



Above: The flowering of many plants is tightly regulated by temperature, especially those referred to as geophytes, which include the grass aloe (*Aloe boylei*, top) and tumbleweed (*Boophane disticha*, below). Climate change may altogether prevent flowering in these species. Photos: Dave Thompson

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If you would like to receive more information about becoming a citizen scientist and joining SAEON's network of observers, or if you have already been collecting this environmental information, please contact Dr Dave Thompson on +27 (0) 13 735 3534 / 35. Alternatively, queries about specific projects can be directed to [birds@saeon.ac.za](mailto:birds@saeon.ac.za), [flowerbuds@saeon.ac.za](mailto:flowerbuds@saeon.ac.za) or [leaves@saeon.ac.za](mailto:leaves@saeon.ac.za).

Observer registration forms can be downloaded from <http://ndlovu.saeon.ac.za> and returned via email, fax (+27 (0) 13 735 3544) or post (NRF / SAEON Ndlovu Node, Private Bag X1021, Phalaborwa, 1390). 📧

## 3rd Annual Grassland Partners' Forum South Africa's Grasslands: Your Water Factory

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### Introduction

Grasslands cover about a third of South Africa's land surface, and are responsible for producing most of the water flowing into the country's rivers and aquifers. The preamble to the Grasslands Partners' Forum stated that "the availability of water is going to be a key constraint to growth and development in South Africa. With virtually all surface waters in South Africa already allocated to users, the adoption of innovative water resource management strategies is urgent to ensure that we are able to meet basic needs and sustain ecosystems and economic growth".

The aim of the third annual Grassland Partners' Forum was to discuss water management and biodiversity management in the Grassland Biome. The Grassland Partners' Forum is hosted by the Grasslands Programme, a national initiative driven by the South African National Biodiversity Institute (SANBI), with which the GSSA has been involved for several years (see previous issues of Grassroots).

The first day of the forum consisted of the standard task team meetings. The Grasslands Pro-

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gramme consists of a number of task teams in the areas which have the most impact in grasslands – urban development, agriculture, forestry and mining, as well as a research task team. The task team meetings were open to outsiders, and some new faces were present at the meetings.

### **Grasslands and water symposium**

The main symposium, starting on the second day of the forum, was opened by Dr Tanya Abrahamse, CEO of SANBI, who began by discussing the difficulty of trying to put a real cost to environmental services. She emphasised the importance of collaboration and reminded the audience that experts cannot afford to work in silos.

The chair of the first session, Klaas Mampholo of the Department of Agriculture, Forestry and Fisheries, referred the audience to the mid-term strategic framework adopted by cabinet. Of the ten objectives, two are particularly relevant to the programme and the symposium discussions: growth, and the creation of so-called “green” jobs and sustainable land use.

The keynote speaker, Dr Stanley Liphadzi, CEO of the Water Research Commission, gave an overview of the state of water resources and the capacity to manage them in South Africa. He pointed out that water management must move away from managing only the water, to managing the catchment that provides the water.

### **Informing policy through science**

Prof. Roland Schulze of the University of KwaZulu-Natal then followed with a discussion of future climate scenarios for the country as predicted by various climate models. Many of those scenarios can only be described as terrifying, although at first glance they do not appear unmanageable. Some of the models predict that South Africa’s mean annual temperature will increase by 2°C in the next forty years and up to 5°C in the next century. If these predictions come true they will have devastating effects on our biodiversity and cause tremendous changes in rainfall quantity and distribution. Prof Schulze finished by urging the powers that be to invest in scientific capacity, and urging scientists and policymakers

to engage fully with stakeholders.

Colin Everson of the Council for Scientific and Industrial Research (CSIR) discussed the years of research he and his colleagues conducted in the Drakensberg, at the former Cathedral Peak Forestry Research Station (now part of the Ukuhlamba Drakensberg Park). Over fifty years of detailed ecological and hydrological research was conducted at Cathedral peak and several other research stations, and almost all of those experiments have now been discontinued. The catchment experiments at Cathedral Peak examined the hydrological impacts of various catchment management regimes, including various burning regimes, grazing and afforestation. In general, there was little long-term effect of various regular burning regimes, but fire protection had a significant impact on runoff and soil loss if (or rather when) a fire did get into the catchment. More recently, research on runoff and soil loss in degraded and rehabilitated communal rangelands has been conducted by involving the communities in the monitoring efforts. Dr Everson finished by asking whether the likely increase in the ratio of C4 to C3 plants in montane areas with climate change would result in increased water production.

Mark Gush, also from the CSIR, showed confirmation of the assumption that indigenous trees use less water than the most important species of exotics in South Africa. Interestingly, the water-use efficiency of indigenous trees is lower than exotics, since indigenous trees grow much more slowly than exotics. He asked whether there was a future for indigenous plantations in South Africa. He also requested anybody who knows of other indigenous plantations to contact him, as he was only able to find one plantation of yellowwoods for his research (email: mgush@csir.co.za).

Dr Tony Palmer of the Agricultural Research Council showed the results of the work he has been conducting on relating remotely sensed data, particularly MODIS, to actual herbaceous production and evapotranspiration. Results are mixed, with good relationships in some areas and poor relationships in others. The important question that his work can help to answer is: can we change streamflow by changing grassland management?

Mandy Driver of SANBI and Jeanne Nel of the CSIR showed the remarkable progress that had been made in mapping the so-called National Freshwater Ecosystem Priority Areas. South Africa's freshwater ecosystems are in a "shocking" state, with 80% of the country's rivers degraded. The purpose of the project was to fill the gap between the Water Resource Management Framework, which has a utilitarian bias, and conservation planning strategies, which generally have a terrestrial bias. The Freshwater Ecosystem Priority Areas project will ultimately result in guidelines for water ecosystem management linked to maps, to provide a simple reference for planners, consultants and policymakers making decisions that impact freshwater ecosystems. Several technical products are already available on SANBI's website ([www.sanbi.org](http://www.sanbi.org)). One concern raised by a delegate was whether the final product would be continually updated as changes occurred in freshwater ecosystems.

#### Intervening in communities

Dr Terry Everson of the University of KwaZulu-Natal an account of the work they had done in the Okhombe community in the Drakensberg, where severe erosion and degradation had occurred. They implemented community-based rehabilitation projects to rehabilitate dongas and other erosion sites, as well as a community-based monitoring programme to measure the success of the rehabilitation efforts. Her talk was really inspiring, as a small group of volunteers is still continuing the monitoring programme long after the formal project had finished and funding was stopped. A new Department of Water Affairs project has been initiated in the community to pay community members to rehabilitate dongas, based on a modified version of the Working for Water Model.

One very different and inspiring talk that woke the audience up, both because of the passion of the speaker and the fresh ideas of the subject, was Kate Philip's talk on the second economy. The Second Economy Strategy is an initiative of the Presidency, hosted by the Trade and Industrial Policy Strategies. Despite the name of her programme, the first thing Kate did was blow away the myth that there is such a thing as a "second economy". There is one, inter-

linked, extremely skewed economy, and changes in one portion of the economy affect all other sectors of the economy. Because policymakers tend to view South Africa as having two economies, developed and undeveloped, many strategies are developed to assist one of these "two economies" without how it influences the other economy. For example, poultry programmes in poor rural areas initiated by provincial agriculture departments usually simply have the effect of shutting out existing small-scale poultry producers, who cannot compete with a million-rand government poultry project. Many of Grassroots readers will have first-hand experience of these types of disastrous projects. At the same time, the Industrial Policy Action Plan, astonishingly, does not prioritise employment. The structure of our economy works to create inequality and maintain it, and no matter how entrepreneurial an individual might be, their small business has little chances of success and less chances of growing in the current, highly centralised, economy. The second economy strategy has developed a new community work programme which is very different to other poverty relief programmes such as the Expanded Public Works Programme. Many poverty relief projects work on the principle of creating a large number of short-term jobs, on the assumption that this work will provide cash and skills and empower people. These assumptions are not always met. For example, an informal trader could go off for three months to work on a public works programme, only to return and find that her trading space has been taken.

The Community Works Programme works on the principle of providing permanent, stable, part-time employment for large numbers of people – they only consider projects employing a minimum of a thousand people. The work is two days a week, which provides both the time and stability for beneficiaries to continue with their existing activities and potentially take more risks. The projects are managed centrally but chosen by the local municipality ward council. Projects have been rolled out in about twenty wards, with the aim being to have projects in every municipality in the country.

The Grasslands Programme launched their new book at a cocktail function that evening. The book

“The South African Grasslands Programme: A Partnership for the Future” is beautifully illustrated and describes the history of the Grasslands Programme and some of the results of the project to date.

### **Discussion**

The writer did not attend the second day of the symposium, which consisted of several more talks as well as a visit to a significant peatland. However, some observations on the symposium can still be made.

There were a number of very interesting and relevant talks at the symposium, with some good science presented. However, the symposium programme contained no space at all for any “real world” representatives to talk, with the possible exception of Steve Germisthuizen of Forestry SA on the second day (and Steve is the Chair of the Forestry Task Team for the Grasslands Programme). With the exception of the forestry sector, there was a severe shortage of industry representation at the symposium, and at the Task Team meetings.

The lack of industry representatives can only be described as disturbing. If the Grasslands Programme is to achieve its objectives, then it needs to engage with all stakeholders, and if the stakeholders are not bothering to attend a major event on the Grasslands Programme calendar then it means they have better things to do. In contrast, at the recent fire, forestry and grasslands symposium hosted by the GSSA and the Forestry Task Team of the Grasslands Programme, at least half of the delegates were from industry. Talks by industry representatives made up around half of that programme.

A major part of the discussion at the end of the first day was around getting results out to the people who count – the land users. If the Grasslands Programme is going to be seen to be relevant to those land-users then it will have to start delivering relevant products.

One area where a great deal of exciting potential exists, is in the proposed demonstration areas, where “ideal” farming practices on both commercial and communal farms will be encouraged in order to

demonstrate the economic and ecological benefits of sound agricultural practices. The Wakkerstroom demonstration project is already well advanced. There are many monitoring and research opportunities there, since the demonstration will require detailed measurements in order to work. A successful demonstration project will also have far more impact on land-users’ management systems than lectures or pamphlets, as farmers are more likely to follow the example of peers who lead the way than of academics or extension officers. 📌