

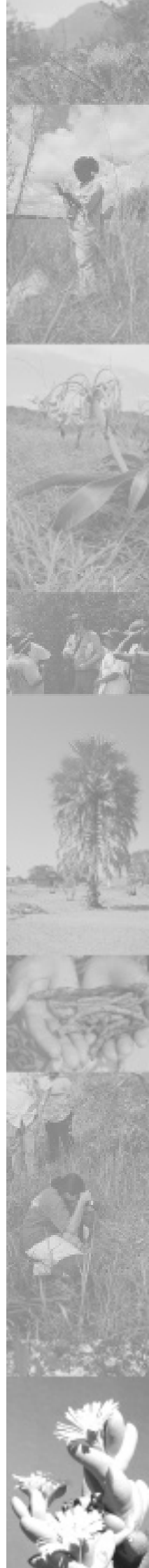
Addressing the Needs of the Users of Botanical Information

Proceedings of a National Workshop for Stakeholders
and End-Users of Botanical Information and Herbaria

National Herbarium, Pretoria, Gauteng, South Africa
6–8 February 2002

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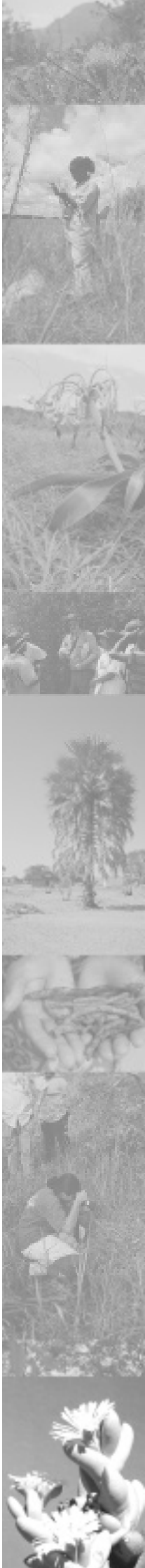


**“Enter the ‘stakeholder society’:
consultation, transparency, corporate
governance, accountability and public
rights.**

These are today’s new maxims.

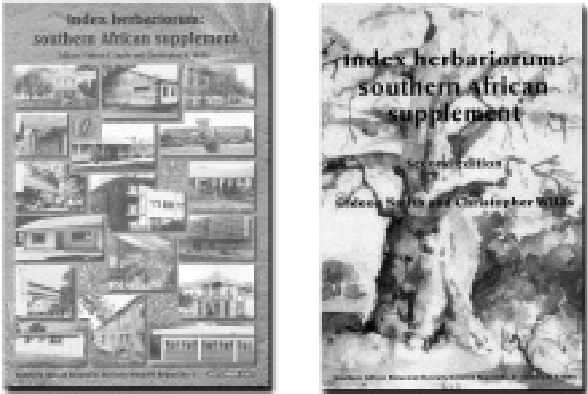
**Some are calling it the new corporate
agenda and the ‘triple bottom line’ —
integrating financial, social and
environmental responsibilities.”**

W. Visser. 2000. Opinion. Sinking roots into ethical ground of business.
Sunday Times Business Times June 18: 24.




Southern African Botanical Diversity

What?
Inventory of collections



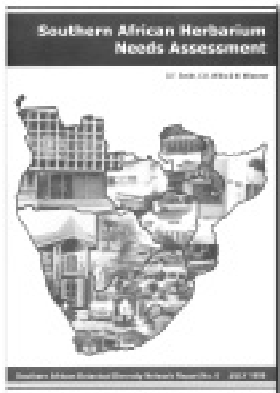
The top box contains two book covers. The left cover is titled 'Index herbariorum: southern African supplement' and features a grid of small images of herbarium buildings. The right cover is also titled 'Index herbariorum: southern African supplement' and features a large image of a tree trunk.

Who?
Expertise



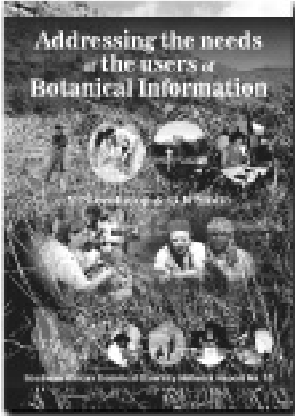
The middle-left box contains a book cover titled 'Plant taxonomic expertise: An inventory for southern Africa'. The cover shows a landscape with a river and various plants.

Needs of herbaria



The middle-right box contains a book cover titled 'Southern African Herbarium Needs Assessment'. The cover features a map of Southern Africa with various locations marked.

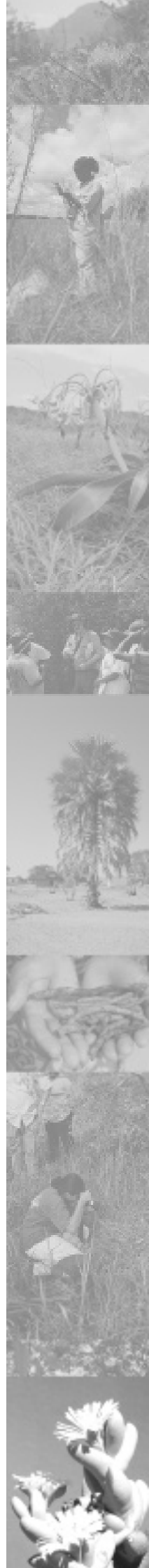
Needs of end-users



The bottom box contains a book cover titled 'Addressing the needs of the users of Botanical Information'. The cover shows a group of people sitting around a table, engaged in a discussion.

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Finally we would also like to thank Ms Sandra Turck for designing the cover, Dr. O.A. Leistner for comments on the text, and Dr. J.C. Scheepers for technical editing of this document.

Additional Photo Credits



1 – *Aloe pilansii* (Photo: NBI), 2 – Christopher Shabalala taking notes during a collection/training session (Photo: S. Siebert), 3 – Licuati Forest Reserve (Photo: S. Siebert), 4 – *Moraea neopavonia* (Photo: NBI), 5 – Salamao Maticela and Abilio Manhique from Mozambique collecting along the margins of the Licuati. (Photo: S. Siebert), 6 – *Ferraria schaeferi* (Photo: G. Owen-Smith), 7 – A basket containing a partial harvest of chikanda obtained from Mpika District (Photo: P. Phiri), 8 – A widespread and abundant member of the Proteaceae, *Leucospermum saxosum*, found in the northern Chimanimanis (Photo: J. Timberlake), 9 – Florence Nyirenda examining grasses during a SABONET training course (Photo: M. Mössmer), 10 – *Crinum delagoense* (Photo: N. Govender), 11 – Prof. Braam van Wyk teaching participants during a recent SABONET expedition (Photo: S. Siebert), 12 – *Hyphaene petersiana*, a common palm in the Okavango Delta (Photo: M. Setshogo), 13 – The tubers of edible orchids that are harvested for consumption are called ‘chikanda’ or African polony in Zambia (Photo: M.G. Bingham), 14 – Nikaya Govender photographing a rare orchid in Maputo Elephant Reserve (Photo: S. Siebert), 15 High-rainfall miombo woodland in north-eastern Zambia (Photo: J. Burrows), 16 – The erect form of *Juttadinteria deserticola* (Photo: G. Williamson), 17 – Mwinilunga, local centre of diversity and endemism, Zambia. (Photo: J. Burrows), 18 – *Disa walleri* (Photo: G. Williamson) 19 – Inhamitanga Forest in pristine condition (Photo: J. Burrows).

Forewords



I am very pleased to be able to provide a foreword to this important publication in the *South African Botanical Diversity Network Report Series*. For many years it has been clear that the world's major botanic gardens need to continue to evolve if they are to maintain their relevance in the modern world. In terms of visitors to the gardens, this means making the transition from presenting merely a passive collection of plants to a more welcoming and engaging approach to education that is not only fun, but that also addresses significant issues in the area of conservation and environmental sustainability. In terms of science, and especially for major herbaria and

libraries, this means learning more about the needs of users of botanical information and responding appropriately.

The publication of this account of the first National Workshop for Stakeholders and End-Users of Botanical Information and Herbaria represents an enormous step forward towards a better understanding of what products and services are required by a broad range of users—beyond other plant science specialists. Especially important has been the involvement of local community interests, from traditional healers to land managers, in setting out what they require from

plant diversity and information experts. The results of this workshop ensure that herbaria and other information resources on plant diversity are no longer operating in a vacuum as they set out their plans for the future. The Workshop Report highlights opportunities to change priorities and to produce new kinds of outputs. As such, it also points towards important ways in which the great resources of plant diversity science, which have been built up over many decades, can remain relevant for the future.

—Peter R. Crane FRS
Royal Botanical Gardens, Kew

The last decade of the 20th century was characterized by the development and implementation of “strategic” and “action” plans. At first, it was industry that became interested in the issues of strategic planning. It was not until the late 1990s that academic and research institutions became involved with similar initiatives aimed at developing clear mission statements, identifying priorities, and defining new approaches to respond to certain needs. They also provided the framework to start thinking about the relevance of scientific and academic activities to society at large and to the wellbeing of humankind.

As is common in many of our actions, however, our institutions did not reach a clear understanding of whom they worked for, who were the real users of the information they generate. At universities, for example, it seems that the end-user is the student and, perhaps through him/her, society will somehow benefit. Research centres may develop ties with industry, for example, but at a very low level and making very limited impact.

Botanical institutions, including herbaria and botanical gardens, are no exception. Scientists in general have a hard time understanding that our research and the results it produces cannot continue to be for the benefit of a fairly small scientific community. This is true everywhere, but probably

more so in the developing world.

Because we owe ourselves to society, we need to identify ways to reach out. The conclusions of the Workshop for Stakeholders and End-users of Botanical Information and Herbaria held in South Africa constitute a most welcome contribution towards our understanding of our role in today's changing world. We cannot continue to carry out “business as usual”, however comfortable that position may be.

I find it interesting that issues such as the functions of herbaria were discussed during the workshop. For a very long time we felt that we knew what we were doing in herbaria and for what reason, but it is obvious now that the picture is not so perfect.

The information and service requirements that were identified are probably quite obvious to a pragmatic and practising botanist who would recognize them as some of his/her most important duties: the preparation of up-dated and reliable species lists, the development of workable botanical information systems, complete (fully representative) herbarium collections, and plant identification services that work. The difficulty comes in trying to identify those who need the information we provide. The workshop also dealt with this matter in some depth. Another serious difficulty has to do with the costs associated with

providing desired information (including software and hardware, for example).

Once it becomes available, the information resulting from this workshop will be extremely useful in many developing countries that struggle day in and day out with the issues of extremely weak economies, shrinking budgets, new (mostly unexpected and increasingly dramatic) societal needs and a widening gap between the amazing technological growth in the developed world as opposed to the developing world. Everybody seems to agree that information on biodiversity is urgently needed. However, the link between those who need the information and those who have it and who produce new information on an ongoing basis, has not been successfully made.

It is hoped that the workshop held in Pretoria, and other similar meetings that are being planned, will make very important contributions not only to our understanding of current needs but also to the way changes in our way of doing things should be implemented in the very near future. Unless we deal with these issues now, our institutions will become obsolete, and the vacuum will somehow be filled.

—Dr Enrique Forero
Universidad Nacional de Colombia,
Bogotá, D.C., Columbia

Abbreviations and Acronyms

A	Harvard University, Cambridge, Massachusetts, USA	NBG	Compton Herbarium, National Botanical Institute, Cape Town, South Africa
ABET	Adult Basic Education and Training	NFI (TM)	Northern Flagship Institution (Transvaal Museum)
AD	State Herbarium of South Australia, Adelaide, Australia	NGO	Non-Governmental Organisation
AFLP	Amplified Fragment Length Polymorphism	NH	Natal Herbarium, National Botanical Institute, Durban, South Africa
AM	Albany Museum, Grahamstown	NMB	National Museum, Bloemfontein
BAF	Herbario, Museo de Botánica Juan A. Dominquez, Buenos Aires, Argentina	NMP	Natal Museum, Pietermaritzburg
BM	The Natural History Museum, London, England, UK	NRF	National Research Foundation
BO	Herbarium Bogoriense, Bogor, Indonesia	NSW	National Herbarium of New South Wales, Sydney, Australia
BOL	Bolus Herbarium, Botany Department, University of Cape Town, South Africa	NU	Bews Herbarium, School of Botany and Zoology, University of Natal, South Africa
BRI	Queensland Herbarium, Indooroopilly, Australia	NY	New York Botanical Garden, Bronx, New York, USA
CBD	Convention on Biodiversity	P	Muséum National d'Histoire Naturelle, Paris, France
CFR	Cape Floristic Kingdom	PEM	Port Elizabeth Museum
CSP	Corporate Strategic Plan	PRE	National Herbarium, National Botanical Institute, Pretoria, South Africa
DNSM	Durban Natural Sciences Museum	PRECIS	PREtoria Computerised Information System
EIA	Environmental Impact Assessment	PRU	H.G.W.J. Schweickerdt Herbarium, Department of Botany, University of Pretoria, South Africa
ENCB	Herbario, Departamento de Botánica, Escuela Nacional de Ciencias Biológicas, Mexico City, Mexico	RAMSAR	Convention on Wetlands of International Importance especially as Waterfowl Habitat, adopted in Ramsar, Iran, in 1971.
FRD	Foundation for Research Development	RSSD	Research and Scientific Services Directorate of the NBI
FSA	Flora of Southern Africa	S	Swedish Museum of Natural History, Stockholm, Sweden
G	Conservatoire et Jardin botaniques, Genève, Switzerland	SAAB	South African Association of Botanists
GAB	National Herbarium, National Museum, Gaborone, Botswana	SABONET	Southern African Botanical Diversity Network
GEF	Global Environment Facility	SADC	Southern Africa Development Community
GIS	Geographical Information System	SAHCWG	South African Herbarium Curator Working Group
GRA	Selmar Schonland Herbarium, Albany Museum, Grahamstown, South Africa	SECOSUD	Service for Environmental Conservation of Biodiversity and for Sustainable Development
GTI	Global Taxonomy Initiative	SFI (SAM)	Southern Flagship Institution – Iziko-Museums of Cape Town (South African Museum)
HBU	Historically Black Universities	SRGH	National Herbarium and Botanic Garden, Harare, Zimbabwe
IUCN	The World Conservation Union	STEP	Sub-tropical Thicket Eco-system Planning
IUCN-ROSA	The World Conservation Union's Regional Office for Southern Africa	TREPP	Transvaal Rare and Endangered Plants Programme
J	Charles E. Moss Herbarium, Botany Department, University of Witwatersrand, Johannesburg, South Africa	US	Smithsonian Institute, Washington DC, USA
K	Royal Botanical Gardens, Kew, England	UNDP	United Nations Development Programme
KRC	Kirstenbosch Research Centre	USAID	The United States Agency for International Development
LE	Komarov Botanical Institute, Leningrad, Russia	WWF	World Wide Fund for Nature
LIL	Herbario, Área Botánica, San Miquel de Tucumán, Argentina		
LYD	Lydenburg Herbarium		
MAL	National Herbarium and Botanic Garden, Zomba, Malawi		
MEL	National Herbarium of Victoria, Melbourne, Australia		
MEXA	Herbario Nacional, Mexico City, Mexico		
MPB	Mpumalanga Parks Board		
MPU	Institut de Botanique, Montpellier, France		
NETCAB	Regional Networking and Capacity Building Initiative for Southern Africa		
NBI	National Botanical Institute		

Executive Summary

In an increasingly competitive scientific and fiscal environment, all research institutions must cater for the needs of their stakeholders and the end-users of the products they deliver, if they are to survive in the new millennium. Globally, government funding to research institutions seems to be shrinking, and, in a stakeholder society, these institutions must seek to increase their revenue by delivering those products and services that its customers require and can afford. This is no different for herbaria and the producers of botanical information, who must produce and deliver botanical information and services that their customers require, in the format required.

To assess the needs of the stakeholders and end-users of botanical information and herbaria, it was decided to hold a series of national end-user workshops to exactly determine the needs (in terms of products and services) of these groups. It was envisaged that such workshops would achieve the following objectives:

1. Gain clarity on the **functions** and **activities** of herbaria
2. Compile a **comprehensive list** of the **users** of information generated by herbaria
3. Determine the nature of the botanical **information needed** by user-groups
4. Establish the **format** in which this **information** is required
5. Set **priorities** and **quantify the costs** associated with providing the desired information to user groups
6. Compile a **final report** that can act as a guide to the achievement of these objectives

The first National Workshop for Stakeholders and End-Users of Botanical Information and Herbaria was held at the National Herbarium of the National Botanical Institute (NBI) in Pretoria, South Africa from 6 to 8 February 2002, and organised by the SABONET Regional Office. The workshop was hosted by the National Botani-

cal Institute and was attended by 34 stakeholders and end-users, including: agricultural institutions, botanical societies, conservation agencies, environmental consultants, ethno-botanists, traditional healers, tour operators, universities and several others.

During the three-day workshop, ten information and service requirements were identified and discussed. The five most important requirements (in order of priority) are the provision of:

1. Annually updated, correct name lists for the entire FSA (Flora of Southern Africa) region—and later on for the whole of Africa. These lists should be available in both hard copy format and electronically on the Internet, and should contain, in addition to the old and new names, the following information: reason for name change (nomenclatural/taxonomic), the date of publication and the source of the new name.
2. Correct, up-to-date, standardised species lists (available in both hard copy format and electronically on the Internet) for grid-areas, provinces, countries, and the entire FSA region. Both basic species lists (with only the genus, species and family names) and “added value” species lists (with information on endemic species, red data species, alien species, invasive species, economically important species etc.) should be available.
3. A centralised (at the NBI) web-based Integrated Botanical Information System that should be developed and implemented. It should include a literature database, a “Quick Identification Guide”, and just about any type of information one could possibly want about a plant, including: scientific name, synonyms, common names, locality data, distribution maps, conservation status, growth form, life form, phenological data, economic impor-

tance, uses, information on the genus and the family, botanical art and photographs, full descriptions and phylogenetic relationships.

4. Fully representative herbarium collections. Current collections should be expanded by organising coordinated collection trips that target under-collected areas and under-collected taxa, so that every single taxon present in the region is represented in (at least) the National Herbarium (PRE).
5. Plant identification service. Though this is a current activity of most herbaria, and especially of the NBI’s herbaria, this service should be enhanced and improved. Turnover time especially should be reduced—service should be faster. Specialist identification services (e.g. bark identification) are also needed. This in turn requires the lessening of strict specimen requirements for identification. A sliding-scale fee structure dependent on various elements is also suggested.

Other questions that received attention during the workshop are: who are the possible users of herbaria and botanical information, what are the functions of herbaria, and what are the practical and financial implications of any changes that might be implemented as a result of the requirements of the stakeholders and end-users.

To provide adequately for the needs of the stakeholders and end-users of botanical information, it has been estimated that the following funds are needed (Table 1):

Table 1 – Summary of financial needs

Libraries and literature	Variable
Capital equipment	US \$ 531 360
Staffing	US \$ 1 380 000
Computerisation	US \$ 111 195
Research	US \$ 100 000
Total	US \$ 2 122 555