

# 1 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))

## 1.1 Incorporating desertification into strategic planning

### 1.1.1 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;
- 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 Coordinatiion 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.

### 1.1.2 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.

## **1.2 Research and information generation and dissemination to combat desertification and drought**

### **1.2.1 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 1<sup>st</sup> 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.

### **1.2.2 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