review session at the CSD-16 and continues with the policy session at CSD-17 to be held in 2009. The CSD-16 will take place on the 5th to the 16th of May 2008 at the UN Headquarters in New York. According to the Commission’s multi-year programme of work, the third cycle focuses on six main thematic issues of agriculture, desertification, drought, land, rural development and “Africa”. As in each cycle, the thematic cluster of issues will be addressed in an integrated manner, taking into account the economic, social and environmental dimensions of sustainable development. In addition, a review will be undertaken in 2008 of the implementation of WSSD target on Integrated Water Resources Management (IWRM).

The United Nations Division for Economic and Social Affairs (UNDESA) has requested national focal points to submit country reports as a contribution to the Secretary General’s Report which is expected to set a platform for engagement during the main CSD-16 session. The reports are required to review a country’s progress in the implementation of the Agenda 21, PFIA21 and JPOI targets relating to specific themes selected over the designated two-year period.

The previous report which was prepared for CSD-14 focussed on issues relating to the thematic cluster of Industrial Development, Climate Change, Air Pollution and Energy for Sustainable Development. The CSD-16 review session will focus on the thematic cluster of Agriculture and Rural Development, Land, Drought and Desertification and Integrated Water Resource Management. In addition, the report considers South Africa’s role in Africa in the implementation of Chapter VIII of the JPOI *Sustainable Development for Africa*. In reviewing this theme, the report provides:

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- An overview of the issues;
 - National progress in the implementation of JPOI targets;
 - Constraints and challenges in the implementation progress;
 - Case studies and good practices guidance; and
 - Means of implementation.

The report has been prepared by South Africa's focal point, the National Department of Environmental Affairs and Tourism (DEAT) who undertook an intensive and trans-sectoral intergovernmental process that involved the national Departments of Agriculture (DoA), Water Affairs and Forestry (DWAF), Social Development (DSD), Science and Technology (DST), Health (DoH), Land Affairs (DLA), Provincial and Local Government (DPLG), Minerals and Energy (DME), Foreign Affairs (DFA), Education (DoE), Transport (DoT), and Trade and Industry (DTI). In addition, the report has included verbal and written submissions from major groups including non-governmental organisations and business.

It is on this basis that DEAT are confident that this report reflects the views and opinions of an inclusive group of stakeholders in South Africa who represent the themes from all three perspectives of sustainable development. The important role of stakeholders in providing information and constructive comment on all version of this report is gratefully acknowledged.

2 BACKGROUND TO THE THEMATIC AREAS IN SOUTH AFRICA

South Africa occupies the southern most part of the African continent. It stretches latitudinally from 22° to 35° South and longitudinally 17° to 33° East, with a surface area of approximately 1 219 090 km². It is estimated that close to 18% of South Africa's natural land cover is transformed, mainly by cultivation (10.46%), degradation (4.47%), urban land use (1.51%) and forestry (1.41%). Land in South Africa is increasingly in demand due to a growing population and a growing demand for food, space and other resources.

South Africa's agricultural land supports a dual economy, comprised of a well developed commercial sector and a predominantly subsistence oriented sector in the rural areas. Commercial agricultural activities range from intensive crop production and mixed farming to cattle ranching and sheep farming in the more arid regions. Primary commercial agriculture contributes approximately 2.8% to South Africa's GDP, with 8% of the total South African exports comprising of agricultural goods (SA yearbook, 2007). However, its greatest influence on the South African economy is its upstream and downstream linkages to the manufacturing and marketing sectors.

Major factors limiting the agricultural sector are water availability and the increasing degradation of the land. Research has indicated that South Africa's land is degraded naturally by both water and wind, however human induced degradation, which includes urbanisation, industrialisation and mining, is posing a

larger impact on land resources. Presently, formerly semi-autonomous areas are considered to contain the majority of soil degradation and soil loss in South Africa. This is attributed to the fact that 28% (13 million) of the population of South Africa is crowded into these areas. Increasing access to land for historically disadvantaged persons is both a socially and politically sensitive issue. Land reform in South Africa is currently being implemented with a lack of post settlement support (both financial and training), thereby resulting in increased incidence of land degradation in newly transferred land. The programmes are being implemented taking gender issues into account.

Soil degradation causes increased incidence of desertification. Over 0.7 million hectares of land is degraded and left bare by soil erosion, however over 91% of South Africa comprises of drylands making it susceptible to desertification. This reduces the lands ability to withstand climate variations, which in turn impacts on a community's and ecosystems ability to adapt to climate change. Climate change scenarios provide projected impacts for South Africa; these include increased temperatures, greater rainfall variability and increased incidence of extreme events (e.g. drought) and form a significant threat to all of the thematic areas. South Africa is developing a Disaster Management Plan (DMP) to ensure it is prepared for these events and is in the process of implementing its National Climate Change Response Strategy (NCCRS) (2004).

Drought is defined as a period during which the water availability to plants and people is less than expected under normal climatic conditions. In 2004 South Africa declared six provinces disaster zones with as many as four million South Africans at risk of food shortages due to a drought. During that time South Africa experienced three types of drought, these being; reduction in water resources, significant reduction in the rainfall, and reduced crop yields and livestock losses. Drought impacts on African development as it influences the potential for food self-sufficiency and increases vulnerability of the poor. Although South Africa has seen an increase in food production, droughts have resulted in an increase in agricultural imports from R372.5 million in 1975 to R23,000 million in 2003 (South African Environment Outlook, 2006).

Currently South Africa's most limiting natural resource is water. Most of the 22 major rivers have been dammed or have water abstraction schemes in place, to supply the growing number of industry, agricultural, and domestic users. The average annual rainfall is approximately 500mm (considerably less than the world average of 860mm). Water is also unevenly distributed across the country with approximately 80% of the country's runoff being towards the east. Groundwater research has indicated that there are few groundwater aquifers resulting in low river flow. Water resources are further stressed by the increasing pollutants, which include industrial effluents, domestic and commercial sewage, acid mine drainage, agricultural runoff, and litter.

South Africa is experiencing many of the problems that are evident throughout Africa. Increasing poverty, degradation of the environment and loss/ overutilisation of the natural resources, is placing pressure on the continent as a whole. New Partnership for Africa's Development (NEPAD) was established in 2001 to promote poverty alleviation within the continent, and strive to build partnerships between African countries to promote African development. South Africa is a key proponent of the ideals of NEPAD.

3 KEY ISSUES FOR REPORTING

Agenda 21 (and the PFIA21 and the JPOI were reviewed in relation to the Thematic areas with specific reference to Chapter II (*Poverty eradication*), Chapter III (*Changing unsustainable patterns of consumption and production*), Chapter IV (*Protecting and Managing the Natural Resource Base of Development*), Chapter VI (*Health and sustainable development*) and Chapter VII (*Sustainable development for Africa*) of JPOI. These are summarised below. The information in parenthesis indicates the corresponding JPOI reference. Appendix 1 provides an analysis of specific progress made in terms of the objectives defined below.

- Agriculture and Rural Development
 - Integrating rural development strategies into Poverty Reduction Strategy Papers (PRSPs) or other economic/development strategies and the empowerment of local rural communities, especially those living in poverty and their organizations (Chapter II, 7c),
 - Supporting main driving forces for economic growth and social development in rural areas (e.g. agriculture, small and medium enterprise development, employment and other non-agricultural sector) as well as improving access to basic services and infrastructure in rural areas (e.g. adequate shelter, education, employment opportunities, health, sanitation, energy) (Chapter II, 9);
 - Food security and sustainable agriculture taking account of community-based and indigenous approaches to sustainable food production (Chapter II, 7 (a), (j) & (k); Chapter IV, 40 (a), (p) & (r);
 - Early warning systems for monitoring food supply and household supply and demand and household access to food, weather insurance schemes for farmers and agriculture related disaster management programmes (Chapter II, 7(l));
 - Application of risk-mapping, remote sensing, agro-methodological modelling, integrated multi-disciplinary crop-forecasting techniques, and computerised food supply/ demand analysis
 - Enhancing agricultural productivity and farmer's incomes (Chapter II, 7(k));
 - Diversification of agricultural production systems (Chapter IV, 40(g));
 - Agrarian reform and measures to secure equitable access to land by both genders (Chapter II, 7(d), (e) & (h); Chapter IV, 40(f);
 - Programmes to improve soil fertility, environmentally sound agricultural pest control and improvements in water management in agriculture (Chapter IV, 40(o));
 - Infrastructure development to enhance distribution to markets ((Chapter II, 7(i) & (k), Chapter IV, 40 (l)); and
 - Bilateral, regional and multilateral agreements relating to liberalisation of agricultural product markets with specific focus on support for other African countries to improve regional trade and economic integration between African countries (Chapter VIII, 67(c) & (d)).
- Drought and Desertification

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- Strategic planning frameworks for the protection and sustainable management of natural resources in deserts and areas affected by desertification, their integration into national development strategies and/or action plans (Chapter IV, 41(d));
 - Improved use of and local access to climate and weather information, forecasts, early warning and information networking to combat desertification and drought, including database development on desertification, land degradation and human condition, incorporating physical and socio-economic parameters and desertification and land degradation impact assessment (Chapter II, 7(l) & Chapter IV, 41(e));
 - Research and dissemination on ways of reducing water loss from soil, on increasing water absorption capacities of soil and on water harvesting technologies in desertification affected areas (Chapter VIII, 65(a); Chapter X, 109(b)), Chapter IV, 26 (a) & (e));
 - Policies and practices to arrest land degradation and to restore land and soil productivity (Chapter IV, 41 & Chapter VIII, 63);
 - Application of techniques and methodologies for assessing the potential adverse effects of climate change and other mechanisms of land degradation (Chapter IV, 41 (d) & Chapter IV, 41(c));
 - Drought relief schemes (rehabilitation and recovery programmes) and their integration into national and regional development planning including afforestation and reforestation programmes using drought resistant, fast growing species (Chapter VIII, 62(n); and
 - Legislative measures and policy incentives to encourage forestry development in drylands (Chapter IV, 41).
- Land
 - Planning and development of land resources involving all land stakeholders, including indigenous and landless population; strengthened role of land administration systems so as to guarantee land use rights and legal security of tenure (Chapter IV, 40 (h) & (i)).
- Integrated Water Resource Management (IWRM)
 - Develop and implement national/ regional strategies, plans and programmes with regard to integrated river basin, watershed and ground water management (Chapter IV, 26(a)) & Chapter VII, 66 (b));
 - Programmes for mitigating the effects of extreme water-related events(Chapter IV, 26(d));
 - Diffusion of technology and capacity-building for non-conventional water resources and conservation technologies to developing countries and regions facing water scarcity (Chapter IV, 26(e) & 28);
 - Programmes for energy-efficient sustainable and cost-effective desalination of sea-water, water recycling and water harvesting(Chapter IV, 26(f));
 - Establishment of public-private partnerships and other forms of partnerships that give priority to the needs of the poor (Chapter IV, 26(g)); and
 - Support regional, sub-regional and capacities for data collection and processing and for planning, research, monitoring, assessment and enforcement (Chapter IV, 27 & Chapter VIII, 66 (c)).

4 AGRICULTURE AND RURAL DEVELOPMENT

In order to report efficiently on the objectives outlined in Chapter 3, they have been clustered into logical groupings and structured into , as outlined below and discussed accordingly in the sections that follow:

- Enhancing food security
 - Food security and sustainable agriculture taking account of community-based and indigenous approaches to sustainable food production (Chapter II, 7 (a), (j) & (k); Chapter IV, 40 (a), (p) & (r);
 - Early warning systems for monitoring food supply and household supply and demand and household access to food, weather insurance schemes for farmers and agriculture related disaster management programmes (Chapter II, 7(l));
 - Application of risk-mapping, remote sensing, agro-methodological modelling, integrated multi-disciplinary crop-forecasting techniques, and computerised food supply/ demand analysis
- Providing a conducive environment for agricultural production and economic returns
 - Enhancing agricultural productivity and farmer's incomes (Chapter II, 7(k));
 - Diversification of agricultural production systems (Chapter IV, 40(l));
 - Agrarian reform and measures to secure equitable access to land by both genders (Chapter II, 7(d) & (h); Chapter IV, 40(f);
 - Infrastructure development to enhance distribution to markets ((Chapter II, 7(i) & (k));
- Reducing poverty through rural development
 - Integrating rural development strategies into Poverty Reduction Strategies (PRSPs) or other economic/development strategies and the empowerment of local rural communities, especially those living in poverty and their organizations(Chapter II, 7c),
 - Supporting main driving forces for economic growth and social development in rural areas (e.g. agriculture, small and medium enterprise development, employment and other non-agricultural sector) as well as improving access to basic services and infrastructure in rural areas (e.g. adequate shelter, education, employment opportunities, health, sanitation, energy) ;
- Reducing the environmental impact of agricultural production
 - Programmes to improve soil fertility, environmentally sound agricultural pest control and improvements in water management in agriculture (Chapter IV, 40(o) & (b));
- Improving access to international agricultural markets
 - Bilateral, regional and multilateral agreements relating to liberalisation of agricultural product markets with specific focus on support for other African countries to improve regional trade and economic integration between African countries (Chapter VIII, 67(c) & (d)).

4.1 Enhancing food security

4.1.1 Progress

The current food security challenge in South Africa consists of two dimensions: the first tries to maintain and increase South Africa's ability to meet its national food requirements, and the second seeks to eliminate inequalities and poverty amongst households that is made apparent by inadequate and unstable food production, lack of purchasing power, poor nutritional status and weak institutional support networks and disaster management systems. **Food security is seen as a Constitutional Right in South Africa and**

guarantees its citizens the right to have access to sufficient food and water, and that “the state must by legislation and other measures, within its available resources, avail to progressive realisation of the right to sufficient food.” Despite national food security, many South African households experience continued food insecurity and malnutrition and unemployment. According to the most recent data from Statistics South Africa (StatsSA) (for 2004), approximately 14.3 million South Africans are vulnerable to food insecurity. In response, the Government of South Africa is implementing the **Integrated Food Security Strategy (IFSS)** of 2002. The Strategy ensures that food insecure groups in the country:

- Gain access to agricultural productive resources;
- Gain access to income and job opportunities to enhance their power to purchase food;
- Are empowered to eat nutritious and safe food;
- Have access to state provided relief measures that may be short to medium-term and on a sustained basis, depending on the nature of given interventions particularly where the group is unable to access sufficient food because of disability or extreme destitute conditions; and
- There is a continuous monitoring and evaluation of food security and nutrition status in the country through the Food Insecurity and Vulnerability Information System Management (FIVISM).

The maintenance of timely, accurate and relevant agricultural economic and statistical information enables the production of a **monthly Food Security Bulletin which provides an early warning system that enables Government to implement proactive and timely interventions in response to impending food shortages** (Please see Box 1). The Government of South Africa’s Agricultural **Economic Research and Analysis programme** provides timely, accurate and relevant agricultural economic and statistical information on a quarterly basis to inform decision making on production by all participants in agricultural sector. Information provided includes, monthly crop forecasts and the quarterly livestock estimates; the quarterly Monitoring Report on the economic performance of the sector; the quarterly Agricultural Economic Review and Forecast Report, the monthly Food Security Bulletin, the quarterly Crops and Markets Report; weekly Price Watch; the annual Africa Economic Review and Outlook, and the Economic Review of South African Agriculture. In order to improve the accuracy of crop estimates, a new producer independent crop estimate system was developed and implemented in four provinces and the preliminary results are promising.

Box 1: Agricultural Geo-referenced Information System (AGIS, www.agis.agric.za).

AGIS is the official portal for the dissemination of data for the DoA. The vision of AGIS is: "Making South Africa's Agricultural information available on the Internet". AGIS went live in 1999 and was officially launched at the World Summit on Sustainable Development in 2002. AGIS contains a large amount of information related to the environment.

- The Food Insecurity and Vulnerability system assists decision makers to decide how and where to intervene to assist communities that are vulnerable. The Food Insecurity Vulnerability

Information Mapping System (FIVIMS) pilot project was completed in the area of Sekhukhune.

- Infotoons are aimed to assist those who do not have agricultural education to start gardens and grow vegetables.
- Environmental indicators that are available on AGIS include:
 - Grazing capacity
 - Land capability Soils susceptible to wind erosion Soils susceptible to water erosion Potential for soil regeneration if badly eroded. Soils with poor or impeded drainage Soils susceptible to acidification

South Africa's food security is susceptible to drought, therefore, the **Agricultural Drought Management Plan (ADMP)** outlines a vision and strategic objectives pertaining to drought risk management, the implementation guidelines of the plan as well as the challenges faced within the new dispensation and new approach to drought risk management. In addition, drought management will be enhanced through the implementation of water storage, water transfer and hydropower infrastructure required for agriculture, agro-processing, tourism and forestry projects. The Government of South Africa has committed R9 million for the design of such infrastructure. Government has a leading role in promoting the development and maintenance of successful, profitable and sustainable irrigation farming. Irrigated agriculture contributes over 30% of the gross value of the country's crop production. It is essential for South Africa's fruit industry, which is amongst the most important export commodities, with about 90% of the country's fruit and wine being produced under irrigation.

South Africa has an active Genetically Modified Organism (GMO) industry in which the country's genetically modified crop comprises 1.4 million hectares in the 2006/07 season in which 1 million hectares were planted to maize and the remainder comprising of soybean and cotton. South Africa's position is strongly contested by a number of watchdog organisations. South Africa's **Genetically Modified Organism Act (No 15 of 1997)** looks to enhance GMO productivity so as to enhance food security especially in light of global environmental change. In this regard, with agricultural security as a cornerstone, South Africa has embarked on a significant biotechnology research initiative and in 2001 published its National Biotechnology Strategy, with the objectives of promoting biotechnology research and development (R&D) and marketing of biotechnology products in South Africa (please see Section 4.4).

4.1.2 Challenges and opportunities

Climate change

The projected impacts of climate change, i.e. increasing occurrence and magnitude of natural disasters such as drought, floods, poses serious constraints and challenges for Sustainable Agriculture and Rural Development (SARD). A recent study undertaken for maize indicates that some of the marginal western areas may become unsuitable for production under current management strategies while some of the eastern production areas may remain unchanged or increase production levels.

Specialty crops grown in specific environmentally favourable areas may also be at risk as both rainfall and temperature effects may cause changes in areas suitable for specialized production.

South Africa's Climate Change Response strategy suggests that adaptation measures should include:

- **Changes in agricultural management practices**, such as a change in planting dates, row spacing, planting density and cultivar choice, and other measures, which would counteract the effects of limited moisture. Irrigation is currently used to supplement low levels of precipitation but this could become very expensive and less effective, giving conditions of increasing aridity. This would require a phasing out of irrigation farming and a relocation of the production areas eastwards, if practicable. To reduce the risk of famine, marginal production areas could be kept economically viable by, for example, decreasing input costs or planting drought resistant crops, such as sorghum or millet. Alternatively, land use could be changed to grazing. Many current agricultural practices, such as conservation tilling, furrow dyking, terracing, contouring, and planting vegetation as windbreaks, protect fields from water and wind erosion and assist in retaining moisture by reducing evaporation and increasing water infiltration. Management practices that reduce dependence on irrigation would reduce water consumption without reducing crop yields, and would allow for greater resiliency in adapting to future climate changes. Such methods include water harvesting. The reduced use of some pesticides could directly reduce greenhouse gas emissions and also reduce water pollution, thus contributing to both adaptation and mitigation. Agricultural management practices that recognise drought as part of a highly variable climate, rather than a natural disaster, should be encouraged. Farmers should be provided with information on climatic conditions, and incentives should be given to those farmers who adopt sound practices for drought management, and therefore do not rely on drought relief funds. Land use planning can be used to identify trends in land use that would be advantageous in the event of climate change. Suitable measures could be incorporated in national agricultural policy.
- **A reduction of reliance on industrialised mono-cropping** and diversification of the range of crops cultivated will reduce vulnerability as well as creating jobs and potentially reducing irrigation needs. Development of more and better heat and drought resistant crops would help fulfil current and future national food demand by improving production efficiencies in marginal areas, with immediate effect.
- **Maintain a variety of seed types in seed banks** that preserve biological diversity and provide farmers with an opportunity to make informed choices could be used to counteract the effects of climate change, maintain food security and establish possibilities for profitable specialisation. This should be adopted as a priority and needs to maximise the role of local communities.

Institutional structures

While South Africa has made significant institutional progress in becoming a food secure nation, however, there remain a number of challenges that need to be overcome, including:

- Mobilising civil society to implement agricultural projects and processes;

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- Poor integration between government departments in terms of project and programme implementation; and
 - Lack of institutional capacity to implement existing programmes.

The implementation of capacity building initiatives is critical in ensuring that these challenges are overcome.

4.2 Providing a conducive environment for increasing agricultural productivity and economic returns

4.2.1 Progress

One of the more critical elements in sustaining food production is to improve the living conditions of rural communities by assisting especially small farmers in enhancing agricultural productivity and their incomes and to provide access to land. Micro Agricultural Financial Institutions of South Africa (MAFISA) contributes to Governments overall commitments towards the social upliftment of people in their communities by benefiting both farm and non-farm beneficiaries such as farm workers, household producers, small-scale land owners, food garden producers, rural and micro-entrepreneurs.

The Farmer Support Programme provides support to promote economic and market development to sustain adequate on-farm incomes which promotes stability, competitiveness, growth and transformation in the agricultural sector. This initiative has been augmented with the **Comprehensive Agricultural Support Programme (CASP)** which is a conditional grant raised by Central Government to supplement the Provincial funding to ensure accelerated delivery of support services to farming communities. CASP was incepted in the 2004/2005 financial year focusing on six key pillars, including: On & Off Farm Infrastructure, Training & Capacity Building, Technical Advisory & Assistance, Marketing & Business Development, Information & Knowledge Management, and Financing Mechanisms.

Grant funding provided during the initial implementation year was R200 million (approx \$28m) and has grown to R415million in the present financial year. At the beginning of the programme, the main focus was on the farm infrastructure support as it was identified as the main activity needing support due to the downfall of the majority of land reform projects. Presently the grant conditions focus on the key priority areas of 70% land reform projects, 10% food security, 10% training and capacity building, 5% animal health and 5% marketing. The total number of CASP projects that will be implemented in all provinces is 845 targeting a total of 60 000 beneficiaries.

In line with the **Micro-Economic Reform Strategy (MERS)**, and other government Departments (e.g. Trade & Industry, Agriculture, and Environmental Affairs & Tourism), South Africa through Department of Science and Technology has developed a focus on the agro-processing in support of the Accelerated Shared Growth Initiative (ASGISA). This initiative aims to “promote opportunities for participation of marginalized communities in economic activity, and improve the quality of livelihoods of the poor” (DST,

2007). The identified core technologies in agro-processing with a focus on establishing larger interventions include Aquaculture (fresh water and marine), Essential Oils, and bio-prospecting on Indigenous Medicinal Plants. Agro-processing is one of the key sectors identified by government as among the sectors “that demonstrate strong potential for growth, employment creation and value addition”. Within this portfolio the Government of South Africa through is focusing on the production of finished value-added products in areas where the remote location does not present a logistical or financial disadvantage, and to establish sustainable (post-funding) Small, Micro and Medium Enterprises (SMME’s). The products tend to be high-value goods in a defined growing (or import substitution) market where the natural resources of the area given a competitive advantage (DST, 2007).

Whilst transferring technologies with a potential for massive roll-out, the sustainable livelihoods initiative builds capacity through skills development and training. The technologies are at pilot demonstration of mature beneficiation (value-addition) and affordable technologies that require technology-based processes where strong markets already exist. This Portfolio sources from the National System of Innovation (NSI) and transfers mature beneficiation (value-addition) technologies, with a view of establishing sustainable SMME’s, wealth and job opportunities in the areas where technology and skills transfer has occurred. These have been identified as having an established fledgling market but require a technology-based intervention to expand and to contribute to the establishment of new industries (wealth creation), and Black Economic Empowerment (BEE) opportunities. This guarantees sustainability of SMME’s, post incubation. It does not focus on R&D but on adaptation of technology solutions on the ground (DST, 2007).

The Government of South Africa acknowledges that commonage land is land that historically has public character and should be retained for this purpose. Thus Government seeks to ensure that existing commonage land needed by local poor residents for agricultural purposes on a leasehold basis, to supplement their household income, is made available by:

- Encouraging or assisting municipalities to develop conditions which enable poor residents to access existing commonage;
- Encouraging and on request assisting provincial government to develop appropriate provincial policy, legislative framework and administrating systems for municipal commonage; and
- Providing funds to enable resource poor municipalities to acquire land to create or extend the commonage for the purpose of establishing agricultural lease schemes.

In addition to providing farmer support, the **Settlement Land Acquisition Grant (SLAG)** provides grant through which poor landless black South Africans could form a group to apply to buy and develop land. By the end of year 2000, the Ministry of Agriculture and Land Affairs had approved 484 projects, transferring 780,407 hectares of land to 55,383 people, with 14% headed by women. SLAG ended in year 2000. Government achieved its goal of improving emerging farmer's access to land by managing a total of 542 projects and assisting 89,000 beneficiaries, and sustained participation in agriculture by establishing 84 agricultural co-operatives in the nine provinces. Outreach support is aimed at improving the agricultural

capability of emerging farmers as well as Community-based and indigenous approaches to sustainable food production. In addition though, the DST implemented an Indigenous Knowledge System (IKS) with priority areas dealing with seed conservation and sacred seed; post harvest; animal husbandry, land management and utilisation; water conservation; and horticulture.

Support has been provided to ensure that agricultural products find their way to markets efficiently. The **Accelerated Rural Roads Upgrade Programme** by the Department of Transport is a supporting programme that provides infrastructure for rural development. The Agricultural Trade and Business Development programme by the DoA promotes the development of agribusinesses, competitive markets and freer international trade environment. In its goal of disseminating information, 42,200 agricultural marketing information booklets were distributed to all provinces and some municipalities. These booklets are available in all official languages spoken in South Africa.

4.2.2 Challenges and opportunities

The agricultural sector is a major employer in South Africa yet provides a decreasing contribution to National Gross Domestic Product (GDP). This has come about through the persisting dry conditions, high costs that affect both the commercial and small-scale farmer and ongoing land conversion from agricultural to other uses.

The provision of rural infrastructure has, in theory, enabled small-scale farmers to have better access to markets. In practice, however, limited access to markets especially in terms of marketing-mechanisms and funding for small scale farmers continue to limit economic growth. The private sector is not actively or formally engaged in Sustainable Agriculture and Rural Development (SARD) which prevents significant economic returns from that sector. In order to implement effective public-private partnerships, for a need to be established so as to create an enabling environment for private sector involvement.

As with food security, climate change presents a significant future challenge to maintaining agricultural production in South Africa.

4.3 Reducing poverty through rural development

4.3.1 Progress

The 2001 Census data indicated that approximately three quarters of all migration in the past decade was movement from rural into urban areas, with Gauteng and the Western Cape provinces gaining and the Eastern Cape and Limpopo decreasing in population numbers. The consequence of this is a boost in urban poverty as cities are unable to cope with the influx of poor people seeking better economic opportunities. The World Bank has suggested that promoting agricultural and rural development is crucial to pro-poor growth in most developing countries.

The **Poverty Reduction Strategy and Plan** in South Africa created new forms of policy development which places poverty reduction strategies as part of the activities of all three spheres of government (i.e. national, provincial and local government), with close consultation with representatives of civil society. This shift from a macro-economic policy to a more local market-based solution has created an environment in South African rural development, which strives for both poverty eradication and self sufficient development for rural communities.

The Department of Social Development has developed a set of provincial programmes which are being implemented to improve the health care, education, water and sanitation and other social welfare services in an attempt to alleviate poverty in both rural and urban areas. These services include financial support in the form of pensions, child grants, and disability grants, as well as facilitating access to training and health services. The Department of Water Affairs and Forestry together with the Department of Provincial and Local Government are managing infrastructure programme that are implemented through local government institutions for the provision of water and sanitation services. Roads, storm-water drainage, and electricity reticulation are also programmes targeting development of the rural areas to enable better access to economic opportunities for the rural poor. **Where geographically feasible, urban municipalities are assisting rural municipalities in their local functions of water provision, sanitation services, roads and infrastructure, storm water drainage, refuse removal and electricity reticulation.** In many cases, however, the lack of capacity (administrative and institutional) to ensure the implementation of these programmes, and associated monitoring of service delivery, has resulted in incomplete service delivery initiatives and an under-expenditure of allocated funding

South Africa is also fully committed to achieving the Millennium Development Goals with respect to poverty reduction, water supply, and access to safe sanitation. Targets have been set by government to achieve universal access to water supply and sanitation well before 2015. The greatest challenge for achieving these objectives are in the rural areas, but significant funding and resources have been allocated at national, regional and local levels to work towards meeting the supply backlogs by 2008 for water and 2010 for sanitation. Programmes are being implemented on a large scale, creating significant employment opportunities in the rural areas, and providing access to basic health infrastructure.

As a critical step in reducing poverty, especially in rural areas, South Africa has also initiated its **Expanded Public Works Programme (EPWP)**. Under the EPWP, all government departments, provinces, municipalities and parastatals involved in infrastructure provision are required to take steps to increase the employment creation resulting from their infrastructure programmes, where technically and economically feasible. Although government will take this approach with all of its infrastructure projects, there will be a particular focus on relatively simple infrastructure which is particularly amenable to labour-intensive methods, and where the most additional work opportunities can be created (i.e. rural roads, local municipal roads, water and sewer pipelines and stormwater drainage). There are huge backlogs in these types of infrastructure in historically-disadvantaged rural areas, where unemployment is particularly high. Using prioritisation processes and the IDPs, provinces and municipalities should identify those projects that could absorb a lot of local labour and design their execution using labour-intensive methods. In addition small

local enterprises for the provision of materials and services associated with the infrastructure projects are being established and supported. These include brick making, manufacture of toilet pedestals, prefabricated panels for toilet construction, welding enterprises, health and hygiene educators, and many small associated businesses.

In 2002-2003 government offered 50kWh of free electricity to households for a trial period of one year, as part of its Electricity Basic Support Services Tariff Strategy (EBSST). Research indicated that as communities realised there was a continual supply of electricity, electricity consumption increased with the associated increase in the number of electrical appliances in households. It was suggested that by supplying poorer households with free basic electricity, alternative energy choices became distorted. **South Africa must assess alternative energy sources available, in order to decrease the high costs associated with the supplying of electricity to a society with increasing demands.** South Africa must also focus on other social services necessary for rural development.

In South Africa vulnerable communities/persons have the opportunity to apply for the **social assistance grant programme and/or various poverty relief programmes**. These programmes provide both poverty reduction and poverty prevention strategies, and are part of the governments largest poverty reduction programme. As of September 2003, 5.6 million South Africans were receiving social assistance. This programme has focused on the most poverty stricken peoples in rural communities and therefore aims to promote rural development through the provision of a basic financial means to support local economic development. However, recent poverty statistics have not been analysed due to the lack of capacity within the Department of Social Development, and hence progress in reducing the number of people living in poverty has not been able to be accurately assessed. South Africa must ensure that information is available to assess these projects and programmes being implemented to reduce poverty in the country.

Most rural development programmes which aim to ensure income generation, implement additional objectives such as waste management and training, erecting useful community infrastructure or protection of water resources. These programmes have therefore shifted from poverty reduction to poverty relief and their aim is twofold, i.e. to promote self reliance and to eradicate poverty. Another initiative aimed at reducing impacts on the environment from rural development efforts is the “Basa Njengo Magogo” technology. This technology is focused on rural communities being self reliant through the use of fuel wood whilst still promoting benefits to the environment, as it reduces coal use and associated smoke, provides heat quicker and is safer to implement.

4.3.2 Challenges and opportunities

South Africa has implemented several successful rural poverty relief initiatives; however, poverty continues to strain rural development efforts. These programmes have been hampered by the social acceptability of some of the alternative (more appropriate) infrastructure that has been implemented and the lack of suitable education as to technological suitability. The situation is further exacerbated by the high incidence of HIV and AIDS and high rates of population growth and urbanization.

South Africa's bid to achieve food and energy security, rural development efforts have been augmented by the potential development of a rural biofuels programme that is under consideration in South Africa. The ongoing process of evaluating the suitability of biofuels in the country is faced with the food security issues and is some way from resolution.

4.4 Reducing the environmental impact of agricultural production

4.4.1 Progress

Land degradation, water scarcity and pest control are the most significant environmental issues facing agriculture in South Africa. The **Sustainable Resources Management and Use programme develops, implements and monitors policies on managing and using land and water resources in agriculture**. At present the underground water atlas has been developed and data from more than 210 000 boreholes on the national geo-hydrology database was captured. This data can be used at a provincial level to plan ground water development for stock watering purposes and irrigation. The National Regulatory Services programme by the DoA develops and monitors risk management policies for controlling animal and plant diseases and for food safety. The DWAF has committed R9 million to design the water storage, water transfer and hydropower infrastructure required for agriculture, agro-processing, tourism and forestry projects.

Land degradation is costing several billion Rands each year in wasted production, treatment of degraded land, nutrient loss, research and costs related to the silting up of waterways. The National DoA's special strategy for sustaining the natural resource base is the **Landcare programme**. There is a central concern in the National LandCare Programme of South Africa to implement projects that place people at "the starting point, the centre and the end of each development intervention ... and constructing appropriate interventions or technology around their mode of production, cultural patterns, needs and potential". On this basis, Landcare is a community based and government supported approach to the sustainable management and use of agricultural natural resources. The overall goal of Landcare is to optimize productivity and the sustainability of natural resources so as to result in greater productivity, food security, job creation and a better quality of life. The Landcare approach is as follows:

- **Community-Based Natural Resource** Management in which stakeholders from different backgrounds, share common problems and devise solutions. It is this grass roots approach that is driving the Landcare programme and has been a major reason for its success;
- **Partnerships** between the public, community and private sector;
- **Local Action** through local economic development and employment creation in which local Landcare groups have access to technical information and advice;
- **Food Security** including include greater productivity, food security and poverty relief;

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- **Integrated & Innovative Approaches** to natural resource management in which the causes of environmental and resource degradation are addressed rather than the symptoms.
 - **Redress** through assisting resource-poor communities from rural areas and addressing the needs of former disadvantaged groups.

Landcare themes are grouped into two key areas, namely:

- Focussed Investment;
 - **Watercare:** The Watercare theme specially targets the Limpopo Province, because of water shortages and the importance of water for irrigation. This theme is establishing a framework for managing land and preventing the silting of irrigation dams. Watercare also works in partnership with the community to develop action plans for managing and restoring irrigation schemes. The rehabilitation of irrigation schemes increases water supply and household food security. Furthermore, Watercare promotes the development of techniques for water resource management, and encourages opportunities for training in this area.
 - **Veldcare:** Veldcare entails the promotion of best grazing systems and erosion prevention practices to improve production. This theme aims to develop and maintain agricultural activities in accordance with the principles of ecologically sustainable development within the Northwest Province. It also ensures that economic and social development opportunities are realized by improving grazing areas and maintaining viable grazing areas throughout rural communities.
 - **Soilcare:** This theme encourages rural farmers in KwaZulu-Natal, Eastern Cape and Mpumalanga to build innovative structures to combat soil erosion. This includes reducing the depletion of soil fertility and soil acidity. Through Soilcare, sustainable agricultural production systems are introduced, such as diversification, management of inputs, and conservation tillage.
 - **Juniorcare:** Our children will reap the benefits of our Landcare efforts. Their involvement is an investment for the future. The objectives of Junior Landcare are to empower previously disadvantaged youth with regard to training in facilitation and leadership skills. This includes the promotion of food security at homes and at schools, awareness in sustainable agriculture, stimulating the formation of youth clubs, and small projects that aim to promote other components of Landcare. Juniorcare addresses the needs of youth, in an integrated and interdisciplinary way.
- Small Community Grants
 - This theme improves the ability of resource-poor communities to manage land, water and related vegetation in a sustainable and self-reliant manner. It includes elements from all the above-mentioned themes.

In 2005, the DoA published a **Draft Biosafety Policy** for public comment. The Policy was contested on the basis that it provided a limited perspective on the risks associated with GMO technologies. The Policy is currently being redrafted so as to align various applicable bodies of legislation such as the National Environmental Management Act (No 107 of 1998) and the **GMO Act No 15 of 1997**. The revised Policy aims to provide mechanisms for risk assessments, environmental and social impact assessments to reduce

the threat of GMO's to the environment or human, animal and plant health. In addition, the policy will aim to harmonise biosafety regulations and approaches across the southern African region.

The significant growth in the organic agriculture sector in South Africa is further evidence of the country's commitment to environmentally sustainable food production. The Organic Freedom Project (OFP) is a not-for-profit membership-based organization incorporated in South Africa with the aim of promoting job creation and sustainable trade in southern Africa through facilitating the development of fully integrated value chains in the Organic industry.

4.4.2 Challenges and opportunities

South Africa suffers from capacity shortages in the implementation of the Landcare and biosafety programmes with the result that the problem of land degradation is ongoing with a particular impact felt in terms of loss of soil resources.

Furthermore, there is limited public understanding of the impacts of poor agricultural practice on the environment.

There remains no agreement on GMO practices in South Africa particularly with regard to biosafety issues. The problem is exacerbated in that there are limited levels of research and scientific capacity in the country to assess impacts and/or track progress.

4.5 Improving access to international agricultural markets

4.5.1 Progress

The objective of the **International Trade Development** programmes by the Department of Trade and Industry (DTI) is to increase market access for South African exports in targeted countries, economic integration with the region and the African continent and efficient trade administration and facilitation. The Department of Agriculture is closely co-operating with the DTI in this regard. The Agricultural Trade and Business Development programme of the DoA promotes the development of agribusinesses, competitive markets, improved market access and a freer and fairer international trading environment.. At the regional level, the Southern African Customs Union (SACU, in existence since 1910) agreement has been renegotiated, and the SADC Trade Protocol was concluded amongst 14 countries in the Southern African region.

South Africa has concluded a Trade, Development and Co-operation Agreement (TDCA) with the European Union. This Agreement includes a Free Trade Agreement (FTA). Negotiations are currently underway to review the TDCA in conjunction with the Economic Partnership Agreements that the EU is negotiating with its African, Caribbean and Pacific partners. Further, SACU has concluded a FTA with the

European Free Trade Association (EFTA) and is in the process of concluding a trade agreement with MERCUSOR. Further trade agreements are being considered.

South Africa is an active participant in the negotiations of the Doha Development Round of the WTO. In the agricultural negotiations, South Africa is participating in various alliances to strengthen its own position and that of the region to ensure that the focus of the Round remains on development.

Various other initiatives are implemented to ensure a broader and more effective participation in international trade. These initiatives include co-operation in various fields with other countries and various international organisations and institutions (Box 2).

Box 2: Rooibos tea and community based tourism knowledge exchange in Northern Cape

The Heiveld Co-operative has given small-scale farmers access to lucrative export market. Collective processing and marketing has cut costs and increased profitability. Incomes of farmers and farm workers have risen. Conversion by all farmers to organic production has further enhanced incomes and had a positive effect on the environment. A farmer study group has helped develop farmer capacity to address constraining factors relating to sustainable rooibos tea production and natural resource management. In addition, the farmer participatory research on sustainable harvesting of wild tea has created a synergy between indigenous and scientific knowledge.

4.5.2 Challenges and opportunities

Ongoing trade distortions through production and trade distorting domestic support of agricultural products in developed countries present a major obstacle to South African agricultural export growth and competitiveness. High access barriers in the form of tariffs, sanitary and phytosanitary (SPS) barriers as well as other non-tariff barriers further place a constraint on export growth. For South Africa, the sub region and the African continent, the lack of capacity in the SPS field is an increasing concern.

For South Africa, the region and the continent a successful, ambitious and balanced conclusion of the Doha Development Round is of crucial importance. Furthermore, South Africa should seek to maximise opportunities on the African continent.

5 DROUGHT AND DESERTIFICATION

In order to report efficiently on the objectives outlined in Chapter 3, they have been clustered into logical groupings and structured into , as outlined below and discussed accordingly in the sections that follow:

- Incorporating desertification into strategic planning
 - Strategic planning frameworks for the protection and sustainable management of natural resources in deserts and areas affected by desertification, their integration into national development strategies and/or action plans (Chapter IV, 41(d))
 - Drought relief schemes (rehabilitation and recovery programmes) and their integration into national and regional development planning including afforestation and reforestation programmes using drought resistant, fast growing species (Chapter IV, 41 (d) & Chapter VIII, 62(n))
 - Policies and practices to arrest land degradation and to restore land and soil productivity (Chapter IV, 41 & Chapter VIII, 63)
 - Legislative measures and policy incentives to encourage forestry development in drylands (Chapter IV, 41)
 - Application of techniques and methodologies for assessing the potential adverse effects of climate change and other mechanisms of land degradation (Chapter IV, 41(c))
- Research and information generation and dissemination to combat desertification and drought
 - Improved use of and local access to climate and weather information, forecasts, early warning and information networking to combat desertification and drought, including database development on desertification, land degradation and human condition, incorporating physical and socio-economic parameters and desertification and land degradation impact assessment (Chapter II, 7(l) & Chapter IV, 41(e))
 - Research and dissemination on ways of reducing water loss from soil, on increasing water absorption capacities of soil and on water harvesting technologies in desertification affected areas (Chapter IV, 26 (a) & (e); Chapter VIII, 65(a); Chapter X, 109(b))

5.1 Incorporating desertification into strategic planning

5.1.1 Progress

On 16 January 2004, the president of the Republic of South Africa declared six provinces disaster zones with as many as four million South Africans at risk of food shortages due to a drought. This resulted in the assessment of the local drought policy which revealed significant weaknesses in the government's ability to respond timely and effectively to droughts. The response was the development of a **DMP**, which would be more comprehensive and aim to protect vulnerable rural communities and their economy against the impacts of drought.

The vision of the DMP was to develop an **effective, integrated risk and disaster management system** for plant and animal husbandry and price and income systems. This would entail:

- Creating a system of information management, monitoring and evaluation of drought situations, thereby detecting biophysical and social vulnerabilities and suggesting counter actions;

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- Compile drought indicator maps to provide updated information on the drought situation;
 - Compile regular vegetation/ rangeland indicator maps to allow for pro-active strategic decision-making;
 - Implement and improve early warning systems; and
 - Establish and implement programmes for risk reduction including preparedness, mitigation, response, recovery and rehabilitation.

The DMP is in its early stages of implementation so it is not known whether the programme will realise its goals. To-date, approximately R250 million has been allocated by the DoA to ensuring drought relief programmes are implemented in South Africa.

In its initial response, South Africa has ratified the United Nations Convention to Combat Desertification (UNCCD) and in response to its requirement for appropriate planning frameworks implemented its National Action Programme (NAP) which was approved by Cabinet in 2005. The government of South Africa is spending significant amount of resources in the fight against desertification through implementation of the NAP. The **NAP focuses on forming linkages between sustainable development and efforts to combat desertification and mitigate the effects of drought**. The NAP seeks to harmonise a number of programmes and plans aimed at promoting sustainable land management in South Africa, Government policies and strategies that include desertification and drought mitigation aim to :

- Protect land resources (e.g. the National Forests Act, National Biodiversity Strategy and Action Plan (NBSAP), Protected Areas and Transfrontier Conservation and Development Area (TFCDA));
- Restore land resources (National Waste Management Strategy and the rehabilitation of redundant mining facilities (Energy and Mining);
- Ensure sustainable land resource use (Community Based Natural Resource Management (CBNRM), Integrated Rural Development Strategy, Expanded Public Works Programme, Spatial Development Initiatives (SDI's), Land Reform);
- The Landcare Programme (please see Section 4.4); and
- Promote awareness training and mitigation strategies (Disaster Management, Education)

Mainstreaming the implementation of NAP requires the development of the **National Coordination Mechanism**. This mechanism will be integrated into the governmental structures to ensure that NAP remains one of the government's central programmes. At a local level, Integrated Development Plans of most municipalities do not sufficiently integrate environmental management or sustainable land management as a priority concern. Despite this the South African NAP clearly states that it entails working in partnership with national, provincial and local players. Supporting a 'bottom-up approach' to land management will promote UNCCD priorities of combating desertification.

In order for effective monitoring of drought and desertification status, government is required to undergo further research in terms of evaluating the current status and potential changes over the years. A vulnerability index has been developed for specific areas in South Africa, but further development and constant monitoring is required to ensure sustainable land use management is implemented country-wide.

The NAP is further supported through South Africa's National Greening Strategy which aims to "green" urban and rural areas through forestry development. Although not specified specifically for combating the spread of desertification, it could play an important role in this effort. This effort is supported by DWAF's Woodland Strategy Framework which emphasises the importance of woodlands within different regions of the country and at the national scale.

The Desert Margin Programme arising from the NAP has been especially successful in combating desertification (Box 3).

Box 3: Desert Margins Programme: Research and Dissemination

The strategy of the Desert Margin Programme:

- Analyzes the root causes of dryland degradation;
- Documents indigenous knowledge of sustainable practices;
- Develops more sustainable practices;
- Helps governments design policies that encourage sustainable practices;
- Enhances South African institutional capacities for land degradation research and outreach;
- Facilitates the sharing of technologies, knowledge and information;
- Forecasts possible climate change scenarios for land use planning; and
- Focuses on benchmarks.

In the Suid Bokkeveld Landcare Project, located in the Northern Cape, 13 farms collaborated to form a community cooperation project aimed at poverty eradication. The project involved reducing soil erosion in lands where rooibos grew, and required the support and development of local people to build capacity and educate them on how to manage their natural resources. The project has been very successful with many subsidiary projects being developed. These include three women groups successfully and profitably producing cotton bags for the packaging of rooibos tea for the local and export market and developing an eco-tourism facility for tourists, scientists and local and visiting community groups.

5.1.2 Challenges and opportunities

South Africa is grappling with the challenges of the cross-sectoral nature of land issues. By not effectively implementing a participatory approach to land management, drought and desertification remains a problem. On this basis, it is self-evident that to combat the spread of deserts, South Africa needs to ensure the implementation of NAP efficiently and effectively. The NAP is in its early stages of implementation and has; therefore, many of the programmes that are due to be undertaken have not been fully undertaken. At this early stage, however, a number of challenges have been identified and include:

- The lack of awareness and knowledge around desertification and land degradation. This includes the risks and costs involved and the management options available. In order to overcome this challenge,

programmes need to be formulated so as to disseminate information to local communities and institutions.

- In all spheres of government, among service providers, and in civil society there are deficiencies in the capacity needed to implement the NAP. This is evident at the local level where competent people are often depleted by recruitment to provincial or national entities.
- Greater exchange of information must be developed between international sources of information and South Africa experiences.
- Greater scientific knowledge is required regarding combating and degradation. This knowledge needs to be multidisciplinary, with adequate balance between natural and social science. It is important that knowledge development can be used relevant to policy and practice.
- Land managers and those who develop land management plans need to understand the chain of causality that leads to locally observed land degradation. This will ensure that the best choice and locally relevant management strategy is implemented to reverse degradation and prevent further degradation.
- More information is required concerning the full extent of land degradation costs and consequences.

5.2 Research and information generation and dissemination to combat desertification and drought

5.2.1 Progress

Both the **DMP and NAP strive to ensure that communities are involved in the monitoring of resource status**, thereby promoting local level resource management. Training is required to ensure communities are implementing the best land practise relevant to their situation. This is an important to ensuring effective land use management at local levels.

The **Disaster Management Act, No. 57 of 2002**, calls for the Minister of Agriculture/ MEC's to place a notice in the Government Gazette/ Provincial Gazette, thereby declaring a national/ provincial state of disaster. This will ensure that government is involved in assisting farmers during disasters, however, farmers need to implement mitigation methods in order to qualify for government assistance. This strategy is key to promoting compliance with the government plan for managing drought and improving disaster mitigation.

The **South African Land Degradation Assessment in Drylands (LADA SA)** project was launched during a 1st Stakeholder Workshop held at Agricultural Research Council-Institute for Soil, Climate and Water (ARC-ISCW) in Pretoria on 13-14 March, 2007. LADA SA forms part of a global LADA programme, funded by the Global Environmental Fund (GEF) and implemented by UNEP. The FAO is

executing the programme and in South Africa, one of 6 pilot countries participating, DoA is the National Coordinator and ARC-ISCW the implementing agency.

The principal objectives of LADA are to develop and implement strategies, methods and tools to assess, quantify and analyze the nature, extent, severity and impacts of land degradation on ecosystems, watersheds and river basins as well as carbon sequestration in drylands, at a range of spatial and temporal scales; and to build national, regional and global assessment capacities to enable the design, planning and implementation of interventions to mitigate land degradation and to establish sustainable land use and management practices.

There is ongoing research, undertaken by the University of Cape Town that evaluates the impact of climate change on land degradation in South Africa. While providing useful academic information, there is no evidence of how the outcomes of that research have been specifically transferred into national policies and practices.

5.2.2 Challenges and opportunities

South Africa has an early warning system in place to forecast drought. This enables Government and communities to implement drought preparedness schemes. Additional measures have taken towards the improvement of capacity in weather forecasts at a daily level, to promote awareness and understanding of potential changes in climate which might impact local communities and farmers. During 2005, training workshops provided officers with the skills necessary to interpret weather and climate information. These officers are now able to advise local communities on the best possible solution to cropping, and potential climate and weather information for specific areas. Given that climate change has the potential to exacerbate the situation of drought and desertification, climatic information is vital to ensure that government and civil society initiate programmes to adapt to climate change.

Furthermore, the high incidence of HIV and AIDS poses human and capital resource challenges in rural communities, thereby inhibiting the ability to address drought and desertification in South Africa.

In addition, assessment tools for land degradation are not implemented effectively. There are a number of reasons for this situation, including:

- Overcrowding by people and livestock on limited land that is highly susceptible to degradation;
- Lack of adequate capacity and skills within government departments and farming communities to ensure effective implementation of effective soil, water, pasture and livestock management

6 LAND

In order to report efficiently on the objectives outlined in Chapter 3, they have been clustered into logical groupings and structured into , as outlined below and discussed accordingly in the sections that follow:

- Inclusive land use planning to ensure equitable land rights
 - Planning and development of land resources involving all land stakeholders, including indigenous and landless population; strengthened role of land administration systems so as to guarantee land use rights and legal security of tenure (Chapter IV, 40(h)).

6.1 Inclusive land use planning to ensure equitable land rights

6.1.1 Progress

Land productivity is intricately linked to social, political and environmental issues and for this reason South Africa has implemented an integrated approach to sustainable land management. This is being implemented through a number of different programmes aimed at both resource management and socio economic development.

The Constitution of the Republic of South Africa, Act No. 108 of 1996, places a duty on government to ensure equitable land distribution among South Africans, thereby addressing the injustices and consequences of the racially segregated 1913 Land Act. The land and agricultural reform process promises to increase equity and job creation amongst South Africans, stimulating economic and social development.

As a result of the legacy of inequitable land distribution in South Africa, during the first decade of democracy and ongoing, there has been a strong focus on land reform delivered through restitution, tenure and redistribution. Considerable progress has been made in terms of putting legislation, policy, systems and procedures in place for land reform which is being implemented through three programs; namely restitution, tenure and redistribution.

- **Tenure Reform:** The tenure reform programme seeks to validate and to harmonise forms of land ownership that evolved during colonialism and apartheid. It is an attempt to redress the dual system of land tenure in which whites owned land as private property as opposed to communal land allocation among blacks. The majority of rural blacks lived and still live on communal land, registered as the property of the State under the erstwhile South African Development trust.
- **Restitution:** Land restitution forms the second pillar of the land reform programme. It aims to provide redress to victims of racial land dispossession and thus contribute to equitable redistribution of land in the country. The imbalances in land ownership were created by the apartheid policies and legislation of forced removals such as the infamous Natives Land Act, 1913 (Act No. 39 of 1913). The nature of restitution is determined by three broad categories of the effects of land dispossession - namely, dispossession leading to landlessness, inadequate compensation for the value of the property, erosion

of human dignity and hardships that cannot be measured in financial or material terms. Some communities, such as the Makuleke of the Kruger National Park, gained land rights in protected conservation areas through the restitution process and are developing tourism development strategies.

- **Redistribution:** Land redistribution was conceived as a means of opening up the productive land for residential and agricultural development. The national government set itself a target of redistributing 30% of the country's commercial agricultural land (about 24 million hectares) by 2014.

The initial targets were ambitious and key changes have occurred, thereby improving land delivery year by year. The following describes the development in each area.

During the period between 1995 and 1999 only 41 of 79 696 claims were settled under the **Restitution of Land Rights Act (No. 22 of 1994)**. This slow settlement of claims was attributed to the compulsory resolution of all land claims within the Land Claims Court. An amendment of the Restitution Act in 1999 gave powers to the Minister to accept the outcome of the negotiations process and settle the land claims through section 42D of the Act. This led to an exponential increase in the number of claims settled from 41 in 1999 to 75000 in 2008. The tenure programme has been the slowest and most difficult aspect of the South African land and agrarian reform programme to date. This is due to the complications that exist in the former homeland and communal area where communities and individuals reside on state land, and therefore have no security of tenure. The promulgation of the Communal Land Rights Act No 11 of 2004 (CLARA) on 14 July 2004, has assisted in the transfer of communal land (currently held by the state) to communities and individuals who reside on and have rights to that land. It is anticipated that this programme will provide security of tenure to just under 20 million people (DLA & DoA; 2005).

In 2001 the land redistribution program was improved making it more flexible, decentralised and broadening its target group to include emerging farmers. The redistribution programme includes three components, namely:

- Agricultural Development – to make land available for agricultural purposes;
- Settlement- to provide people with land for settlement purposes; and
- Non-agricultural enterprises- to provide people with land for non-agricultural purposes such as eco-tourism projects.

The flagship program of redistribution has been the **Land Redistribution and Agricultural Development sub-programme (LRAD)**; aimed at firstly transferring land to specific individuals and groups, and secondly improving peoples access to municipal and tribal land, primarily for grazing purposes. LRAD promotes:

- Black people (African, Coloured and Indians) increased access to agricultural land;
- A relief to congestion occurring in overcrowded former homeland areas;

- Improved nutrition and incomes for the rural poor;
- A way to address the legacy of past racial and gender discrimination;
- Structural change over the long term;
- Stimulate growth from agriculture;
- Stronger linkages between farm and off-farm income generating activities;
- Opportunities for young people who remain in rural areas;
- Beneficiaries to improve their economic and social well being
- More productive use of communal land; and
- Environmental sustainability of land and other natural resources.

It is evident that this programme is strongly geared towards achieving the JPOI targets and commitments. Three case studies in this regard are included in Box 4.

Box 4: Land reform case studies

- KwaZulu Natal: The Qedusizi/Besters initiative has established a bottom-up area-based land reform and enterprise development program in an area primarily engaged in beef production. The key stakeholders, the Department of Land Affairs (DLA), the Besters Farmers Association (BFA), and their farm workers have collaborated in identifying land and people to be settled and working with them to negotiate both the purchase of the land and establishing and implementing the resettlement model through the LRAD sub-programme. 199 *muzis* (extended family households)¹, representing 993 adult beneficiaries, a population of roughly 2,500 people in total, have acquired ownership of 14 farms (14728 ha in total). Mpumalanga The Noanesi community of Mbombela received their 296ha which has potential for a bush camp/ conference centre;
- Eastern Cape: Mkambati land claims falls under the Integrated Sustainable Rural development Programme (ISRDP) node of the O.R. Oliver Tambo District Municipality. The project restored 17 400 ha to the seven villages that make up the Mkambati Land Trust. The total cost of the project was R44.5 million. The restitution award is a combination of physical restoration, rights to a nature reserve and an eco-tourism project, and monetary compensation; and
- The Mosely project which is an LRAD farm situated in Barberton has 41 beneficiaries and the farm is 68 hectares in size. A Half a hectare greenhouse has been built. There are three boreholes operating in the farm from the previous owner.

In 2006, the Department initiated the Proactive Land Acquisition Strategy (PLAS) to contribute to the higher path of growth, employment and equity. The approach is primarily **pro-poor and its main advantages are:**

¹ A plot of land (*kraal*) including a number of separate but related extended family households common throughout Zulu settled land. The head of the *muzi* controls access to resources and manages social relations.

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- Accelerate the land redistribution process;
 - Ensure that the DLA can acquire land in the nodal areas and in the identified agricultural corridors and other areas of high agricultural potential to meet the objectives of ASGISA;
 - Improve the identification and selection of beneficiaries and the planning of land on which people would be settled; and
 - Ensure maximum productive use of land acquired.

More than 100 farms have been purchased for labour tenants, evicted farm workers and for some commercial farming purposes through this strategy since May 2006.

A **Panel of Experts on Foreign Ownership of Land (PEFOL)** was commissioned by the Minister of Agriculture and Land Affairs in 2004 to assist Government in understanding the extent of ownership of land in the country by citizens and foreigners, the legal and policy landscape, the policies and legislative framework in selected representative foreign countries on the matter; and to point to possible policy, regulatory and legal reforms for consideration by the Government..

The report was subsequently approved by cabinet but implementation of the recommendations has been delayed pending further research into the options in its findings.

In response to the limited progress made with regard to increasing access to land, the Department of Land Affairs has further proposed the implementation of an integrated approach to land management. Incorporated into this approach would be:

- Area Based Plans are proposed as the fundamental tool for the integration and alignment of land reform with the strategic priorities of the provinces, municipalities and other sectors. The Area Based Plans will be an integral part of the IDP, and will serve as a catalyst for land related developments at a Municipal level.
- The development of appropriate information systems (including land indicators, Geographic Information Systems (GIS) etc.)
- Capacity development initiatives;
- Participation of previously marginalised groups into decision-making; and
- The consideration of the impacts of climate change on land resources.

On land use planning, the country is working hard to address the apartheid spatial inequalities, improve land use decision making processes and provide technical support to Municipalities. To this end the Land Use Management Bill (LUMB) has been developed, which is intended to, amongst others, rationalise existing laws and systems which are inefficient and provide directive principles (equality, efficiency, etc)

and enhance co-ordination, commitment of resources, implementation and monitoring. Some aspects of the Bill are currently being piloted in Northern Cape and Limpopo Provinces.

The registration of title deeds plays a major role in supporting the implementation of land reform, housing and other development initiatives in the country. When there is a problem in the deeds registration environment, there are adverse effects in the overall economy. Land registration information supplied from the Deeds Registration System database plays a vital role during the preliminary investigative stages of any land delivery initiative. There are nine Deeds Registration offices in the country; a project for the digital registration and documentation of title deeds is currently being worked on.

The country is also providing national mapping, aerial photography and other imagery, integrated spatial reference frameworks and other geo-spatial information in support of the national infrastructure and sustainable development, in compliance with the Land Survey Act, 1997 (Act No. 8 of 1997). Furthermore, to provide professional and technical services in support of land reform and other public services. The provision of accurate, up to date and accessible maps and other geo-spatial information, imagery and an integrated spatial reference framework is very critical to enhance planning and monitoring of land reform, national infrastructure and sustainable development, nationally and regionally.

6.1.2 Challenges and opportunities

Significant progress has been made in South Africa with regard to land tenure issues in improving land productivity, while lesser progress has been made in terms of reducing the impacts of land degradation. As a possible consequence of the land tenure focus, limited progress has been made in:

- Putting in place stronger partnerships specifically with organs of civil society to accelerate the pace of land delivery to the land reform beneficiaries;
- Escalating land prices make it difficult for the beneficiaries of the land redistribution programme to acquire land on the open market. In addition, the willing buyer-willing seller principle is also problematic as the state becomes the only buyer in the market, which affects its bargaining power. The new regulatory measures (policy for land ceilings and land tax) will address this problem by empowering the state to intervene in the land market on behalf of landless and resourceless persons;
- Promoting women's equal access to and full participation in land decision-making; affecting new land rights and access to land and development opportunities;
- The outstanding restitution claims can be categorised as 'rural' claims and by implication mostly claims for restoration of rights in land. The nature of these claims are complex due to the number of role players involved, and claims are targeted at highly productive, capital intensive farms. Restoration of rights in land also require proper consideration of the sustainability of the projects in terms of post settlement support and sustainable development;

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- Planning and development of land resources and the development and use of land-use indicators and related monitoring systems.
 - Information systems and the use of GIS for integrated planning and management of land resources.
 - Implications of climate change on land resources.
 - Promoting women's equal access to and full participation in land decision-making; gender mainstreaming of all land policies and strategies.

The Department of Land Affairs has worked closely with the Department of Agriculture, both at the national level as well as the provincial level, in the development of the Land and Agrarian Reform Programme (LARP). This programme provides a new Framework for delivery and collaboration to accelerate the rate and sustainability of transformation through aligned and joint action by all involved stakeholders. It creates delivery paradigm for agricultural and other support services based on a "One-Stop Shop" concept of centres located close to farming and rural beneficiaries. LARP is project number 7 of the 24 Apex of Priorities of government, which priorities are aimed at fast tracking delivery towards the realisation of the Millennium development Goals (MDGs). The objectives of LARP include the following:

- a) Redistribute 5 million hectares of white-owned agricultural land to 10 000 new agricultural producers
- b) Increase Black entrepreneurs in the agribusiness industry by 10 %.
- c) Provide universal access to agricultural support services to the target groups.
- d) Increase agricultural production by 10-15% for the target groups, under the LETSEMA-ILIMA Campaign².
- e) Increase agricultural trade by 10-15% for the target groups.

By redistributing land, increasing tenure security and black entrepreneurship, improving access to support services, and increasing production and trade, LARP will directly contribute to the overall goals of the Agricultural Sector Plan, namely participation, global competitiveness and sustainability, and the objects and aims of White Paper on South African Land Policy.

² This campaign aims to bring about an increase in production by unlocking the potential of currently "dead" land and other assets, in particular in communal areas.

Table 1: Challenges and opportunities for land reform in South Africa

Land programme	Challenges
Restitution	<ul style="list-style-type: none"> • Capital to ensure sustainable development • Institutional problems and governance at the level of community property institutions • Exorbitant land prices, which makes land reform costly and unaffordable • Frivolous claims/ misrepresentations and community disputes • Ensure sustainable settlement of land and an integrated approach • Lack of business experience and post settlement support
Redistribution	<ul style="list-style-type: none"> • Exorbitant land prices • Failure of the Willing-buyer willing seller policy • Limited use of expropriation as a mechanism for land acquisition because it is a lengthy and tedious process; • Reform of land markets to create a level playing field for small and large scale farmers; • Limited private sector involvement
Land tenure	<ul style="list-style-type: none"> • Implementing the scale of the CLARA programme; • harmonisation of tenure legislation such as the Extension of Tenure Security Act, Prevention of Illegal Evictions and Occupation Act and the Labour Tenants Act; • Gender inequalities; • State-owned forests; • Mineral rights ownership.

Land degradation is a possible unintended consequence of the land reform process. Communal farmers are different to commercial farmers as they use animals for other functions such as ritual slaughter, bridal payments etc. For this reason higher densities exist on communal land resulting in increased degradation of land. These issues have been dealt with in Section 4.4 and 5.1.

The Department has worked closely with member states to establish a SADC Land Reform Facility; which seeks to coordinate and facilitate support for formulation of land and agrarian reform policy and legislation with special reference to resource mobilization and policy support, capacity building, research and information and communication. Some of the examples of areas of cooperation include the following; strengthen customary land boards/committees; strengthen lands registration/formalization systems; expansion of land surveying capacities; design pro-active land reform (land acquisition); design post-settlement support systems; land use plans (regional, district and village); and strengthen national land (reform) administration. Some short term projects will include; establish comprehensive land institutions directory; establish land experts database; SRSLRTSF website/specialized databases; annual consultative land conference; programme and project implementation design documents (land policy, information,

training); sharing existing available information; support implementation of submitted projects; design research agenda and “call” for proposals and; finalize detailed phased (5 year) plan.

7 INTEGRATED WATER RESOURCE MANAGEMENT

In order to report efficiently on the objectives outlined in Chapter 3, they have been clustered into logical groupings and structured into , as outlined below and discussed accordingly in the sections that follow:

- Implementing policies, plans and programmes for integrated water resource management
 - Develop and implement national/ regional strategies, plans and programmes with regard to integrated river basin, watershed and ground water management (Chapter IV, 26(a) & Chapter VII, 66 (b))
 - Establishment of public-private partnerships and other forms of partnerships that give priority to the needs of the poor (Chapter IV, 26(g))
- Technologies for alternative water supply
 - Diffusion of technology and capacity-building for non-conventional water resources and conservation technologies to developing countries and regions facing water scarcity (Chapter IV, 26(e) & 28)
 - Programmes for energy-efficient sustainable and cost-effective desalination of sea-water, water recycling and water harvesting(Chapter IV, 26(f))
- Managing water resources in the context of extreme events
 - Programmes for mitigating the effects of extreme water-related events(Chapter IV, 26(d))
- Information generation and dissemination
 - Support regional, sub-regional and capacities for data collection and processing and for planning, research, monitoring, assessment and enforcement (Chapter IV, 27 & Chapter VIII, 66 (c))

7.1 Implementing policies, plans and programmes for integrated water resource management

7.1.1 Progress

As a result of South Africa’s Reconstruction and Development Programme since the early 1990s, focusing on poverty eradication and social and economic development, together with fundamental shifts in the policy and legislation of various sectors in the country, including water, it was possible during the WSSD in Johannesburg during 2002 to indicate that some of the millennium goals in respect of water services for 2015 have almost been met at that stage (the water supply goal was met in 2004). South Africa’s national water policies and legislation fully subscribe to protecting and managing the natural resource base of economic and social development as contained in Chapter IV of the JPOI. The water sector is focused on achieving the targets of the JPOI through their water resource management strategies. Projects and programmes are focused on job creation, gender mainstreaming, poverty alleviation and economic growth, whilst promoting sustainable water resource management.

An important contributing factor to this major achievement was substantial donations from a large number of donor countries in cash and in kind, together with the development of a sector wide approach to focus the strengths of the overall water sector towards harmonised delivery, whilst effecting the efficient and effective incorporation of other relevant sectors of government, such as finance. During 1994 an estimated 59% of the population of around 38 million had access to basic water supplies. This has now improved to an estimated 86% of a total population of around 49 million people having access to at least basic water supplies by March 2007. In respect of sanitation an estimated 52% of the 1994 population of 38 million had access to at least basic sanitation services and this number has now improved to around 69% of a total population of around 49 million with such access.

The country furthermore indicated at the 2002 WSSD that it strives to have the overall backlog in respect of water provision eradicated towards 2008 and that of sanitation towards 2010. Due to various constraints it is uncertain whether these objectives will be fully met, but, over the past number of years, the country has been providing access to basic water supplies to an additional one million people per annum and sanitation services to an additional 200 000 households per annum.

DWAF maintains a wide spectrum of water services support programmes to municipalities, e.g.:

- Local authorities are obliged to develop and update Integrated Development Programmes (IDPs) to reflect their overall short to medium term development objectives. In terms of the **Water Services Act (Act 108 of 1997)**, IDPs must contain a chapter on water, called the Water Services Development Plan (WSDP). DWAF has developed extensive guidelines for municipalities to enable thorough water management planning to this end and furthermore provides direct assistance to municipalities in this respect;
- Municipal infrastructure are not adequately operated, maintained and refurbished due to lack of resources and capacity. This could largely be ascribed to inadequate or absent infrastructure asset management (IAM). DWAF is leading the way to establish an IAM strategy for water services; and
- The Department has a close working relationship with research institutions such as the Water Research Commission (WRC) and independent water management institutions such as the Water Institute of Southern Africa (WISA).

DWAF is the government department responsible for the formulation and implementation of policies governing South Africa's water and forestry sector. It strives to ensure that South Africans gain access to clean water and safe sanitation, and promotes effective and efficient water resources management to ensure sustainable economic and social development. Presently it is responsible for water resource management in terms of developing policies, implementing programmes as well as monitoring and regulating South Africa's water resources.

The country's first **Water Supply and Sanitation Policy**, approved during 1994 and followed by the Water Services Act (No. 108 of 1997), gave expression to the relevant reconstruction and development

objectives of the Government. The focus was largely on the provision of basic water and sanitation services to previously neglected communities and DWAF's direct role at that stage in the delivery of basic services to households. As a result of the completion of the country's local government transformation process towards 2000, thus empowering LAs to assume full operational responsibility for their constitutional mandate for water services, DWAF has been reviewing its role to be more of that of the sector leader, regulator and supporter. The consequent new Strategic Framework for Water Services was approved by Cabinet in September 2003 and the Department is currently leading the process to revise the 1997 Water Services Act (No. 108 of 1997) to reflect these new water services stances.

In terms of water resource management, the first National Water Research Strategy (NWRS) was approved in September 2004 fulfilling the requirements of the National Water Policy and National Water Act, No 36 of 1998. This strategy provides a framework to protect, use, develop, conserve, manage and control South Africa's water resources. A key approach to this strategy is the promotion of self regulating CMA's and other water management institutions, thereby shifting DWAF's role to a sector leader, regulator and supporter. Currently the Department is developing guidelines for Catchment Management Strategies (CMS's) for each CMA. The **NWRS** was approved in September 2004 and strives to:

- Provide a national framework to manage the country's limited water resources equitably, sustainably and efficiently, focusing on poverty eradication, the well-being of water ecosystems and honouring international obligations through harmonious best joint use of water in shared river basins;
- Provide a vehicle whereby the South African society could be informed of the Departments mandate in respect of water resource management. In this respect, the NWRS may only be established when the Minister is satisfied that everyone who wishes to comment has been afforded the opportunity and that these comments have been given careful consideration for possible incorporation into the Strategy;
- Provide a framework for development of catchment management strategies for delineated water management areas, of which there are currently 19 covering the whole of South Africa; and
- Identify areas for social and economic development opportunities where water is available and also areas where water will form a constraint.

Increasing water use and demands in South and southern Africa has resulted in an increased need for projects and programmes focused on job creation, gender mainstreaming, poverty alleviation and economic growth, whilst promoting water resource management. One successful initiative achieving these goals is the **Working for Water (WfW) programme** which to date currently runs over 300 projects in all nine of South Africa's provinces (please see Box 5). The provision of clean drinking water and adequate sanitation to all the people of South Africa is another key strategy to promote poverty eradication. The Department has put considerable effort and resources into supporting Local Authorities to fulfil water delivery and sanitation requirements, and during 2005/2006 approximately 200 000 households housing approximately a million people were provided with water and sanitation (DWAF, 2006).

Box 5: Working for Water Programme

The WfW was initiated in 1995, and since then has become an internationally appraised project. It works in partnership with local communities, Government departments including the DEAT, DoA, and Trade and Industry, provincial departments of agriculture, conservation and environment, research foundations and private companies.

The programme involves the clearing of alien invasive species, and to date it has cleared more than one million hectares of invasive alien plants. It has provided jobs and training to approximately 20 000 people, per annum, from among the most marginalized sectors of society. Of these, 52% are women. The WfW programme currently runs over 300 projects in all nine of South Africa's provinces.

A key characteristic of WfW is its commitment to the development of people as an essential element of environmental conservation. Consequently it promotes environmental rehabilitation and protection, as well as social development through the promotion of an enabling environment for skills training, in the communities wherever it works. It also implements HIV and Aids projects and other socio-development initiatives as part of its objectives.

Another programme which has growing success in the delivery of water is called **Water Allocation Reform (WAR)**. This is a proactive approach towards redressing race and gender inequalities regarding water-use, through the promotion of economic development purposes. It is very dependent on a co-ordinated approach to ensure that water of adequate quality and quantity is readily available for South Africa's citizens for these purposes. Apart from dealing with equity in water use among the big water users, WAR also focuses on helping smaller users and poor people use water productively to give them the opportunity to be able to participate in the economy as well. It specifically deals with water use that goes beyond domestic water provision. The WAR programme amongst others is implemented through provincial and local government through their provincial growth and development plans and IDPs.

During the period of the Community Water Supply and Sanitation implementation by the Department of Water Affairs and Forestry (period between 1994 and 2003) issues of empowerment of women and gender equity were integrated into project implementation. Guidelines were put in place and monitored to ensure that women participated meaningfully in all structures including decision making levels. They benefited from project related training as well as a few life skills training. Plans are being developed to integrate women's empowerment programmes into current infrastructure initiatives like the De Hoop dam in Limpopo. The Masibambane 111 theme of water for growth and development also creates opportunities to develop focused attention to empowerment issues without affecting the overall gender mainstreaming mandate adversely. The practice of recognizing and appreciating contributions of women in Water,

Sanitation and Forestry by means of annual awards is an integral part of the departments overall programme.

South Africa has adopted the principles of IWRM into their national policy and legal framework. IWRM calls for integration at a regional, national and local level, and implementation of its policies and strategies to promote sustainable development in South and Southern Africa. The **SADC Protocol on Shared Watercourses promotes regional cooperation towards regional and basin-wide cooperation**. In South Africa this approach is imperative as eleven of the nineteen Water Management Agencies (WMA's) in the country share international rivers. A good example of implementing an integrated river basin and watershed management strategy is that of the ORASECOM. This is an agreement between Botswana, Lesotho, Namibia and South Africa which requires that all basin-wide matters relating to the development, utilisation and conservation of the water resources in the river system are jointly discussed in ORASECOM. The SADC protocol, however, still lacks a framework designed to manage groundwater resources between South and southern Africa, and the significance of this gap requires attention. South Africa has an important role to play as a negotiator within the SADC region. On a more continental scale the Department represents the SADC on the Technical Advisory Committee of the AMCOW.

7.1.2 Challenges and opportunities

The implementation of water resource management has shifted over the years into a more cooperative governance framework. This framework promotes local level management of resources which requires both financial resources and capacity at a local level. During the year 2005-2006 it was reported that a water summit was held in each province to ensure the alignment of provincial and local government strategies for water resource management with IWRM and DWAF objectives. This is a key theme to ensuring that programmes are aimed at achieving national policies. Ensuring stakeholder willingness requires that both government and civil society understand the necessity surrounding water resource management, however the skills shortage in the Department may impact on its ability to effectively monitor the local level situation. The development of the Framework Programme for Research, Education and Training in Water (FETWater) should assist in awareness creation and capacity building.

The programmes developed for capacity building at a government level and awareness training at a local level will promote water resource management from a bottom up approach. DWAF must continue to monitor these strategies, whilst simultaneously monitoring non-compliance.

The greatest challenge centres on difficulties to access adequate financial resources to address targets. The second challenge identified is the minimal skills and capacity of water sector practitioners (engineers and technicians) as well as the Civil Society Organisations operating in the sector. The African Network for Water and Sanitation is, however, playing an active role in the water and sanitation field and is both experienced and capable. This challenge also poses a threat to sustainability of services which have to be ensured by among other things proper ongoing maintenance and operations systems of completed schemes.

In order to address the skills and capacity challenges the government of South Africa made seed funding available from the European Union donor funding to initiate capacity building and lesson sharing programmes in the region. This seed funding helped regional stakeholders undertake processes of consultations, putting together proposals for the SADC, secretariat's approval, developing training modules as well as translation of documents into French and Portuguese (languages used in Angola, Mozambique and the Democratic republic of Congo) The SADC water division raised funds for the pilot training and capacity building programme in seven (7 countries)

The South African Institute of Consulting Engineers (SAICE) and the African Engineers Forum (AEF) played a leading role in developing training modules for practicing engineers and Technicians as well as organising training programmes in various countries during the pilot phase. The Network for Advocacy on Water Issues in Southern Africa (NAWISA) currently housed by the Kalahari Nature Conservation in Gaborone carried the responsibility of developing Business plan for the Civil Society capacity building programme which will soon be implemented. Working together with the Water Division this programme managed to obtain minimal financial support from DANIDA.

Capacity building and training of Engineers and Technicians. Training Courses have been developed to address needs identified by the practitioners:

- Small water treatment plants
- Preventative maintenance in water and sanitation infrastructure
- Socio economic assessment
- Principles of water demand management

Planning for the provision of water in South Africa is hampered by the need to provide services to a significant number of refugees in the country, by unprecedented economic growth and by the lack of suitably skilled staff to implement projects.

7.2 Technologies for alternative water supply

7.2.1 Progress

Programmes implemented to promote water recycling and water harvesting are being researched by various institutions. To date the most effective programme developed has been the warm cloud seeding methodology. This strategy uses of hygroscopic substances released at the base of convective thunder storms through flares fixed to aircrafts to enhance rainfall. This seeding typically leads to a doubling of the amount of rain precipitating from convective thunder clouds and the methodology is highly acclaimed at the international level. On an area basis, it would appear that the average rainfall could be increased from 5 to 8%. Other types of unconventional water resources still require further research, and this should be

implemented to promote alternative methods for access to water as a programme to reduce pressures on South Africa's water resources.

7.2.2 Challenges and opportunities

Seeking environmentally acceptable and cost efficient water supply technologies remains a challenge to South Africa. In this regard, opportunities for improved water resource management include:

- Developing alternative resource supplementation for consideration in the future (such as desalination);
- Assessing groundwater as a potentially available resource in the future;
- Assessing and implementing alternative sanitation technologies that are socially and environmentally acceptable; and
- Increasing compliance and integration of cleaner water technologies and demand management.

7.3 Managing water resources in the context of extreme events

7.3.1 Progress

South Africa has developed a **Disaster Management Act (No. 57 of 2002)** which calls for a preventative and proactive approach to disaster management. Mitigating the effects of extreme water-related events requires that the three spheres of government (namely DWAF, LA and Catchment Management Areas (CMA's)) implement a cooperative governance framework aimed at dealing with water-related disasters in a practical manner. Early warning systems must be developed to ensure the effective management of water-related disasters, thereby reducing their impacts on communities and South Africa's water resources.

Strategies for managing South Africa's water resources have been developed to take account of the country's variable and unpredictable climate and the resulting limited availability of unevenly distributed water. The strategies, which are described in the NWRS, scheduled to be established in terms of the National Water Act, No. 36 of 1998, during 2004, provide a sound basis to address the anticipated effects of climate change without the need for special programmes or projects. However, the effects are likely to manifest themselves at different times in different parts of the country, and to vary in magnitude from area to area. A better understanding of these issues is expected from ongoing research programmes funded and managed by the WRC, which will facilitate prioritising intensified interventions in areas where the effects are greatest and/or will occur soonest. It will be necessary to improve meteorological and hydrological monitoring systems to detect the onset and development of the effects of climate change on water resources.

7.3.2 Challenges and opportunities

Climate change continues to have the potential to impact on South Africa's water resources significantly, and long-term planning and water management decisions must incorporate both the current water demands whilst still implementing strategies to minimise the impacts of climate change on future water resources. Approaches to water resources management that will facilitate adaptation to a changed climate, include:

- Comprehensive and integrated planning across river catchments allowing for co-ordinated solutions, using an appropriate mix of demand and supply-side interventions, to the problems of water quantity, water quality and water supply;
- Replacing in-perpetuity riparian water rights with a system of time-bound administrative authorisations to use water that are subject to regular review will provide flexibility to adjust water allocations to account for changes in the availability of water.
- The demand for water may be reduced in all user sectors through a range of measures that encourage efficient water use. These include implementing the pricing strategy for water use charges prescribed in the National Water Act (No. 36 of 1998), promoting the use of water-efficient technologies and practices, mandatory water auditing and accounting, and education in water conservation and demand management.
- Water conservation measures such as clearing alien invasive vegetation from infested catchments will increase the amount of surface water runoff and recharge to groundwater, whilst water harvesting in agriculture and homes, especially those in rural areas, could reduce reliance on supplemental irrigation by optimising the effectiveness of rainfall.

7.4 Information generation and dissemination

7.4.1 Progress

DWAF manages a number monitoring programs to assess the status of water resources in the country, and has instituted a significant program of institutional reform to establish water resources management at a catchment level. Water resources information structures in DWAF are also adapting to this approach to provide an effective Water Resources Information Service to the future decentralized institutional environment as a national service. The following have been implemented:

- A total of 9 national water quality programs covering chemical, biological, toxicity and radio-active contamination are operational, or being implemented. Results from these and other, local monitoring programs (e.g. compliance monitoring) are maintained in a computerized database for storage, dissemination and presentation, called the Water Management System. Plans are underway to replace this database as the first module of a new Integrated Water Resources Information System;

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- A number of surface flow gauging stations are also in operation to monitor river flow and reservoir status. The expansion of this program has received additional funding for this year and the next three years. Surface flow and evaporation information is available on the Internet from the Surface Flow Database. This service also includes 320 real time stations for operational and disaster management purposes, as well as the database for the real time network, covering all Southern African countries;
 - A number of groundwater programs are also underway, including integrated programs monitoring the relationship between rainfall and surface water status and related groundwater resources. This, and related information is available for the National Groundwater Archive which will soon be launched as a Web portal (for both capturing and dissemination);
 - The programs to monitor, register and license water uses in support of demand management is also progressing well with related information maintained in the Water Authorization Registration;
 - A comprehensive GIS service for the water sector, including remote sensing and land information services to support a variety of functions; and
 - Information Centre is being established to ensure accessibility of information to the public.

7.4.2 Challenges and opportunities

Major expansions to the country's river flow gauging infrastructure are required for the country to come on par with international flow gauging standards. In addition, South Africa needs to undertake consistent data collection throughout the country in which data from the local, provincial and national monitoring programmes are integrated and made available to all water resource management institutions.

Research is being undertaken by institutions such as the WRC and independent water management institutions such as the WISA. South Africa realises the limits of this resources and has developed much research into the sector. It is imperative that this research guides policies and programmes implemented in the sector, to promote effective water resources management.

Table 2: South Africa's contribution to meeting the targets of Chapter II of the Johannesburg Plan of Implementation (CSD-13)

CSD - 13	ISSUE	PROGRESS
	Need to mainstream sanitation plans and policies with integrated water resource management	South Africa has a well developed strategic planning process that is applied at all levels of government and closely interlinked with its budgeting processes. This process ensures that strategic priorities and objectives are recognised and cascaded down to operational levels where it is balanced with bottom up needs established through the local government integrated planning processes. The Department of Water Affairs and Forestry (DWAF) is the Water Sector leader and as such sets policy, regulates and supports water and sanitation service delivery.
	Multi-stakeholder approach to planning and implementation	Multi-stakeholder approach to planning and implementation for Water and Sanitation is achieved through dedicated Water Services Development Plans, that forms part of the local government integrated planning processes.
	Decentralised provision of sanitation services	South Africa's National Sanitation Programme is planned and implemented through its 155 Water Service Authority Municipalities, thereby achieving the decentralisation goals.
	Capacity building, including training in formulating and negotiating contracts, financial administration and cost recovery mechanisms	Through its Operation Gijima and Masibambane support programmes, the Department of Water Affairs and Forestry provides hands on support to Water Service Authority Municipalities. His support includes inter alia, Capacity building, including training in formulating and negotiating contracts, financial administration and cost recovery mechanisms
	Implementing sustainable sanitation solution systems	As Water Sector leader the Department of Water Affairs and Forestry provides policies and guidelines to ensure sustainability of sanitation solutions. An appropriate technology programme has been launched recently, supported by an information dissemination project to ensure that Water Service Authority Municipalities are fully aware of all the latest

CSD - 13	ISSUE	PROGRESS
		developments, information, guidelines and policies related to sanitation planning design and implementation.
	Active involvement of the poor in infrastructure and service planning and Cross-subsidisation of charges for sanitation	South Africa is very proud of its achievements in respect of Free Basic Service provision. To this effect the Department of Water Affairs and Forestry has developed a Free Basic Policy for both Water as well as Sanitation Service provision.
	CBOs catalyst for improved hygiene and sanitation in rural communities	The widespread use of Sanitation Resource centres in some of the larger provinces with high percentages of rural populations was found to be very effective in mobilising the community to ensure improving sanitation as well as health and hygiene in these areas.
	Improved sanitation service delivery through setting of targets	The Department of Water Affairs and Forestry, together with the Departments of Health and Education have set early targets for the achievement of eradication of service backlogs in schools and clinics. Similarly, did the Department of Water Affairs and Forestry set early targets for the eradication of the unacceptable bucket systems. Setting these targets and ensuring that matching funding is available has ensured that success has been achieved in these areas.
	Regular surveys	The levels of sanitation services are determined through targeted questions included in the 10 year Census as well as annual household surveys conducted by the Statistics South Africa. This provides independent verification of the performance of National programmes such as the National Sanitation Programme.

Table 3: Sanitation Review

JPOI Target	ISSUE	PROGRESS
8 (a)	Develop and implement efficient household sanitation systems;	South Africa has implemented a National Sanitation Programme with sub-programmes in each of the 155 Water services Authority Municipalities. South Africa has superseded the 2015 MDG of halving the proportion of people without access to safe drinking water. As from 1994 to 2007, access to basic water supply has increased from 59% in 1994 to 86% in 2007 and access to basic sanitation has increased from 48% to 71%. The Sanitation Bucket Eradication Programme is at its close and about 84% of the 252 254 systems in the formal areas originating prior 1994 have been eradicated as at March 2008.
8 (b)	Improve sanitation in public institutions, especially schools;	South Africa has launched a final programme to eradicate sanitation backlogs at Schools and Clinics. The Clinics backlog was cleared in 2007/08 and funding is available to clear the Schools backlog by 2009/10
8 (c)	Promote safe hygiene practices;	South Africa has implemented a very successful Health and Hygiene programme that s totally integrated with the sanitation service implementation programmes. These interventions have succeeded in drastically reducing incidents of cholera outbreaks I the Eastern Provinces of the country .The health & Hygiene strategy was launched during 2007 sanitation week .
8 (d)	Promote education and outreach focused on children, as agents of behavioural change;	South Africa has implemented an integrated approach and the Department of Education is actively partnering with the Department of Water Affairs and the Department of Health to ensure that appropriate Health and Hygiene practices are embedded in families through the education of children. Health & hygiene is incorporated in school curriculum from grade R-9 .
8 (e)	Promote affordable and socially and culturally acceptable technologies and practices;	As a result South Africa uses other alternative technologies of sanitation like Ventilated Improved Pit Latrine (VIP). The effort of providing alternative sanitation has spin offs of providing jobs while making use of

JPOI Target	ISSUE	PROGRESS
		labour intensive construction methods. In the process of delivery of alternative sanitation programme there are some linkages with other developmental programmes that benefit rural communities such as income generation, skills development and job creation programmes.
8 (f)	Develop innovative financing and partnership mechanisms;	South Africa has established the municipal infrastructure grant programme, which is aimed at providing all South Africans with at least a basic level of service by the year 2013 through the provision of grant finance aimed at covering the capital cost of basic infrastructure for the poor. The MIG programme is a key part of government's overall drive to alleviate poverty in the country and, therefore, infrastructure is to be provided in such a way that employment is maximised and opportunities are created for enterprises to flourish.
8 (g)	Integrate sanitation into water resources management strategies.	South Africa has for several years been pursuing an Integrated Water Resource Management Strategy to, inter alia, integrate sanitation into water resources management strategies

Table 4: South Africa's contribution to meeting the targets of Chapter IV of the Johannesburg Plan of Implementation

JPOI Target	ISSUE	PROGRESS
25 (a)	Mobilize international and domestic financial resources at all levels, transfer technology, promote best practice and support capacity -building for water and sanitation infrastructure and services development, ensuring that such infrastructure and services meet the needs of the poor and are gender-sensitive;	Through the very successful Masibambane Programme, South Africa has succeeded to Mobilize international and domestic financial resources at all levels, transfer technology, promote best practice and support capacity -building for water and sanitation infrastructure and services development, ensuring that such infrastructure and services meet the needs of the poor and are gender-sensitive
25 (b)	Facilitate access to public information and participation, including by women, at all levels in support of policy and decision -making related to water resources management and project implementation;	South Africa is recognised as a leader in promoting gender equality, and this has also been implemented on water and sanitation projects by ensuring a minimum level of participation by women in Project Steering Committees, responsible for planning and oversight of project implementation.
25 (c)	Promote priority action by Governments, with the support of all stakeholders, in water management and capacity -building at the national level and, where appropriate, at the regional level, and promote and provide new and additional financial resources and innovative technologies to implement chapter 18 of Agenda 21;	<p>These goals are being actively pursued b the South African Government, and in Sanitation for example, stakeholder involvement at all levels have been achieved through the National, Provincial and District Sanitation Task Team Structures (NSTT; PSTT; DSTT) that have been mandated to coordinate the provision of sustainable sanitation services to all households and institutions.</p> <p>In addition, South Africa uses other alternative technologies of sanitation like Ventilated Improved Pit Latrine (VIP). The effort of providing alternative sanitation has spin offs of providing jobs while making use of labour intensive construction methods. In the process of delivery of alternative sanitation programme there are some linkages with other developmental programmes that benefit rural communities such as income generation, skills development and job creation programmes.</p>
25 (d)	Intensify water pollution prevention to reduce health hazards and protect ecosystems by introducing technologies for affordable sanitation and industrial and domestic wastewater treatment, by	South Africa has since the beginning of its Community Water Supply and Sanitation Programme implementation I 1994 insisted on the performance of a Ground Water Protocol as part of the design of any sanitation project.

	mitigating the effects of groundwater contamination and by establishing, at the national level, monitoring systems and effective legal frameworks;	Where it is found that traditional Ventilated Improved Pit Latrines (VIP) cannot be used, alternative more ecological friendly solutions are required.
25 (e)	Adopt prevention and protection measures to promote sustainable water use and to address water shortages.	Water is South Africa's scarcest resource and it has long been recognised that, despite the wishes of the population, waterborne sanitation services cannot be sustainable provided for all. Hence the massive focus on dry-site sanitation solutions, such as the VIP.

8 INTEGRATED MEANS FOR IMPLEMENTATION

8.1 Institutional arrangements

South Africa needs to implement a co-ordinated approach to the thematic area of land management. There are clearly a number of stakeholders who each play a critical role in implementing different aspects of the JPOI. The co-ordinating body should utilise the targets presented in the JPOI as a basis of progress assessment and as a foundation for their activities.

8.2 Finance

South Africa has allocated significant resources to sustainable land management issues. For example:

- DEAT has currently finalised a Resource Mobilisation Strategy. This strategy is aimed at ensuring government departments and the private sector poverty eradication and environmental protection programmes are synergising efforts which are aimed at implementing the UNCCD. It also aims at leveraging private sector resources for the NAP, as annual allocations for corporate social investment programmes may contribute approximately R100 million.
- South Africa's overseas development partners are willing to commit resources when government affirms its priorities in natural resource management and poverty eradication. The Global Mechanism (GM) has committed US\$50,000 to South Africa for partnership framework to mobilize resources for NAP implementation. Other external partners include the World Bank, the Global Environment Facility (GEF) the United Nations Development Programme (UNDP), the United Nations Environment Programme (UNEP), Canada, Netherlands, the Australian governments, the Danish International Development Agency (DANIDA) and Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ).

This financing presents a useful basis from which sustainable land management activities can be implemented. Mechanisms for the efficient and effective distribution of these funds at grass roots level is a critical failure and one in which further effort is required.

8.3 Technical Assistance/ Transfer

At present due to the lack of awareness and knowledge around sustainable land management, priority needs in technical assistance focus mainly on capacity building, awareness and access to appropriate technology and institution building. It is necessary that improved sustainable agricultural and pastoral technologies that are socially and environmentally acceptable and economically feasible, are developed and introduced in South Africa.

Continual research into sustainable land management as well as information sharing between international and regional organisations needs to occur. It is important that projects and programmes are implemented to

reduce the risk associated with risk by developing and educating effected communities. It is imperative that indigenous solutions are assessed for local areas thereby making these projects implemented relevant to the area.

8.4 Capacity Building

Sustainable land management is a shared responsibility of all levels of government, the farming community, the private sector and civil society. Included in this, the government has proposed the implementation of an integrated approach to land management. This requires ensuring South Africa has the capacity within each of the separate departments to do so.

South Africa must ensure governments at the appropriate level are establishing and maintaining mechanisms to ensure coordination of sectoral ministries and institutions. This must include local-level institutions and appropriate non-governmental organisations, in their process of integrating sustainable land management programmes into national development plans and national environmental action plans.

Natural disasters, such as extended periods of drought, can increase the spread of deserts throughout South Africa. Educating local communities on ways to combat desertification is achieved through the use of extension and agricultural officials from DoA. It is important that these officials receive the training and information required to educate local communities effectively.

The ‘bottom up approach’ requires communities to be aware and educated about the environment, in order for them to understand the reason for certain land management practices. Knowledge sharing and participatory approaches with communities will assist in developing indigenous local strategies for economic development. These have been proven to be more successful than past ‘top-down approaches’ for economic development.

9 AFRICA

9.1 NEPAD

9.1.1 Implementing measures to ensure success

In order to address current the environmental, economic and social challenges in Africa, the NEPAD was established in 2001. NEPAD was adopted by the African Heads of State and Government. This is an initiative in the context of which the leaders agreed, based on a common vision and a firm and shared conviction, that they have a pressing duty to eradicate poverty and to place their countries, both individually and collectively, on a path of sustainable growth and development, and at the same time to participate actively in the world economy and body politic. NEPAD identifies that the range of issues necessary to nurture the region’s environmental base and sustainable use of natural resources is vast and

complex, and that a systematic combination of initiatives is necessary in order to develop a coherent environmental programme.

South Africa has played a leading role in developing NEPAD and its various sectoral strategies, mobilising African and international support for NEPAD, and supporting the structures and processes of NEPAD. Looking forward, South Africa has prepared the NEPAD Implementation Strategy of South Africa (NISSA) which focuses the country on the mobilisation and alignment of resources and institutions nationally, regionally, continentally and internationally in support of the NEPAD vision, mission and objectives.

In the international arena, NISSA outlines three intervention areas, as follows:

- ‘Support the SADC Region’,
 - Support alignment of existing continental NEPAD sectoral priority programmes into and with regional processes and programmes;
 - Identify and implement projects from the NEPAD sectoral priority programmes for implementation at regional level, e.g. from the Scientific and Technical Advisory Panel (STAP) Infrastructure programme, identifying centres of excellence for regional utilisation;
 - Facilitate South African support to the SADC Regional Indicative Strategic Development Programme (RISDP), as far as the rest of the SADC region is concerned, not directly involving South African beneficiaries;
 - Ensure South African capacity and political support for the implementation of NEPAD and RISDP programmes and projects;
 - Define and expand the role of South Africa as a development partner within the SADC region;
 - Implement the DTI led Africa Development Strategy within the SADC region;
 - Implement the recommendations arising from the Southern Africa Regional Millennium Development Goals (MDG) Report;
 - Ensure South African support to the APRM programme within the SADC region; and
 - Establish and utilise regional development funds for NEPAD and RISDP programmes and projects.
- ‘Support the African Continent’
 - Support alignment of existing continental NEPAD sectoral priority programmes into and with African Union processes and programmes;
 - Identify and implement projects from the NEPAD sectoral priority programmes for implementation at, e.g. enhancing conditions of peace, security and sound political and economic governance, post conflict reconstruction and development, the implementation of decisions of various forums of sectoral Ministers relating to such as Pan-African Inter-Connectivity under the NEPAD Information and Communication Technology (ICT) initiative, the STAP Infrastructure programme etc;

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- Ensure South African capacity and political support for the implementation of continental NEPAD programmes;
 - Promote intra-African trade and capital flows, as well as the provision of regional public goods and cross-regional infrastructure connectivity (physical, electronic and financial);
 - Utilise South Africa's well-developed scientific and technological base to provide centres of excellence in the service of the continent;
 - Define the role of South Africa as a development partner within the continent;
 - Finalise and implement the DTI Africa Development Strategy;
 - Implement the recommendations arising from the Common African Position on the Achievements of MDGs;
 - Ensure South African support to continental African Peer Review Mechanism (APRM) programmes; and
 - Establish and utilise Continental Development Funds for continental NEPAD programmes and projects.
- Engaging the International Community
 - Promote foreign direct investment, equitable market access, increased Overseas Development Assistance (ODA) and debt relief for Africa to support NEPAD objectives;
 - Ensure that the raft of political commitments in support of NEPAD are translated into concrete and tangible support for implementation; and
 - Promote support for the implementation of NEPAD through the G-8, the Africa Partnership Forum, the UN, the EU, the OECD, the WTO, the IMF and World Bank, the World Economic Forum (WEF), New Asian African Strategic Partnership (NAASP) and Forum on China-Africa Cooperation (FOCAC).

South Africa, through DEAT, continued with the establishment, development and management of the six identified TFCDA's in support of NEPAD. The concept of cross-border collaboration forms part of the objectives of the SADC, which aims to promote synergy in regional initiatives, with social, economic and conservation benefits for the subcontinent. Therefore, the TFCDA programme forms an integral part of NEPAD, which also aims to harness Africa's development potential. To date, South Africa is involved in this initiative with the following SADC neighbours: Namibia, Botswana, Zimbabwe, Mozambique, Swaziland and Lesotho.

The various TFCDA's are:

- The Great Limpopo Transfrontier Park
- The |Ai|Ais-Richtersveld Transfrontier Conservation Park
- The Kgalagadi Transfrontier Park

- The Maloti- Drakensberg Transfrontier Conservation and Development Area
- The Limpopo Shashe Transfrontier Conservation Area
- The Lubombo Transfrontier Conservation and Resource Area

9.2 Sustainable Development in Africa

South Africa is committed to addressing issues of sustainable development in Africa through south-south partnerships. South Africa has made significant progress in terms of a number of the JPOI initiatives, as reflected in Table .

Table 5: South Africa's contribution to meeting the targets of Chapter VIII of the Johannesburg Plan of Implementation

JPOI Target	ISSUE	PROGRESS
62(a)	Regional and sub-regional programmes to achieve sustainable development efforts for peace, stability and security, democracy, good governance, respect for human rights and freedom, including the right to development and gender equality	This is a cross-cutting issue and South Africa's contribution is largely summarised in its efforts with regard to NEPAD. In this regard, it is important that South Africa be seen to be "NEPAD compliant" in the sense that NEPAD is seen as a framework for development and for "doing business in a new way", i.e. a visionary roadmap for transformation and reform. This entails actively promoting and entrenching the NEPAD vision, values, principles, priorities and objectives nationally, regionally, continentally and internationally, as opposed to merely implementing a set of projects. This is reinforced by the fact that the APRM review process has been evaluating South Africa on its broad compliance with NEPAD principles, objectives and programmes.
62(b)	Support implementation of the vision of NEPAD	South Africa plays a major role in the implementation of sustainable development and NEPAD both locally and regionally, driven through the Strategy for NEPAD. South Africa has been given the responsibility of coordinating the implementation of the invasive alien species programme. In addition, South Africa has been actively engaging in a number of initiatives that are contributing to poverty eradication and promoting sustainable development. In order to ensure the implementation of NEPAD, South Africa together with other Southern African countries achieved key milestones including: <ul style="list-style-type: none"> • SADC - Maputo Declaration 1 December 2005 • Africa's ST Consolidated Plan of Action 23 August 2005 • SADC Summit Declaration 6 July • SADC Resolutions in Harare 2006
62(c) & (d)	Technology development, transfer and diffusion to Africa	The Plan of Action for Science and Technology, under the auspices of NEPAD, was adopted in November 2003 by the African Ministerial Council for Science and Technology (AMCOST). The result: a Consolidated African Science and Technology Plan of Action which was adopted during the second meeting of AMCOST in Senegal during September 2005. In relation to this, South Africa has signed bilateral

JPOI Target	ISSUE	PROGRESS
		<p>Science and Technology agreements signed with a number of countries. There is high demand for technology inputs in growing economies such as the Democratic Republic of Congo, Angola and Mozambique, where geological survey and agriculture projects are being jointly run. Science and technology can play a major role in post-conflict reconstruction and development in countries such as Burundi, Rwanda, the Democratic Republic of Congo, Angola, Sudan and Mozambique (DST, 2007) (Appendix 2).</p>
62 (e)	Support the development of national programmes and strategies to promote education	<p>South Africa has been supporting all efforts to secure the participation of the African Diaspora in the Africa's Consolidated S&T Plan of Action since 2003. The challenge is to find modalities for leveraging the considerable technical and human resource capacity within the region. Efforts are underway to develop a database of the human resource base in various scientific fields. In March 2005 South Africa, Jamaica and the African Union hosted a conference for Africans from the continent and representatives of the Diaspora from the Caribbean region. The major recommendations on science and technology cooperation include the following:</p> <ul style="list-style-type: none"> • The need for continuous dialogue between the African Union and the Caribbean Community (CARICOM) in order to promote knowledge production and sharing through the effective use of available technologies; • The establishment of centres of excellence for mutual benefit of the Caribbean and African peoples, and as a basis for developing and creating opportunities for the absorption of human capital for the advantage of both regions. <p>The funding instruments of DST for promoting research and technology partnerships on the continent, e.g. the African Scholarship Programme for Innovation Studies (ASPIS), were made open to the participation of the African Diaspora.</p> <p>In addition, South Africa, established as a key policy imperative, the National Indigenous Knowledge Systems Office (NIKSO) in 2006. NIKSO has worked towards coordinating the establishment of a national platform on bioprospecting and product developments. NIKSO's has</p>

JPOI Target	ISSUE	PROGRESS
		<p>contributed to a number of Inter-governmental and regional activities. In March 2007, DST and the Ministry of Science and Technology of Zambia successfully hosted the second SADC workshop on policy development in the region. Emanating from this workshop was a number of recommendations for member states amongst which was the harmonization of the region's policy framework within the next two years. Planning for and responding to intellectual property rights issues have also been the business of the NIKSO, in South Africa and abroad.</p>
62(m)	Assisting to address poverty stricken mountain communities	<p>The DST Sustainable Livelihoods programme is in process of working with Lesotho to transfer trout farming technologies. The objective of the proposal is to stimulate the development of an integrated and sustainable, community based trout farming sector in Lesotho and the surrounding high lying areas of South Africa, and establish SMME's commercially producing trout all year round, as opposed to seasonal as it is in the Western Cape, and Mpumalanga.</p>
64	Mobilise financial and other support to develop and strengthen health systems in Africa	<p>South Africa is supporting the African region, in refining research methodologies, improving safety and efficacy and promoting traditional medicine. The World Health Organisation (WHO) recognizes the Medical Research Council as a potential IKS Center of Excellence.</p>
65	Programmes to deal with natural disasters and conflicts, including their humanitarian and environmental impact	<p>South Africa is actively involved in African peacekeeping initiatives, including having participated as mediator in the continent's trouble spots, including in the Democratic Republic of Congo (DRC), Burundi, Cote d'Ivoire and Sudan. The country has also participated in a number of natural disaster relief efforts for example in Mozambique, Tanzania and others.</p>
68	Assist African countries to achieve sound management of chemicals, with particular focus on hazardous chemicals and waste	<p>The African Stockpile Programme aims to prevent and dispose outdated pesticides from African countries. South Africa is part of this US\$ 25 million Global Environment Facility project together with a number of African countries namely: Botswana, Cameroon, Cote d'Ivoire, Lesotho, Mali, Morocco, Mozambique, Namibia, Niger, Nigeria, Swaziland, Tanzania and Tunisia. South Africa is the host of the Basel training centres for English speaking African countries. The centres are designed to build the capacities of developing countries in meeting the commitments of the convention. The key objectives of the Basel</p>

JPOI Target	ISSUE	PROGRESS
		Convention are the reduction of the production of hazardous waste and the restriction of transboundary movement and disposal of such waste.
70	Support efforts to attain sustainable tourism that contributes to social, economic and infrastructure development	<p>South Africa has been actively involved in the development of a tourism policy at the regional level through the Regional Tourism Organisation of Southern Africa (RETOSA). Specific activities include: Utilising the 2010 soccer World cup to be hosted by South Africa to benefit the region.</p> <ul style="list-style-type: none"> • Promotion of the development of guidelines for tourism investment in the SADC region to be implemented at the regional level, and, if successful, rolled over to other regions of Africa under NEPAD. • Development of promotional material for tourism in the region. • Participation in the following regional tourism initiatives <ul style="list-style-type: none"> - Okavango Upper Zambezi International Tourism Spatial Development Initiative (OUZIT) - Coast 2 Coast Spatial Development Initiative – inviting tourists to undertake a 3 000-kilometre odyssey across southern Africa. <p>South Africa- implementation of the vision of NEPAD</p>

South Africa is proud of its contribution to sustainable development of the African continent but continues to recognise that, it needs to increase its efforts in particular with respect to:

- Enhancing the industrial productivity, diversity and competitiveness of African countries;
- Supporting the implementation of affordable transport systems and infrastructure that promotes connectivity in Africa; and
- Supporting other African countries in their efforts to implement the sustainable urbanisation and human settlements.

10 CONCLUSION

South Africa has the political will and intent to support the achievement of Agenda 21 and JPOI targets and has made significant progress within the thematic cluster of issues under consideration. The progress is supported with well formulated policies and strategies. However, the ongoing success of the programmes is hindered by:

- The lack of capacity to implement policies, programmes and plans that have been developed;
- The paucity of data and/or information that enables monitoring of the success and failure of implementation of policies and plans linked with difficulties in predicting and forecasting issues, such as natural disasters; and
- The limited nature of inter-governmental integration.

These issues are dealt with in Section 5 of this report which presents integrated approaches to dealing with the capacity constraints, technology transfer and institutional arrangements. These will form the basis of ongoing efforts to realise the requirements of Agenda 21 and JPOI.

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APPENDIX 1: ANALYSIS OF PROGRESS IN TERMS OF KEY AGENDA 21 AND JPOI ISSUES

Progress has been determined through a review of the information presented in Chapter 4 of this report and was discussed with key stakeholders to assess their viewpoints.

Theme	JPOI Target	Progress
Agriculture and Rural Development	Integrating rural development strategies into Poverty Reduction Strategy Papers (PRSPs) or other economic/development strategies and the empowerment of local rural communities, especially those living in poverty and their organizations(Chapter II, 7c),	Good Progress
	Supporting main driving forces for economic growth and social development in rural areas (e.g. agriculture, small and medium enterprise development, employment and other non-agricultural sector) as well as improving access to basic services and infrastructure in rural areas (e.g. adequate shelter, education, employment opportunities, health, sanitation, energy) (Chapter II, 9);	Good Progress
	Food security and sustainable agriculture taking account of community-based and indigenous approaches to sustainable food production (Chapter II, 7 (a), (j) & (k)); Chapter iv, 40 (a), (p) & r	Good Progress
	Early warning systems for monitoring food supply and household supply and demand and household access to food, weather insurance schemes for farmers and agriculture related disaster management programmes (Chapter II, 7(l));	Good Progress
	Application of risk-mapping, remote sensing, agro-methodological modelling, integrated multi-disciplinary crop-forecasting techniques, and computerised food supply/ demand analysis (Moderate Progress
	Enhancing agricultural productivity and farmer's incomes (Chapter II, 7(k));;	Moderate Progress
	Diversification of agricultural production systems (Chapter IV, 40(g)) ;	Moderate Progress
	Agrarian reform and measures to secure equitable access to land by both genders (Chapter II, 7(d), (e) & (h); Chapter IV, 40(f);	Moderate Progress
	Programmes to improve soil fertility, environmentally sound agricultural pest control and improvements in water management in agriculture (Chapter IV, 40(o)	Moderate Progress
	Infrastructure development to enhance distribution to markets ((Chapter II, 7(i) & (k)); Chapter iv 40 (l) and	Moderate Progress

	Bilateral, regional and multilateral agreements relating to liberalisation of agricultural product markets with specific focus on support for other African countries to improve regional trade and economic integration between African countries (Chapter VIII, 67(c) & (d));	Good Progress
Drought and Desertification	Strategic planning frameworks for the protection and sustainable management of natural resources in deserts and areas affected by desertification, their integration into national development strategies and/or action plans Chapter IV, 41(d));	Moderate Progress
	Improved use of and local access to climate and weather information, forecasts, early warning and information networking to combat desertification and drought, including database development on desertification, land degradation and human condition, incorporating physical and socio-economic parameters and desertification and land degradation impact assessment (Chapter ii, 7(1) & Chapter IV, 41(e));	Moderate Progress
	Research and dissemination on ways of reducing water loss from soil, on increasing water absorption capacities of soil and on water harvesting technologies in desertification affected areas (Chapter VIII, 65(a); Chapter X, 109(b)); Chapter iv 26 (a) & (e)	Moderate Progress
	Policies and practices to arrest land degradation and to restore land and soil productivity (Chapter iv, 41 & Chapter VIII, 63);	Moderate Progress
	Drought relief schemes (rehabilitation and recovery programmes) and their integration into national and regional development planning including afforestation and reforestation programmes using drought resistant, fast growing species (Chapter VIII, 62(n); and	Moderate Progress
	Legislative measures and policy incentives to encourage forestry development in drylands (Chapter IV, 41).	Limited Progress
	Application of techniques and methodologies for assessing the potential adverse effects of climate change and other mechanisms of land degradation (Chapter IV, 41(c)).	Limited Progress
Land	Planning and development of land resources involving all land stakeholders, including indigenous and landless population; strengthened role of land administration systems so as to guarantee land use rights and legal security of tenure (Chapter IV, 40 (h) & (i));	Good Progress
Integrated Water Resource Management	Develop and implement national/ regional strategies, plans and programmes with regard to integrated river basin, watershed and ground management (Chapter IV, 26(a)); and Chapter vii, 66 (b)	Good Progress
	Programmes for mitigating the effects of extreme water-related events(Chapter IV, 26(d));	Moderate Progress

	Diffusion of technology and capacity-building for non-conventional water resources and conservation technologies to developing countries and regions facing water scarcity (Chapter IV, 26(e)) and 28	Good Progress
	Programmes for energy-efficient sustainable and cost-effective desalination of sea-water, water recycling and water harvesting(Chapter IV, 26(f));	Good Progress
	Establishment of public-private partnerships and other forms of partnerships that give priority to the needs of the poor (Chapter IV, 26(g)); and	Good Progress
	Support regional, sub-regional and capacities for data collection and processing and for planning, research, monitoring, assessment and enforcement (Chapter IV, 27) and Chapter viii, 66 (c)	Good Progress

Appendix 2: Bilateral S&T cooperation in Africa

COUNTRY	STATUS OF AGREEMENT	PROJECTS	INSTITUTIONS INVOLVED	IDENTIFIED AREAS OF COOPERATION
Angola	Letter of Intent was signed. Formal agreement is expected to be signed in 2006	No active projects exist at present		ICT Exchange of scientists and students Fisheries
Algeria	Bilateral agreement exists	Laser research Space technology Radionuclide production	CSIR iThemba Labs South African Nuclear Energy Corporation (NECSA) Medical Research Council (MRC)	Agricultural research Laser technology Space technology Materials science Nuclear research IKS
Egypt	Formal agreement was signed	No active projects exist		Laser technology Biotechnology Agriculture Information technology
Tunisia	Formal agreement exists	No active projects		Agricultural research Biotechnology Renewable energy Laser technology Nuclear technology
Kenya	Formal agreement exists	No active projects as yet	MRC	Nuclear technology Space technology Human health research Agricultural research ICT Indigenous knowledge systems Laser technology IKS

COUNTRY	STATUS OF AGREEMENT	PROJECTS	INSTITUTIONS INVOLVED	IDENTIFIED AREAS OF COOPERATION
Nigeria	Formal agreement exists	Study of emerging amphibian disease	University of North-West MRC	Biotechnology Materials science Space technology IKS Environmental science
Mali	Formal agreement exists	Study of the Timbuktu manuscripts	University of Cape Town	Research in traditional medicine and IKS Biotechnology Agricultural research Astronomy
Senegal	Formal agreement exists	Trilateral cooperation on laser technology	French institutions, Senegal university and the CSIR	Laser technology Solar energy research Agriculture
Botswana and Namibia	Formal agreements exist	Trilateral cooperation: Karoo basin correlation project-geological survey	Council for Geoscience MRC	Minerals research Geological survey IKS
Lesotho	Formal agreement exists	Tissue culture	CSIR	Biotechnology IKS Technology business incubation
Mozambique	Formal agreement exists	Genetic improvement of livestock under negotiation	ARC	Agriculture Biotechnology Capacity building
Burkina Faso, DRC, Rwanda, Uganda and Zambia	No formal agreement	IKS projects	MRC	IKS

APPENDIX 3: IWRM QUESTIONNAIRE

**REPORTING ON JPOI TARGET ON
INTEGRATED WATER RESOURCES MANAGEMENT AND WATER EFFICIENCY PLANS BY 2005**

Part 1: Enabling conditions for water resources management (policies, legislation and plans)

1. Please indicate the stages of formulation and approval of key enabling instruments for water resources management in your country, by checking one of the five columns for each instrument.

Water Resources Management – Enabling Instruments	Not relevant	Under consideration	In place but not yet implemented	In place and partially implemented	Fully implemented
Main national instruments	1	2	3	4	5
a) Water Policy				X	
b) National/federal water law				X	
c) National/federal IWRM plan or equivalent strategic plan document				X	

d) National/federal Water Efficiency Plan				X	
Other national/federal strategies that may contribute to promoting IWRM:					
e) Poverty Reduction Strategy (PRS) with WRM component				X	
f) National Development Plan with WRM component				X	
g) National Sustainable Development Strategies with WRM Component				X See (g) below	
h) National Environmental Action Plan with WRM component				X	
International agreements on IWRM to which your country is party::					
i) Regional/sub-regional IWRM plans/strategies or their equivalent				X	
j) Transboundary IWRM plans/strategies (river basins) or their equivalent				X	

For enabling instruments that have been checked in columns 4 and 5 please provide details on name of document, year of approval. For items e–h, please also provide information on how they contribute to IWRM, if this is the case.

Please provide text.

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- (a) **Water Policy:** White Paper on a National Water Policy for South Africa – Department of Water Affairs and Forestry - April 1997
- (b) **National water law:** National Water Act , 1998 (Act 36 of 1998)
 Water Services Act, 1997 (Act 108 of 1997)
- (c) **National IWRM plan or equivalent strategic plan document:** National Water Resource Strategy, First Edition – September 2004
- (d) **National Water Efficiency Plan:** National Water Conservation and Water Demand Management Strategy – August 2004.
 Water Conservation and Demand Management Strategies for the Water Services, Agriculture and Industry, Mining and Power Generation Sectors – August 2004
- (e) **Poverty Reduction Strategy (PRS) with WRM component:** Policy on Financial Assistance to Resource Poor Irrigation Farmers (In terms of Sections 61 and 62 of the National Water Act, 1998) – 29 September 2004
 This policy opens up six possible opportunities (subsidy products) for resource poor farmers (RPFs) who are members of WUAs or other approved legal entities. The six products are:
- Grant on the capital cost for the construction and/or upgrading of irrigation schemes
 - Grant or subsidy on operation and maintenance of waterworks and on the WRM charge and on depreciation charges.
 - Grant for the acquisition of water entitlements for irrigation.
 - Grant for preliminary or remedial socio-economic viability studies and investigations on irrigation schemes
 - Grant on training of Management Committees of WUAs or other approved legal entities
 - Grant on rain-water tanks for family food production and other productive uses
- The six products contribute to IWRM in the following ways:

- Ensuring more equitable allocation of water
- Ensuring efficient use of water
- Ensuring beneficial water use
- Ensuring economically feasible enterprises
- Enabling revitalization of existing dilapidated irrigation schemes

(f) National Development Plan with WRM component: Chapter 3, Parts 8 & 9 of the National Water Resource Strategy (of 2004) outlines the development of physical water resource infrastructure which may be required until 2025. The Strategic Plan of DWAF also contains some of these schemes required within the next five years and the updated targets can be found in the latest update of the Strategic Plan of DWAF, i.e. 2007/08.

(g) National Sustainable Development Strategies with WRM Component: The National Framework for Sustainable Development (NFSD) is in the process of being established by DEAT. Apparently, a national strategy will flow from this.

The DWAF does not have an all encompassing sustainable development strategy for water but most (if not all) of its strategies are in line with the vision and principles for sustainable development in the draft NFSD document. An example is the NWRS mentioned above.

DWAF is also intimately involved in the planning of the National Spatial Development Perspective and on provincial level, the Provincial Growth and Development Plans as well as the Integrated Development Plans at local level. The sustainable development objective features strongly for all water related inputs into these planning instruments.

(h) National Environmental Action Plan with WRM component: First Edition Environmental Implementation and Management Plan in terms of Chapter 3 of the National Environmental Management Act, 1998 (Act No 107 of 1998) (NEMA) – 14 December 2001.
(<http://www.dwaf.gov.za/Documents/Other/EIMP/EIMP.First%20Edition.doc>)

The Second Edition of the plan is currently in draft and the final version must be submitted to the Department of Environment and Tourism by 30 March 2008. Since the First Draft had been published, progress with the plan was covered in four Annual Reports and this information, together with the results of an audit on the progress will be taken up in the Second Edition of the plan.

DWAF recently finalized a series of guidelines, known as the Integrated Environmental Management Series, which will guide the Water Sector to comply with the NEMA legislation.

(i) Regional/Sub-Regional IWRM plans/strategies or their equivalent:

SADC has developed the following regional water protocols, policies and strategies:

Revised SADC Protocol on Shared Watercourses, which entered into force in September 2003

SADC Regional Water Policy 2006

SADC Regional Water Strategy 2005

SADC Regional Strategic Action Plan on Integrated Water Resource Development and Management 2005

(j) Transboundary IWRM plans/strategies (river basins) or their equivalent:

The Orange Senqu River Commission (ORASECOM) (South Africa, Lesotho, Botswana, Namibia) will complete the first phase of a project to develop an Integrated Water Resource Management Plan for the Orange Senqu River Basin by the end of 2007.

The Tripartite Permanent Technical Committee (TPTC) between South Africa, Swaziland and Mozambique will complete the first phase of the Maputo Basin Study in 2008 and is making progress with the development of an Implementation Plan for the Incomati and Maputo River Basins.

The Limpopo River Commission (LIMCOM) (South Africa, Botswana, Zimbabwe, Mozambique) hopes to start with the Limpopo Basin Study in 2008.

2. If your country has an IWRM planning process or an equivalent water resources management planning framework in place, how was it developed and who developed it (e.g. developed using a multi-stakeholder process or developed by the relevant Ministry or through some other mechanisms etc.)

The broad contents and process for the establishment of the National Water Resource Strategy is set out in the National Water Act (Sections 5 to 7) and the same applies for the Catchment Management Strategies (Sections 8 -11). For both the national and catchment strategies an extensive public participation process is prescribed and a compulsory three month period after completion during which stakeholders can submit their comments. In the case of the NWRS, over 2000 comments had been received and had been taken into consideration for incorporation. No Catchment Management Strategy has been completed as yet but guidelines for the development of a Catchment Management Strategy have been made available by DWAF in May 2007. These guidelines can be accessed at <http://www.dwaf.gov.za/Documents/Other/CMA/CMSGuidelineFeb07.asp> . While waiting for the Catchment Management Agencies to get established and functional, the DWAF developed an interim planning instrument for IWRM at local level, namely the Internal Strategic Perspective (ISP). An ISP has been prepared for each of the 19 Water Management Areas, but with limited public participation. The Catchment Management Strategies will eventually replace the ISPs.

3. Please indicate steps/actions being undertaken to bridge the water demand/water availability gap, if such a gap exist in your country?

Please provide text.

The DWAF is addressing this problem in a structured way. The NWRS already gave an overview of the situation in the country, tabling the current and future requirements and the available resources as well as the potential for further development and the document also contains broad strategies for reconciling water requirements and availability. At one level lower (and higher level of detail), the ISPs were undertaken which specified the priorities for more detailed studies. The DWAF started with reconciliation studies (in order to determine strategies) for all big metropolitan areas which drives the economy of South Africa. All interventions are considered, i.e. water use efficiency measures (water demand management), groundwater resources, re-use of effluent, development of surface water resources and desalination of seawater. The next level that will soon start is reconciliation studies for all the smaller towns.

A Water Conservation and Water Demand Management (WC/WDM) Programme was launched in March 2007 by the Minister of Water Affairs and Forestry. Under this programme the National Waterwise Campaign and the blue ribbon initiative was announced. Also under this programme, WC/WDM is piloted and funded in various municipalities to implement technical measures. The national regulation on WC/WDM is currently under development.

4. If your country has developed and approved or is in the process of developing an IWRM Plan or an equivalent water resources management planning framework, please indicate how was the development of the plan/framework funded?
- entirely by national funds?
 - mainly through assistance from donors or IFIs?
 - X through both national and donor funded activities?
 - others?.

Part 2 : Main elements of water resources management policies, strategies, programmes and plans

5. From the following indicative list, please check those programme areas and policy measures that are included in your country's water resources strategies, programmes and plans, while at the same time giving some indication of their status of implementation.

Water Management Programs/Policies/Strategies/Measures	Not relevant	Under consideration	In place but not yet implemented	In place and partially implemented	Fully implemented
Water Resources Development					
Assessment of water resources.				X	
Regulatory norms and guidelines for sustainable development of water resources.				X	
Basin studies for long-term development and management of water resources.				X	
Desalination of seawater.		X			

Rainwater harvesting programs.		X			
Initiatives on water harvesting from coastal fogs.		X			
Supply augmentation programs to meet increasing demand of water.				X	
Programs and policies for recycling of water, wastewater treatment and reuse.				X	
Water Resources Management					
Programs and policies for watershed management.				X	
Program for improving efficiency of water infrastructure to curtail water losses.				X	
Programs and policies on protection and rehabilitation of catchment areas.				X	
Groundwater management program.				X	
Programs/policies to reverse ecosystem degradation and restore their functions.				X	
Programs and policies to avoid floods and to overcome flood				X	

related disasters.					
Programs and policies to combat drought and desertification.				X	
Policies for efficient allocation of water resources among competing uses.				X	
Legislative mechanisms to protect water resources from all types of pollution.				X	
Demand management measures to improve water use efficiency in all sectors.				X	
Integration of drainage facilities in irrigated agricultural development schemes.	X				
Mechanisms to promote conjunctive use of ground- and surface water.				X	
Norms and guidelines to evaluate environmental impacts of water projects.				X	
Cooperative programs for joint management of shared water resources.				X	

Water Management Programs/Policies/Strategies/Measures	Not relevant	Under consideration	In place but not yet implemented	In place and partially implemented	Fully implemented
Water Use					
Water demands survey in different water using sectors.				X	
Programs and policies for managing agricultural water use.				X	
Programs and policies for managing municipal water use.				X	
Programs and policies for managing industrial water use.				X	
Programs and policies for managing other water uses.				X	

Monitoring, Information Management and Dissemination					
Functional hydrological and hydro-meteorological monitoring networks.				X	
Standardized procedures for data compilation, processing and analysis.				X	
A reliable integrated water resources management information system.				X	
Programs for information exchange and knowledge sharing about good practices.				X	
Monitoring and reporting system to determine impact of IWRM reforms.				X	
Capacity Building and Enabling Environment					
Assessment of capacity building needs/ gaps in the water sector				X	
Capacity building programs on different aspects of water resources management.				X	
Establishment of river basin management institutions.				X	

Institutional reforms to enhance the effectiveness/accountability of institutions.				X	
Institutional co-ordination mechanisms for water resources management.				X	
Mechanisms to link water resources management to other economic sectors.				X	
Assessment of water management research needs and gaps.				X	
Mechanisms to enforce water legislation.				X	
Programs for providing advisory (extension) services on WM issues to end users.			X		
Programs for transferring improved and cost effective water saving technologies.				X	
Pro-poor policies and programs in the water sector.				X	
Stakeholders Participation					
Processes for stakeholders' participation in water management decisions making.				X	

Decentralized water resources management structures.				X	
Programs for gender mainstreaming in all aspects of WRM.				X	
Public awareness campaigns to educate people about water-health-poverty links.				X	
Mechanisms to discuss/resolve trans-boundary issues with the riparian countries.					X
Partnerships for water resources management.				X	
Financing					
Water sector investment plan				X	
Strategy for mobilizing financial resources in the water sector.				X	
Norms and procedures for financial sustainability and viability of water schemes.				X	
Gradual cost recovery mechanisms/progressive tariff structures in all water uses.				X	
Subsidies/micro credit programs for promoting water conservation technologies.				X	

Water sector investment plan.				X	
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Please provide additional information on elements not covered above, but form a significant part of your water sector development and management plans, especially within the context of JPOI target and decisions reached during CSD-13 (see guidance note for these references).

It must be clearly understood that the eradication of alien invasive trees (Working for Water Programme) also forms part of the element “Programs and policies on protection and rehabilitation of catchment areas”.

The maintenance of water resource infrastructure and ensuring safe dams.

The introduction of water use charges for the discharge of waste in water resources

Part 3: Implementation, monitoring and evaluation

6. If your country is in the stage of implementation (last two columns of the preceding question), please indicate specific actions/ activities undertaken, including institutional arrangements such as e.g. national implementation body, cross-sectoral coordination mechanisms, stakeholder fora, river basin committees etc.

Please provide text.

Water Resource Development: The National Water Resource Strategy (NWRS), also referred to as “Our blueprint for survival” outlines the water situation in South Africa in terms of the water demand and water availability in each of the 19 Water Management Areas. The National Water Act places an obligation on the Minister of DWAF to establish this strategy and the Minister therefore took responsibility for developing it. The strategy was completed in September 2004. This strategy also outlines the different development options.

The NWA also places an obligation on CMAs to develop catchment management strategies (CMSs) which must be in harmony with the NWRS. The CMAs are in the process of being established and therefore the CMS development for one CMA only commenced recently and others will follow soon. In the meantime National DWAF undertook to document the internal memory i.r.o. WRM and development options by means of the Internal Strategic Perspectives. Whilst the CMAs will in future be responsible for the CMSs as planning instruments, the National DWAF still remains responsible for planning projects of strategic importance and projects where water has to be transferred from one basin to the other. Water balance studies for this purpose are undertaken by DWAF. Examples of such projects of strategic importance are the dam in the Berg River for augmented water supply to Cape Town, the De Hoop Dam for mining purposes and domestic water supply, and the Vaal River Eastern Sub-System Augmentation, for water supply to ESKOM, etc. Some projects are planned and built by National DWAF with funding from the Fiscal while other are funded off budget by institutions such as the Trans Caledon Tunnel Association (TCTA).

Local authorities are responsible for their own water supply and sewage treatment works. They can access finance for such projects through the Municipal Infrastructure Grant programme, currently managed by the Department of Provincial and Local Government. DWAF is currently regulating the allocation of such water use to ensure sustainable development of the water resources, but more of these kinds of regulatory functions on Water Management Area level will, over time, be delegated to CMAs. Various guideline documents have been developed with the aim of setting a standard, e.g. the guideline for the preparation of CMSs, Water Quality guidelines, etc.

Water Resources Management:

The policy on Water Resources Management was developed and approved in 1997. From this flowed many sub-policies and programmes. The encompassing CMS Guidelines for the development of CMSs provides a holistic approach for CMAs of all the necessary initiatives and actions that are necessary for IWRM within a watershed area.

The improvement of water use efficiency and the reduction of water losses is an IWRM initiative that has already been launched on National level. The Minister of DWAF announced water conservation and water demand management (WC&WDM) in 2006 as one of her flagship priorities. This programme includes piloting WC&WDM in selected municipal areas. All possible measures must be taken to conserve water and water demand needs to be reduced to minimum but still acceptable levels. The eradication of alien invasive plants under the Working for Water programme is one of the methods to conserve water and the DWAF, has run this programme for several years with great success. The DWAF utilizes the services of various implementing agents such as other government departments, municipalities, water user associations, etc. for implementing Working for Water.

Another flagship programme of the Minister of Water Affairs and Forestry is the Water Allocation Reform (WAR) programme. A position paper has been drafted (not as yet approved by the Minister) and a number of pilot projects for compulsory licensing in the Inkomati, Mhlatuze and Vaal River WMAs are underway. A new strategy for accelerating WAR is currently being developed.

The DWAF is actively involved in the protection and rehabilitation of catchment areas. In this regard, the Water Resource Classification System is almost complete and will be established soon by announcement in the Government Gazette. Intermediate and comprehensive Reserve quantification is also undertaken by DWAF. Although Regional Offices and later, the CMAs will be closely involved in this exercise, the determination of the Reserve will remain a national competency. The implementation of Resource Directed Measures (RDM) (classifying resources, quantification of the Reserve and the setting of Resource Quality Objectives) will contribute in reversing ecosystem degradation and restore their functions. Planning of structured RDM implementation is currently underway.

As far as Groundwater Management is concerned, active steps have been taken by DWAF to commence with the Groundwater Resource Information Programme (GRIP) in a few provinces.

A groundwater guideline for dolomitic areas has been developed and finalised during 2006 and the DWAF is currently busy with the development of a groundwater guideline for all other areas.

Water quality management is becoming increasingly important as South Africa's resources in especially developed areas get increasingly more polluted. The series on Water Quality Guidelines provide guidance on the management of our water resources in order to protect them from pollution. The Waste Discharge Charging System has been introduced in the new Raw Water Pricing Strategy and polluters can expect to pay for their pollution loads within the coming years.

The DWAF closely collaborates with the National Disaster Management Centre under the Department of Provincial and Local Government on emergency and disaster management i.r.o. water related disasters (floods, droughts, pollution incidents and the outbreak of water borne diseases). Over the past few years numerous local authorities had to be financially assisted to enable emergency water provision. A total of R 792 million has been spent for this purpose since 2003 and recently another R 400 million has been requested in respect of drought stricken authorities as a result of the current protracted drought.

Also in the international arena the South African Water Sector (SAWS) played an important role in providing assistance after the devastating Tsunami disaster of December 2004. The SAWS comprises institutions such as DWAF, Water Boards, South African Institution of Civil Engineering, South African Association of Civil Engineers and private sector firms and individuals.

South Africa is closely collaborating with its neighbouring countries on its shared water courses. This is being done through its international water management institutions ORASECOM, LIMCOM and JPTC.

Water Use:

Water demands for the different water use sectors are determined when water balance studies are done by the National DWAF. For this purpose the demographics of each water management area is inter alia studied in order to determine the water demand for domestic use. The water demand for Stream Flow Reduction Activities, i.e. water demand for forestry is based on previous studies which were done by the Water Research Commission. Water demands are addressed in the NWRS as well as in each ISP and will feature clearly in the CMSs that are currently under development.

Water conservation and water demand strategies have been developed for each of the three main water use sectors, i.e. the Water Services, Agricultural and Industry, Mining and Power Generation Sectors. These strategies will be rolled out in collaboration with DWAF's Regional Offices and the future CMAs.

Strategic Environmental Assessments have been conducted for various Water Management Areas in order to inter alia determine the Forestry potential.

DWAF has developed a strategy for the acceleration of processing licence applications and putting in place a licence progress tracking system. This system will be rolled out over the next few years and National DWAF, Regional Offices and the future CMAs will play a vital role in ensuring the success of this effort.

Monitoring, Information Management and Dissemination:

The different types of surface water monitoring that is currently undertaken are, hydrological flow monitoring and hydro-meteorological flow monitoring, physio-chemical, eutrication, microbial, toxicity, biological and radioactivity monitoring. For groundwater, the levels of groundwater tables, the abstraction from groundwater aquifers and the quality of the groundwater are being monitored. The national network for surface flow monitoring stations has a station density of 1 station per 1500 km². The World Meteorological Organisation's *Guide to Hydrological Practices* suggests a density of 1 station per 1000 km² and it was the Department's intention to expand the national network progressively with 5% per year. This need is currently reinvestigated.

National DWAF, through its Regional Offices, is currently responsible for the running and maintenance of the national monitoring network of

gauging stations. The Regional Offices are responsible for data collection and it is foreseen that a close collaboration between the CMAs and DWAF needs to be cultured as CMAs take over the data collection function for several gauging stations.

The four main information systems for water resources are the following:

- Surface water hydrology
- Water quality
- Groundwater
- Water Use Authorisation and Registration Management System (WARMS)

The responsibility of maintaining these systems will be shared between DWAF and the CMAs but will be co-ordinated by national and regional water resource monitoring committees.

Capacity Building and Enabling Environment:

The Framework Programme for Research, Education and Training in Water (FETwater) was established in 2002. The programme is financially supported by the Flemish Government with UNESCO as implementing agent. Through networking 391 water practitioners and 23 students in the water sector have been trained on specific subjects. The second Phase of the FETwater programme has recently commenced and will see the programme through from 2008 to 2010. Two additional training networks have been established as part of Phase II. The six networks are:

- Groundwater
- Wetlands

- Beneficial use
- CMA Development
- Disaster Management
- Resource Directed Measures

The first CMA, the Inkomati (ICMA) was established in terms of the NWA in 2004 but it took quite a while for this CMA to become functional. The Governing Board of the ICMA is now in place and the agency is busy building its executive structure.

The Breede, Mvoti-Mzimkulu and Crocodile/Marico CMAs have already been established and the Department is in the process of appointing their governing boards.

The DWAF's intentions are to delegate as much as possible operational functions to different kinds of water management institutions so that the Department retains only the policy making and the regulatory functions. In this regard, an Infrastructure Branch was formed within the Department which would then deal with the development, operation and maintenance of all water resource infrastructure. It is the intention to transform the branch into an infrastructure agency which will then take over the infrastructure from DWAF.

The NWRS provides a programme for CMAs to be established and developed into functional institutions. Furthermore the DWAF is establishing new water user associations for the transfer of government irrigation schemes to these institutions. A large number of irrigation boards from the previous dispensation still needs to be transformed into water user associations.

International water management institutions ORASECOM, LIMCOM and a JPTC have been established for Transboundary collaboration on IWRM.

Assessments of the water research needs and gaps are done collectively between the Water Research Commission (WRC) and DWAF, The DG of

DWAF is also a member of the WRC.

A first order strategy for compliance monitoring and enforcement is in place. The department is currently developing an overarching policy i.r.o. compliance monitoring and enforcement for all 11 water uses as defined in the NWA.

Stakeholders Participation

The NWA is very clear on the requirement for stakeholder participation i.r.o. processes such as the establishment of the NWRS, CMSs, Reserves, etc.

The DWAF developed Generic Public Participation Guidelines and distributed these in September 2001. The CMS Guidelines, referred to earlier also contains best practice suggestions for public participation.

The following major public participation exercises is worth mentioning:

- Development of the NWRS
- Public participation for the establishment of CMAs.
- Development of the WAR position paper
- Currently the Compulsory Licensing exercise is requiring major public participation.

Examples of DWAF awareness campaigns are the following; the WASH and VISION 2025 Campaigns.

Financing:

As the sector leader, the Department of Water Affairs & Forestry is leading the development of a Water Sector Programme. While the (municipal) water services component is already comprehensively dealt with in the current document developed during the second half of 2006, the water resources component still needs to be attended to. When this is done, this document will go a long way towards a water sector investment plan.

According to this 2006 document, the investment needs for the municipal water services sector, together with nominal provision for water resource infrastructure development, operations and maintenance to serve this specific sector component, runs in the order of R17,5 billion for the 2007/08 financial year, with an envisaged shortfall of around R3,5 billion. It is currently projected that these investment needs will increase to R18 billion during the 2008/09 financial year, after which it is expected to start to decline, as the MDG targets are being met in respect of the provision of basic water services.

In general the National Water Act and the Water Services Act support the following general financial principles:

- Households should preferably provided with free basic water (up to 6 cubic meters per household per month)
- Water users should be exposed to progressive tariff structures. Sliding tariffs should, e.g. benefit poor households with relatively small consumptions and penalise lavish users of water
- Cross subsidisation should be visible and transparent
- A Waste Discharge Charge System is on the cards, with the policy and implementation strategy in place and the business rules currently being developed
- The development, operations and maintenance of water infrastructure (for services and resource management) should be funded by the users benefited
- The national fiscus largely provides funding for the development, operations and maintenance of strategic water resource infrastructure
- The national government assists the development, maintenance and operations of infrastructure in respect of the provision of basic water services through the Municipal Infrastructure Grants and Equitable Share Contributions to local authorities
- The monitoring and enforcement components of water resource management should preferably be done at the catchment level, with national government being responsible for the regulation of the water sector. Catchment management charges to pay for relevant aspects of water resource management are levied on a wide spectrum of water users. The Department has adopted the SAP Accounts Receivable System and

water use accounts are sent out nationally in respect of all major water uses. Further attention is being given to debt management

- Pilot water conservation and demand management initiatives are funded in various municipalities and a feasibility study is underway on various economic instruments to support WC and DM
- The Department has developed and is implementing a policy to support resource poor farmers financially

7. Defining indicators, establishing networks and setting up mechanisms to ensure monitoring and evaluation are all key activities in any successful implementation of plans and reform processes. If your country has established monitoring and evaluation mechanisms for water resources management policies/strategies/plans, please describe how and by whom it is being done:

Please provide text.

The DWAF has identified strategic WRM projects which are of cross-disciplinary nature. Project Co-ordinating committees have been formed and milestones and performance indicators have been selected. Progress with these projects are reported on a quarterly basis by National DWAF.

Part 4: Outcomes of implementation of IWRM or Water Efficiency plans.

8. Countries which have made some progress in *implementing* IWRM/Water Efficiency Plans or equivalent reform frameworks may already have achieved some of their intended objectives. Sharing these experiences as well as constraints in implementing water resources management reforms may assist other countries in their implementation efforts.

-
- (a) At the time when your country embarked on water resources management reform and planning process, what were the priority problems which were intended to be solved? (e.g. lack of water resources for development, frequent floods, deteriorating water quality, wetland degradation, low water efficiency etc)

Please list three priority problems planned to be solved through water resources management reforms:

- (i) Cost recovery of WRM expenses
- (ii) Redress in water allocation
- (iii) Establishing the NWRS

- (b) What were the main water management measures implemented to address the problems identified under (a) above?—for example: new water policy or law, creation of new institutional structure, decentralization of water management to river basin level and water user associations, upgrading of water resources assessment and monitoring networks, application of economic instruments etc.

Please provide text.

- (i) Development of WARMS; Registration of water use; sending out invoices; clearing payments
- (ii) Development of policy; Developing of a licensing tool kit; Drafting the position paper and finalising through stakeholder participation; Compulsory licensing in pilot catchments

(iii) Developing framework; Water balance studies, Finalising first draft; Extensive stakeholder participation process, reviewing comments; Cabinet approval; Establishing the strategy

(c) Please provide an evaluation/assessment of the results achieved as a result of implementing the water management measures implemented under (b) above to address the problems identified under (a) above.

Please provide text.

(i) Additional revenue and reducing the shortfall on the Water Trading Account

(ii) No results achieved as yet in terms of redress but much more clarity of how to deal with water reallocation

(iii) General buy-in from all stakeholders; NWA implementation in structured manner

(d) Please list constraints or obstacles that your country has experienced in IWRM implementation.

Please provide text.

(i) Resistance from water users as a result of the introduction of new charges

(ii) Inaccurate information provided for water use registration

(iii) Internal capacity

- (iv) Financial constraints
- (v) Slow progress with WMIs
- (vi) Slow progress with redress in water reallocation
- (vii) Pile up in water use licences
- (viii) maintaining stakeholder interest,

Note: Where possible, please provide either an electronic copy of your IWRM Plan, or equivalent, Water Efficiency Plan or other relevant planning documents - or a Web link to these.