



## NAMIBIA'S NATIONAL ^

*to the Fifth Conference of Parties  
on implementation of the Convention on Biological Diversity*

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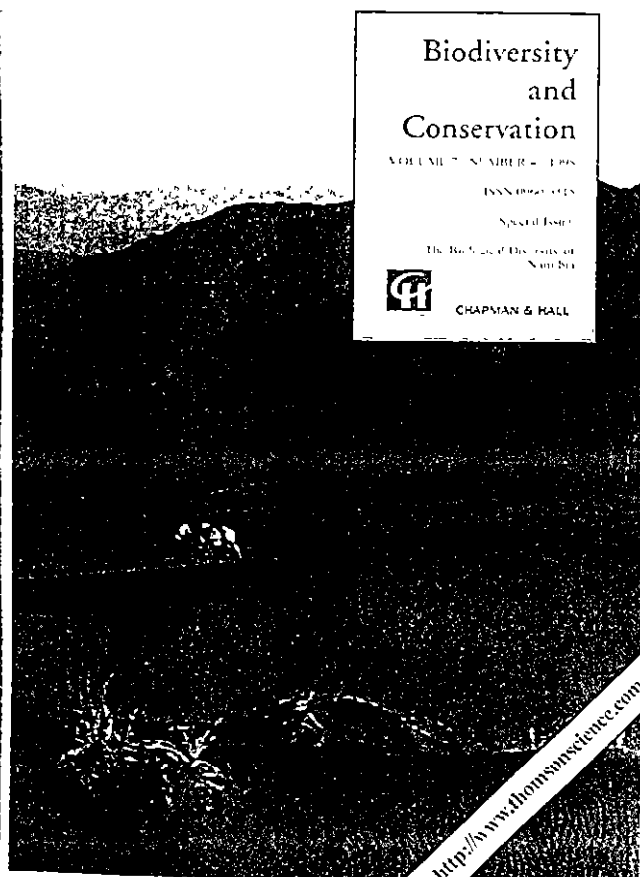
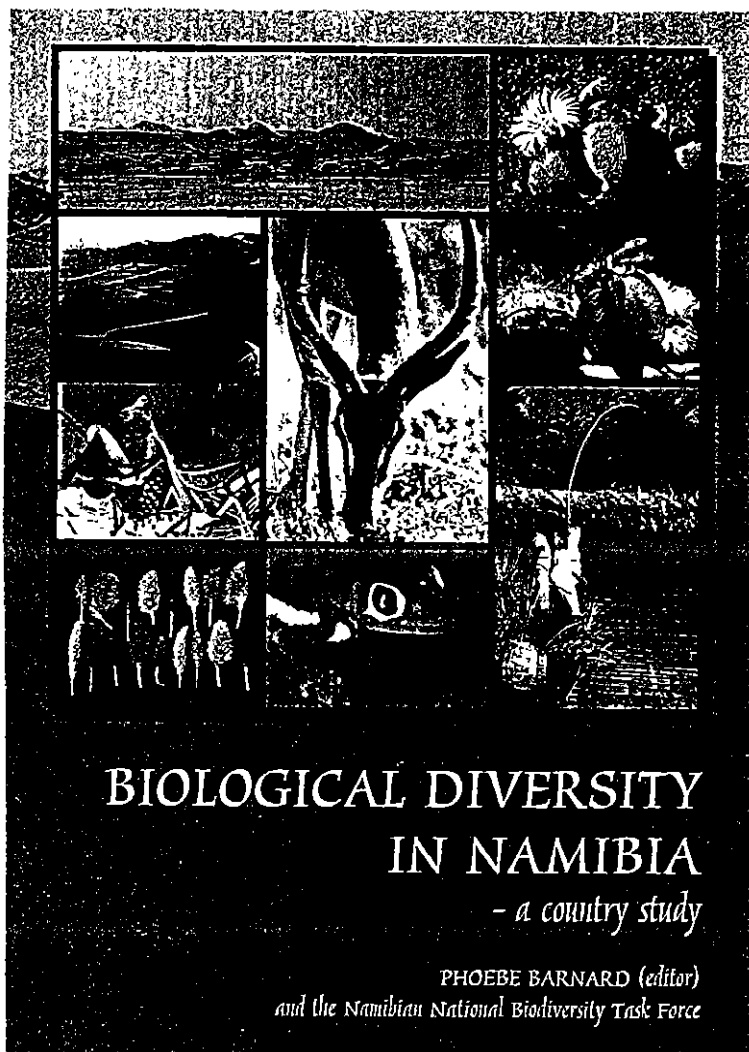
# Summary

This national report to COP-5 of the Convention on Biological Diversity describes Namibia's participatory planning process for implementing the CBD, with reference to key thematic issues, relevant articles and some broader issues of integration, trade, and policy reform.

Namibia was an original signatory of the CBD in June 1992. We ratified the convention in 1997. However, there is a long history of biodiversity conservation and research activities in Namibia long before the entry into force of the convention, and we have very active national institutions in the biodiversity field. Our country study was published as a book in 1998 (see box below) and our national biodiversity strategy and action plan (NBSAP) is due for completion in the third quarter of 2000. This report focuses on our perhaps unusually participatory approach to the NBSAP, and its scope as the planning framework for implementation of the CBD

This report should be viewed in conjunction with the comprehensive book, *Biological diversity in Namibia - a country study* (Barnard, P., ed. 1998, Namibian National Biodiversity Task Force, Windhoek, 332 pp, full colour, numerous tables, graphs, maps and appendices, ISBN 0-86976-436-5). This book summarises what is known of the country's biological diversity at the habitat, species and genetic levels, and how diversity can be safeguarded through economic valuation, legislative protection, and policy reform. A few copies of this book are available at COP-5, or by request to the National Biodiversity Program at [pb@dea.met.gov.na](mailto:pb@dea.met.gov.na). Later in 2000, it will be downloadable from our website (see cover page).

A fuller account of some key scientific, economic and policy issues is also available in a special issue of *Biodiversity & Conservation* 7(4) 1998.



# Overview of Namibia's involvement in the CBD

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Namibia was one of the original signatories of the CBD in Rio de Janeiro in June 1992. The convention was signed on the country's behalf by His Excellency President Dr Sam Nujoma, who led the Namibian delegation to Rio. The CBD was later unanimously ratified by Parliament in March 1997, by which time we were confident of being able to implement it successfully.

We established our first national policy on biodiversity in 1994, our National Biodiversity Programme in 1994. However, the country has a long history of active involvement in biodiversity research, protected area management and many of the other initiatives now encapsulated in the articles of the CBD.

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## Box 1. Namibia at a glance

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<b>Land area</b>	823,988 km <sup>2</sup>
<b>Population</b>	1.61 million (1995 <i>estimate</i> )
<b>Population growth</b>	3.1% per annum
<b>Population density</b>	1.7 persons / km <sup>2</sup>
<b>Mean fertility</b>	6.1 children/ woman
<b>Urban population</b>	28% of total
<b>Life expectancy (yrs)</b>	Men 59.1; Women 62.8
<b>Per capita income</b>	US\$1610 / annum
<b>Economic growth</b>	Real GDP growth 2.9% (see Box 1.2)
<b>Climate</b>	<i>Hyper-arid (west) to mesic (east)</i>
<b>Rainfall</b>	<i>Mostly summer rain, increasing &amp; variable towards west coast</i>
<b>Biomes</b>	<i>Desert, savanna, broadleaf woodland</i>

*Updated from: National Planning Commission, Economist Intelligence Unit*

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Namibia is one of Africa's driest countries, skirted by the Namib and Kalahari Deserts and desiccated by winds off the cold Atlantic and the hot southern African basin. It is therefore a nation with unusual and impressive habitats and species, many of them unique to the country or to the southwestern African arid zone.

From its pre-Independence days of South African occupation, Namibia inherited a wide variety of apartheid-influenced laws and policies on natural resource management which have had to be extensively revised and replaced. However, it also inherited a strong scientific tradition and some very good biodiversity information. Part of our task has been to update this information and bring previously inaccessible, often unfocused information into the public domain to support environmental planning.

### *Publications about Namibian biodiversity*

A country study book (see Summary text box) summarises what is currently known of the country's biological diversity at the habitat, species and genetic levels, and how this diversity can be effectively safeguarded through economic valuation, legislative protection, and policy reform. The book is available on request to the National Biodiversity Program at [pb@dea.met.gov.na](mailto:pb@dea.met.gov.na). Later in 2000, it will be downloadable from our website (see below or cover page).

A fuller account of some key scientific, economic and policy issues is available in a special issue of *Biodiversity & Conservation* 7(4), 1998.

Posters for schools and political leaders are underway, our national programme website/clearing-house mechanism (<http://www.dea.met.gov.na/programmes/biodiversity.html>) is scheduled for major updating in June 2000.

# Namibia's approach to implementing the CBD

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At Independence in 1990, the newly formed Ministry of Environment and Tourism (then called 'Wildlife Conservation and Tourism') was given a government mandate for environmental protection -- implicitly including biodiversity conservation, since the term was then little-known and narrowly understood in Namibia. The Ministry's focus was on very traditional aspects of parks and game management, and there were many gaps related to broader environmental issues, including pollution, environmental impact assessment, community resource management, economic valuation and so on. Therefore, around the time of the UNCED meeting in Rio in 1992, several committed members of the Ministry launched a new Directorate of Environmental Affairs (DEA) to fill these gaps.

Apart from leading the biodiversity conservation process, the DEA houses very active programmes on community-based natural resource management, desertification, industries and pollution, climate change, environmental assessment, resource economics, information systems, environmental legislation and policy, a national atlas of natural resources, an environmental investment fund, and natural resource accounting.

The DEA does this with a very small core staff of 7 government employees, bolstered by up to 22 project employees, postgraduate students and trainees at any one time. The agency is thus fairly dynamic, resembling more a university institute than a civil service department. It works by coordinating and stimulating its partner institutions, including government ministries, NGOs, community organisations, tertiary institutions and the private sector -- virtually all programmes are steered by a diverse and broad-based committee, and implemented by numerous sectors.

## Biodiversity planning process and structures

The Namibian National Biodiversity Programme was established as a DEA core programme in mid-1994 with the hiring of a full-time coordinator (Phoebe Barnard). It is run by a National Biodiversity Task Force of

committed technical and director-level management members from different agencies (Figure 2). In mid-1997, Sem Shikongo joined as a part-time (now full-time) trainee officer with portfolios for traditional knowledge, forest biodiversity, biotrade and related issues, and in 1999 Connie Claassen joined us as a part-time programme assistant with a portfolio for public liaison and awareness. Her post is shared with the Environmental Assessment Unit of DEA.

In Phase I (1995-98), the 'country study' phase, the programme was run as a comparatively small unit with input from different sectors made via the Task Force. In Phase II (1998-2000), the 'biodiversity strategy' phase, the Task Force took a back seat and became an umbrella body (still with decision-making powers), while a number of emerging "working groups," "focal groups" and committees were given the mandate to develop different sections of the National Biodiversity Strategic Plan (Figure 1). These groups still had a strong technical focus, but were much broader-based, pulling in a number of individual and organisational members not represented on the Biodiversity Task Force. Some, like the Traditional Knowledge Focal Group, have had a reasonable grassroots profile, while some, like the Namibian Long-term Ecological Research (Na-LTER) Committee, have been developed purely by scientists (Figure 2).

The regular membership of these working groups is bolstered by broad input from interested stakeholders at workshops. However, despite attempts to increase grassroots involvement in this process, it can only still be categorised as quite low. This we attribute to a number of constraints, including a generally very low level of civil society activism in Namibia, public apathy and passive trust in government, 'project fatigue' and even some distrust of the aims of the programme. However, for a country with a small population and even smaller technical community we rate the involvement of different sectors and individuals in this programme as high.

# Experiences and lessons from the country study process

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We published our biodiversity country study as a full-colour soft-cover book in 1998'. We had not followed the UNEP guidelines very closely, favouring a structure more in support of national needs and priorities, but of course we attempted to strike a balance between the national and international aims. Aspects such as terrestrial biodiversity summary statistics and policy recommendations for Namibia were emphasised, and "unmet financial needs" and budget summaries were de-emphasised. Much of our basis for seeking new funding and initiating new activities to fill identified gaps will be presented in the NBSAP, our approach to which is outlined below.

From arrival of funding to publication of the book, the biodiversity country study process took us 3.5 years, not the 12 months initially proposed by UNEP. We do not regret this because the process and the product were good ones for the country, for several reasons'

First, the process was wholly Namibian: planned, driven, and executed. An early external attempt to impose foreign consultants on us failed because of perfectly adequate expertise and commitment within the country (as well as local resistance to the idea of having foreign consultants of unproven quality conduct such an important task). We produced the country study with only a little over 45% of our UNEP-granted budget – the remainder had been allocated to the foreign consultants, and was apparently written off by UNEP when most of this was not used.

Second, the process allowed Namibian biodiversity specialists, who had worked in relative isolation for many years, to develop teammanship and satisfaction at seeing their work synthesised into a greater whole.

Third, the process allowed for numerous beneficial side-effects widely perceived as a great success, such as the computerisation of specimen databases, the translation of old reports and the repatriation of foreign-held data.

Finally, the product was one for which contributors received wide praise and recognition, and which they believed was an attractive synthesis of the issues and their own work

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Barnard, P (ed) 1998 *Biological diversity in Namibia – a country study*. Namibian National Biodiversity Task Force and UNEP, Windhoek, 332pp full colour, ISBN 0-86976-436-5

# Structure and status of Namibia's biodiversity strategy and action plan

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Namibia's NBSAP is being consultatively developed by the working groups of the National Biodiversity Task Force as a combined strategy and action plan. It will most likely be called *Biodiversity and Development*, with the subtitle ***Namibia's ten year strategic plan of action for sustainable development through biodiversity conservation 2000-2010***.

This will be produced in the third quarter of 2000 as a slim, A4-format, non-glossy but attractive and user-friendly booklet. It will be primarily aimed at planners and decisionmakers in government, NGOs, and the private sector. A layman's guide to the NBSAP for the broader civil society in plain language is being considered

It will consist of three broad sections.

- an introductory section aimed at explaining the key issues and significance to politicians and decisionmakers – probably including positive and negative scenarios for Namibia
- a “strategy” section consisting of goals, strategic statements and short lists of priority activities (drawn from the participatory process to be summarised in its Appendix);
- an “action plan” section (as a detailed Appendix) consisting of the detailed thematic action plans in the form of logical framework matrices which were developed by the working groups. These logframes include objectives and priority activities, timeframes, lead agencies, indicative budgets, priority ranks, and logical order for implementation

Our approach has been modelled most closely on the Australian National Biodiversity Strategy, although it differs fundamentally in both process and presentation.

The NBSAP booklet will also provide an easy-reference basis on which funds can be mobilised or re-orientated from government, bilateral and multilateral sources.

The NBSAP will be presented to Cabinet for approval. We have built awareness before this presentation with two permanent secretaries' roundtables and briefing summaries, and will undertake individual briefings, a presentation to the Permanent Secretaries' Planning Committee and possibly a prior briefing to Cabinet and to State House. The President and Prime Minister have not been formally involved in this process so far, but both have opened workshops about one key element of the NBSAP, the National Biosafety Framework. Namibia has a strong Cabinet which may prove to be a major asset in this process. Unfortunately, our pace of political awareness building was slowed for several months as the result of a Cabinet reshuffle in March 2000.

## Who is involved?

Dialogue to build the NBSAP has been taking place among a fairly broad section of Namibian society, with input from Government ministries, NGOs, parastatals, unions, private sector companies, grassroots organisations and interested persons (Figures 1, 2). However, most, but not all, of this dialogue has been centred in Windhoek, and by far the largest contribution has been from technical specialists

Most of the formal technical-level input has been via the technical working groups of the National Biodiversity Task Force (Figure 1). Political guidance is being pursued by members of the Task Force from different sectors and by the National Biodiversity Programme staff via meetings with senior representatives of Government Ministries, NGOs, specialist societies and boards with an important political perspective on the Namibian environment and society. Both levels of input are essential for shaping the strategic basis of the national strategy and action plan.

# Policy reform and integration of biodiversity into national development planning

Integration of biodiversity into national policy reform and development planning is proceeding through:

- close cooperation with the Second National Development Plan (NDP2) process;
- round-tables on biodiversity and the NBSAP with Permanent Secretaries, National Planning Commission and other decisionmakers,
- a broadly consultative environmental legislation review/reform process run by the Directorate of Environmental Affairs in close association with the National Biodiversity Programme,
- a policy analysis of government legislation and policy across a wide variety of sectors (below).

A valuable opportunity for the NBSAP is the current preparation of Namibia's Second National Development Plan (NDP2). NDP2 is being completely restructured and rewritten from the first plan (NDP1), with a strong focus on ensuring that all national development planning is sustainable. Happily for us, the Directorate of Environmental Affairs is orchestrating this 'sustainability analysis' from the office just next door to the National Biodiversity Programme Coordination Unit, so close cooperation is being achieved.

The integration of sustainable development planning and the NBSAP into NDP2 is given added emphasis by our national Constitution, which explicitly provides (Art 95L) for the protection of biological diversity and essential ecological processes, as well as the sustainable use of natural resources.

Biodiversity Programme staff have worked hard to raise awareness of the NBSAP process and its significance at the level of Permanent Secretaries of government ministries and the National Planning Commission - as well as the directors of line ministries and NGOs who serve on the National Biodiversity Task Force.

## *Namibia's Constitution*

Namibia's constitution is one of the very few in the world that explicitly supports the CBD –

*"The State shall actively promote and maintain the welfare of the people by adapting, policies aimed at ... the maintenance of ecosystems, essential ecological processes and biological diversity of Namibia and utilization of living natural resources on a sustainable basis, for the benefit of all Namibians, both present and future., "(Art. 95 L)*

An important parallel effort of integration is the Directorate of Environmental Affairs' highly consultative Environmental Legislation Project, which works in close cooperation with the Biodiversity Programme and a wide variety of stakeholders to review, revise, and in some cases draft new legislation. The new Environmental Management Bill, which gives legal force to Namibia's progressive Environmental Assessment Policy, explicitly enshrines biodiversity conservation as a key goal. The project is also drafting new biotrade and biosafety legislation as part of its efforts to bring Namibian legislation in line with the CBD.

In conjunction with Namibia's State of the Environment Reporting (SoER) process, the National Biodiversity Programme commissioned a policy analysis in December 1999. This was recently completed as a 10-chapter report covering the broad range of government policies in agriculture, health, national planning, fisheries and marine resources, trade, environment, lands, science and technology, mining and prospecting, and biotechnology. A copy of this is feeding into NDP2 and the Environmental Legislation Project.



Fig. 1 Namibian National Biodiversity Programme -- institutional structure

Government of the Republic of Namibia

Ministry of Environment and Tourism : Directorate of Environmental Affairs (*coordinating agency*)

<b>NATIONAL BIODIVERSITY PROGRAMME COORDINATION OFFICE</b> (3 staff: 2 full-time, 1 part-time)
<b>NATIONAL BIODIVERSITY TASK FORCE</b> (national <b>decisionmaking</b> body, <b>primarily technical</b> )

**WORKING GROUPS CONTRIBUTING TO THE NATIONAL PROGRAMME**  
*with agency / institution leading or co-leading the group:*

National Wetlands Working Group <i>Department of Water Affairs</i>	Coastal & Marine Biodiversity Group <i>Ministry of Fisheries &amp; Marine Resources</i>	Terrestrial Biomonitoring Group <i>Desert Research Found. of Namibia</i>
Mountain Ecosystems Subgroup <i>Ministry of Environment &amp; Tourism</i>	Long Term Ecological Research Comm. <i>Desert Research Found. of Namibia</i>	Restoration Ecology Working Group <i>EnviroScience (private consultant)</i>
Forest Biodiversity Focal Group <i>Directorate of Forestry</i>	Agricultural Biodiversity Group <i>Ministry of Agriculture</i>	Biosystematics Working Group <i>National Museum of Namibia</i>
Namibian Biotechnology Alliance <i>University of Namibia, Fac. Science</i>	Biotrade Focal Group <i>Notional Botanical Research Institute</i>	Traditional Knowledge Focal Group <i>Biodiversity Programme</i>
Information and Website Group <i>Directorate of Environmental Affairs</i>	Finance Committee <i>Directorate of Environmental Affairs</i>	GIS and Mapping Subgroup <i>Directorate of Environmental Affairs</i>

representing:

**GOVERNMENT AGENCIES:**

- Ministry of Environment and Tourism, MET **{4 departments}**
- Ministry of Agriculture, Water and Rural Development. MAWRD **(3 departments/ institutes)**
- Ministry** of Basic Education and Culture, MBEC **(National Museum of Namibia)**
- Ministry** of Fisheries and Marine Resources, MFMR **(2 departments)**
- Ministry of Higher Education, Vocational Training, Science & Technology, MHEVTST **(1 department)**
- Ministry of Trade and Industry, MTI **{1 department}**
- Ministry of **Mines** and Energy, MME **{1 department}**

**TERTIARY EDUCATION INSTITUTIONS:**

- University of Namibia, UNAM **{3 faculties}**
- Polytechnic of Namibia **{1 faculty}**

**NON-GOVERNMENT ORGANISATIONS:**

- Namibia Nature **Foundation**, NNF
- Desert Research Foundation of Namibia, DRFN
- World **Wildlife** Fund - US Namibia, WWF
- Centre** for Research Information Africa Action. **CRIAA**
- [Namibia Eagle Traditional Healers' Association. **NETHA**)
- (Namibia Traditional Healers' and **Practitioners'** Board, NTHPB)
- Working Group on Indigenous Minorities of Southern **Africa**, **WIMSA**
- Namibian Non-Governmental Forum, **NANGOF**

**PRIVATE SECTOR / PARASTATALS:**

- |   |   |
|---|---|
| Namibian Agronomic Board                    | Namibia Meat Board                          |
| Namibian Water Corporation                  | Namibia-De Beers Marine Diamond Corporation |
| Otjiwarongo Veterinary Clinic               | <b>EnviroScience</b>                        |
| private individuals, e.g. amateur botanists |   |

# Integration of and synergies between the biodiversity-related conventions

Namibia has always taken very seriously the need to integrate its natural resource management activities. Early on, therefore, we moved towards joint planning and implementation of the biodiversity-related conventions.

The CBD, CCD, UNFCCC and Ramsar Convention in particular have very similar needs for monitoring, analysis, and mitigation of environmental change. Therefore our efforts are focusing on these conventions. Less well linked is the CITES Convention, although CITES national staff are involved in the Biodiversity Programme's Biotrade Focal Group.

A country with a small technical / scientific population like Namibia can probably achieve this integration more easily than most. In our case, the CBD, CCD and UNFCCC are coordinated by one department, and Ramsar is managed by another department in the same Ministry of Environment & Tourism (MET).

To some extent, the integration of the four conventions in Namibia is heavily dependent on the commitment and understanding of key individuals – it is not adequately institutionalised. However, the Directorate of Environmental Affairs (DEA), which houses most of the programs, is structured to maximise this cooperation. Also, a certain amount of the implementation activities under the four conventions are carried out by the same NGOs and individuals.

While the small technical/ environmental planning community in Namibia is sometimes a real source of headache for us, in this case it has certainly made it easier for us to talk to each other. Also, in the DEA, the National Biodiversity Program and the National Desertification Program are run from adjacent offices by national coordinators who work very closely together.

Namibia is preparing an enabling activity grant proposal to UNEP/ GEF to support the information-system needs of this integration via two levels-one based at the CHM level, and one based at the ground-research level.

Finally, we are seeking funds for a research-and-modelling-based project on the impact of climate change and biome shifts on the endemic biodiversity of Africa's South-West Arid Zone, including its ephemeral wetlands.

	Lead agency	Comments
CBD	Directorate of Environmental Affairs, MET	Task Force Working groups are cross-sectoral and 'cross-conventional'
CCD	Directorate of Environmental Affairs, MET	Program coordinator is core member of Biodiversity Program and chair of Wetlands Working Group, WWG
UNFCCC	Directorate of Environmental Affairs, MET	Program coordinator is core member of Biodiversity Program, WWG + related working groups
Ramsar	Division of Specialist support Services, MET	National focal point is member of Biodiversity Program + WWG

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	Lead agency	Comments
CBD	Directorate of Environmental Affairs, MET	Biodiversity Task Force working groups are cross-sectoral and 'cross-conventional'; program coordinator is active in climate change advisory committee
CCD	Directorate of Environmental Affairs, MET	Program coordinator is core member of Biodiversity Program and chair of Wetlands Working Group, WWG
UNFCCC	Directorate of Environmental Affairs, MET	Program coordinator is core member of Biodiversity Program, WWG + related work. groups
Ramsar	Division of Specialist support Services, MET	National focal point is member of Biodiversity Program + WWG

# Trade and environment

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The many important issues in this area- bioprospecting, globalisation, intellectual property rights and community benefit-sharing -- are dealt with in Namibia by the Biotrade Focal Group (Fig 1) of the National Biodiversity Task Force. It interacts fairly closely with a TRIPS Committee coordinated by the Ministry of Trade.

The Biotrade Group has focused on the development of policy and legislation as well as mechanisms to distribute financial and other benefits. It provides a forum for communication and synergy between interested parties in the Ministries of Environment, Agriculture (including the National Plant Genetic Resources Centre),

Trade and Industry, and others, as well as the NGOs active in this field. At several times, notably the recent WTO forum in Seattle, this forum facilitated the development of common government position papers on controversial issues, rather than the previous, all-too-common situation of sectoral isolation.

Other Biodiversity Task Force working groups whose work impacts on environment-trade issues include the Traditional Knowledge Focal Group, Namibian Biotechnology Alliance, Agricultural Biodiversity Working Group, Coastal & Marine Biodiversity Working Group, and Forest Biodiversity Focal Group.

## Thematic areas

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Namibia's approach to implementing the CBD -- of devolving responsibility and powers to a variety of working groups -- allows us to rationalise our efforts as much as possible. As a large country with a very small population and specialist base, careful rationalisation and prioritisation of activities is essential for us. The daunting task of implementing the CBD's many thematic area work programmes (agrobiodiversity, drylands biodiversity, forest biodiversity, marine and coastal biodiversity biosafety, inland waters, traditional knowledge, species and taxonomy, protected areas, access and benefit sharing, impact assessments, etc) required us to focus on these issues as directly as possible in developing our NBSAP.

We therefore designed the groups to strike a balance between our national need to ensure implementation of the Strategic Plan (by aligning the working groups logically within responsible sectors where possible, while insisting that each group cross-reference and network its activities) and our international responsibility to report on thematic areas to the CBD Secretariat.

Brief reports on the working groups and thematic issues follow.

### Access to genetic resources and benefit sharing (Art. 15)

As described above, the implementation of this area is carried forward by the Biotrade Focal Group and related working groups. The Environmental Legislation Project of the DEA (as an active member of the Biotrade Group) has led the consultative process of policy and legislation development in this field. Although the process is now temporarily delayed for administrative reasons, we hope this legislation will be in place by December 2000.

The National Plant Genetic Resources Centre (NPGRC) of the National Botanical Research Institute (Ministry of Agriculture, Water & Rural Development) plays a lead role in this area. Its work is integrated with the SADC Plant Genetic Resources Centre and the regional SABONET program.

### Agricultural biodiversity

As the driest African nation south of the Sahara, with up to 85% of its land area allocated in principle to tenured

and non-tenured farming, agricultural biodiversity is one of Namibia's key concerns.

The Agricultural Biodiversity Working Group, chaired by a livestock geneticist in the Ministry of Agriculture, has developed the draft action plan for the NBSAP. It needs further involvement of the communal farmers' union, the NNFU -at present, only the commercial farmers' union has participated.

Key issues highlighted so far in the action plan are bush encroachment, poor soil and water management, poor appreciation of the role of genetic resources in food security increasing pressures on marginal land, and destruction of unique vegetation types by intensive crop-farming. The latter is a difficult issue to address, given that only about 3% of Namibia's land area is available for irrigated crop production

### Biodiversity funding sources

The Namibian Government invests directly in biodiversity conservation through the operations of the Ministry of Environment and Tourism, National Botanical Research Institute, Ministry of Fisheries and Marine Resources and National Museum of Namibia. This cannot be accurately partitioned, but is probably in the region of US \$3 m/yr.

The National Biodiversity Programme is co-funded by the Government through provision of office space, communications facilities, clerical support and supplies. However, the bulk of its operational funds have been provided by UNEP/GEF (c US \$485 000 plus a pilot grant of \$82 000 to the Namibian Biotechnology Alliance) and the German Government (c. DM 795 000).

The German Government has graciously just approved Phase III funding for the National Biodiversity Program for the amount of DM 2.5 m over 4 years (2000-2003)

Namibia, however, sees its future funding needs increasingly being handled through restructuring and reorientation of domestic (government and private) financing, and less through bilateral/multilateral aid. Its key strategies for achieving this are its emerging Environmental Investment Fund (EIF) and increasing dialogue with the National Planning Commission (NPC).

### Biotechnology and biosafety (Art. 19)

Development of Namibia's national biosafety framework has been coordinated by the Namibian Biotechnology Alliance. This small, committed group has been one of our most productive, due to dynamic leadership and enthusiasm among the Management Committee. The group is led by a young biochemist in the University of Namibia's Science Faculty. Since 1998 the group has successfully established key elements of our National Biosafety Framework --

- a Cabinet-approved national policy document (*'Enabling the safe use of biotechnology'*) drawn from the results of national workshops opened by the President and Prime Minister;
- a biotechnology country study which sets Namibia's biotechnology development options firmly in the context of Namibia's fragile and environment and biodiversity;
- a detailed technical manual for safe laboratory use and field applications;
- draft legislation to give effect to the national policy, expected by the end of 2000; and
- a draft logframe action plan, prepared for our National Technical Workshop on the NBSAP.

### Capacity building

As in many African countries, Namibia's institutional capacity to support the CBD has been declining through much-reduced budgets at the very time when it needs to be strengthened. Also, at this stage in our independence period, rather more skilled graduates are going into law, political studies and economics than into the sciences.

So far, our National Biodiversity Programme funds have been used to try to counter these two trends in a very small-scale, piecemeal way as part of the country study and NBSAP processes. This support focuses on the building of better biodiversity information systems. However, these funds are meagre in relation to the need, and our support to the National Museum of Namibia,

which curates the zoological diversity specimens in the country, has rightly been criticised as simply putting plasters on a flowing wound. Although some key institutions (e.g the National Botanical Research Institute, National Plant Genetic Resources Centre, and Ministry of Fisheries and Marine Resources) have benefited from substantial domestic and external funds, the National Museum suffers greatly both from a lack of effective Government or donor financial support and from difficult-to-resolve internal conflicts. Namibia seeks support to address this problem as a partial means of implementing its draft National Biosystematics Action Plan (to be part of the NBSAP), prepared by the Biodiversity Task Force's Biosystematics Working Group.

Under the Biodiversity Programme's Phase III, focused technical capacity building through training will be one of the four key objectives (see Box). Our biggest constraint, however, is not lack of money or opportunities, but simply a shortage of potential trainees with a strong educational background, interest and commitment. To some extent, we are still in the shadow of the apartheid education years in this respect.

## Criteria and indicators

The development of criteria for, and indicators of, environmental change and degradation is one of Namibia's key activities at the moment. We see it as essential that we strike a balance between developing locally relevant indicators for our highly variable arid environment (on the one hand) and not re-inventing the wheel (on the other). This is mainly happening in the Namibian Long Term Ecological Research (Na-LTER) Committee as well as its ecosystem-based support groups – the Terrestrial Biomonitoring Group and, to a lesser extent so far, the Wetlands Working Group and the Coastal and Marine Biodiversity Group.

## Drylands biodiversity

For obvious reasons, this is Namibia's biggest issue within the CBD, with reference to the interlinking themes of agricultural biodiversity, sustainable use, forest (woodland) biodiversity and inland waters. Dryland biodiversity is probably also one of the key issues for

Africa as a whole. Our National Biodiversity Programme is working very closely with researchers at the Desert Research Foundation of Namibia (DRFN) and its Gobabeb Training and Research Centre (GTRC), which is a SADC-supported regional centre of excellence in drylands management and research. The DRFN chairs the Na-LTER Committee and Terrestrial Biomonitoring Group, as well as playing a key role in many of the other working groups of the NBSAP.

## Education and awareness (Art. 13)

A part-time staff member of the National Biodiversity Programme took this portfolio up, but so far we have not been able to achieve what we had hoped. Two pamphlets for parliamentarians have been produced and two posters aimed at schools and politicians are in preparation. However, taking this issue more seriously will probably require a different approach, involving outsourcing more of the production work since programme staff are heavily overcommitted. A draft action plan for civil society education and awareness has been produced for the NBSAP and will be integrated into other thematic inputs.

### *Goals of the Biodiversity Program's Phase III*

Phase III builds on the logical framework developed in *Biodiversity and Development* (the draft NBSAP) and the country study. It will fill identified gaps to address four goals:

- Analysis of and policy input from environmental information systems
- Strategic elimination of identified gaps
- Monitoring of environmental change through biodiversity loss
- Building of technical capacity through education and training

## Ex-situ conservation (Art. 9)

**Ex-situ** conservation is largely carried out by two key institutions in Namibia, the National Museum of Namibia (for zoological, cultural and archaeological material) and the herbarium of the National Botanical Research Institute of Namibia (for plant material, also by default, fungal material).

The NBRI is well-supported by the Namibian Government and SABONET Program, but the NMN requires substantial institutional strengthening (see above, Capacity-building).

A National Botanical Garden was opened on 19 April 2000 adjacent to the NBRI. There is no national zoo. An NGO, the Cheetah Conservation Fund, is involved in supporting **ex-situ** conservation of that species and maintains the international studbook (Namibia holds the major world cheetah population), but holds no genetic material itself. For a recent summary of *ex-situ* conservation needs and capacity in Namibia, see our country study, Chapter 2.

## Forest biodiversity

Namibia's arid climate means that its woodlands are severely stressed in some places for fuel and construction needs. The Forest Biodiversity Focal Group, chaired by the Directorate of Forestry, has developed a detailed action plan for woodlands, focusing on non-timber resources and tree diversity. A National Tree Atlas Project, based at the NBRI, also runs under the Biodiversity Programme with support from GTZ

## Impact assessment (Art. 14)

Namibia has one of the most progressive and stringent environmental impact assessment policies (approved by Cabinet in 1995) in the world. It supports strategic environmental assessment of policies and programmes, as well as individual projects. Biodiversity conservation is a key aim, although the structures for detailed review of reports by biodiversity scientists do not yet exist. The Head of the Directorate of Environmental Affairs, DEA (in which department the Biodiversity Programme sits) is a

regional specialist in this issue and coordinated the policy's development. By the end of 2000, this policy will have legal force under the Environmental Management Act (see page 8, Policy reform). At that stage, an Environmental Commissioner's Office will be established within the DEA with several full-time staff.

## Incentive measures (Art. 11)

This is an area where Namibia needs to work further. So far, our chief incentive mechanism for biodiversity conservation is in the widely-known CBNRM approach of communal-area conservancies. Under this system, which is comparable to the much-vaunted CAMPFIRE program of Zimbabwe, rights to and responsibilities for wildlife are returned to rural communities which define themselves as such, propose a negotiated border, constitution, administrative committee and benefit-sharing mechanism (see also above, Access to genetic resources and benefit-sharing). We are seeking enabling activity funds from UNEP/GEF to develop this area further with grassroots input. Also, our recent policy analysis gives institutional guidance on the existence of perverse incentives in government.

## Information and the Clearing House Mechanism (Art. 17 and others)

All over the world, reliable biodiversity information is essential for informed environmental and development planning. Although Namibia has a long history of biodiversity research, and protected areas dating to the **early 1900s**, very little relevant information was available in a consolidated and meaningful format at the time of Independence in 1990. Much of this research was also unfocused on larger issues.

The National Biodiversity Programme therefore focused on building accessible and easy-to-use information systems and on encouraging researchers to contribute to common goals. The **1998** book *Biological diversity in Namibia – a country study* summarised existing information, some of which had been computerised and synthesised with BCS funds. Further, with German support we have built a small Biodiversity Information System Unit in the DEA, focusing on avifaunal data

which are the most comprehensive (as part of the Southern African Bird Atlas Project). This unit will be considerably expanded in Phase III as a means of supporting the integration of convention-related national activities (see p. 10)

However, members of the Biodiversity Task Force made it clear that they favoured efficient networking, rather than a centralised data storage unit. Therefore, this unit will function primarily as a focused data analysis unit. It will also operate and update our CHM website (<http://www.dea.met.gov.na/programmes/biodiversity.html>).

## Inland waters

Wetlands in arid countries are disproportionately important to humans and other species. The biodiversity of Namibia's wetlands is the focus of our national Wetlands Working Group, one of the earliest groups of the Biodiversity Task Force. This group serves to coordinate and stimulate relevant activities by the six or seven ministries, NGOs and tertiary institutions involved with wetlands management or research. Apart from many other awareness-raising and research activities, it has developed a detailed and pragmatic action plan as part of the NBSAP. Its chair (previously based in the Department of Water Affairs) is also the national desertification coordinator and a core member of the Biodiversity Programme.

## Marine and coastal biodiversity

Namibia's productive coastline and Benguela Current marine ecosystem are economically extremely important and relatively pristine. The Coastal and Marine Biodiversity Working Group, chaired by the Ministry of Fisheries and Marine Resources, has developed a focused action plan as part of the NBSAP which will also serve as the national action plan for the GEF/UNDP-funded Benguela Current Large Marine Ecosystem (BCLME) Program. A further proposal to GEF/World Bank, originating from the Ministry of Regional Government, focuses on the decentralised management of coastal biodiversity and development planning.

## Monitoring (Art. 7)

Monitoring of environmental change through biodiversity loss and related processes, such as desertification and climate change, is the focus of much of Namibia's implementation of the CBD.

To draw together the parallel environmental monitoring aims of our three ecosystem-based groups (the Terrestrial Biomonitoring Group, Wetlands Working Group and Coastal and Marine Biodiversity Group), the Namibian Long-Term Ecological Research (Na-LTER) Network was initiated in late 1999. Namibia is the first (and so far still the only) African country to join the International Long Term Ecological Research (ILTER) network, and is blessed with good environmental databases and an internationally-acclaimed long-term centre for arid-zone research, the Gobabeb Training and Research Centre, GTRC (previously the 'Desert Ecological Research Unit of Namibia'). The parent body of GTRC, the Desert Research Foundation of Namibia, has assumed coordination of the Na-LTER Network Committee. A national workshop on a strategy for the identification and development of additional LTER sites in Namibia was held in February 2000. See <http://www.netwise.drfn.org.na> and <http://www.ilternet.edu>. The group has also developed an action plan logframe for the NBSAP.

Our National Biodiversity Programme also participates directly in emerging initiatives such as GTOS-Southern Africa and the Millennium Ecosystem Assessment.

## Mountain biodiversity

Namibia's arid mountains are extremely special in biodiversity and endemism terms, and are a focus of scenic tourism. In particular, the mountainous Kaoko escarpment and Succulent Karoo are internationally recognised biodiversity hotspots, and the Succulent Karoo is one of the only hotspots identified in the recent widely-cited analysis in *Nature* by Myers et al. 2000. A core scientific group of the Biodiversity Task Force has formed a Mountain Ecosystems Group which focuses on this. We are also a partner in a EU-funded study of inselbergs as "conservation islands" for rehabilitating degraded rangelands.



## Protected areas and in-situ conservation (Art. 8)

Namibia's protected area network is old and well established, and many parks support a high diversity of large African mammals. However, the parks system is ecologically skewed and does not protect the endemism hotspots of the country (see *Biodiversity & Conservation* 7(4), 1998). We are thus identifying additional areas for protection, either formally or as conservancies.

Further, we are seeking World Bank help for a focused evaluation of land tenure and land use system impacts on biological diversity, with an initial assessment of communal and commercial-land conservancies. We also participate in the IUCN-coordinated African Initiative on Protected Areas.

## Research and training (Art. 12)

Research underlies virtually all the Biodiversity Programme's working groups and projects. There is a strong need for further training in environmental research skills and methods among young Namibians. Most of the effective training at the moment is done by an NGO, the Desert Research Foundation of Namibia, especially through its Summer Desertification Project. We also have strong links with the University of Namibia and Polytechnic of Namibia, and help to identify promising candidates for placement and on-the-job training in biodiversity conservation management. However, these two institutions are small and troubled, and train only to a basic level. There is thus a need to collaborate with regional and international programmes at the honours and masters level, as well as support practical on-the-job training initiatives.

## Species and taxonomy

Like the CBD, the National Biodiversity Programme works at three levels of diversity from genes to ecosystems. However, species research is the focus of many if not most of its associated scientists. Species are dealt with primarily by the management-oriented partner organisations of the Biodiversity Task Force, such as the wildlife-management oriented research arm of the Ministry of Environment and Tourism, the National Museum of Namibia, the National Botanical Research Institution and the Ministry of Fisheries and Marine Resources.

The Biosystematics Working Group has developed a national-scale action plan for strengthening taxonomy. This group is led by the two main taxonomic institutes in Namibia, the National Museum and the NBRI.

## Sustainable tourism

Namibia's tourism sector relies heavily on the country's biodiversity, cultural diversity and scenic beauty. We therefore strongly support initiatives to use sustainable tourism to generate revenues for environmental conservation within the framework of sustainable use.

## Sustainable use of biotic resources (Art. 10)

Namibia is widely known internationally as a strong proponent of the sustainable use concept. Our concern in the National Biodiversity Programme is supporting this principle while ensuring that it does not inadvertently cause biodiversity loss through production-oriented management techniques (e.g. on game farms and conservancies) or harvesting practices. In many areas, the basic data to support sustainable harvesting simply do not exist.

## Traditional knowledge

The Traditional Knowledge Focal Group has been coordinating the input of various NGOs and other interested parties into the NBSAP. It overlaps extensively with the work of the BiTrade and Forest Biodiversity focal Groups in the development of policy and legislation protecting traditional knowledge and community intellectual property rights. Once additional input from grassroots communities has been obtained on perceptions of the relationship between community knowledge and outside "buyers" as well as appropriate mechanisms of benefit-sharing, concrete activities can begin to support communities.

# Conclusions

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Lessons learned in **Namibia** and elsewhere about the **Biodiversity Strategy and Action Plan** process:

- 1 Do the job yourselves, as it is less expensive and more effective – it will be largely ignored within-country if a foreign consultant writes it. Reserve international consultancy funds for those few contexts in which the local experts don't have the necessary time or perspective and ensure that an outside consultant supports, not supplants, local experts.
- 2 Pay attention to building commitment and team spirit throughout the process.
- 3 Ensure that key **activities** are entrusted to the most committed and dynamic people on the team
4. Don't focus entirely on the technical level, no matter how deserving it is of your attention.. cultivate political will and interest right from the start

We have also paid particular attention to the well-expressed lessons from an Eastern and South Asian planning workshop on **NBSAPs**. Some of these lessons and recommendations are well-known in Namibia, but others are just starting to dawn on us independently, and a few are thought-provokingly new

Namibia is well on the road to re-focusing its existing conservation efforts more cleanly on **biodiversity** and its relationship to development. Our participatory approach is going very well so far, but the "proof of the pudding" will remain in the eating, or implementation stage,



# Appendix 1 Current membership of the working groups and project committees of the Biodiversity Task Force. (Some groups meet regularly while others conduct business mainly by e-mail)

## AGRICULTURAL BIODIVERSITY GROUP

Jacque Els (Ministry of Agriculture, livestock genetic resources) -Chair  
Shirley Bethune (Namibia's Programme to Combat Desertification, national coordinator)  
Jürgen Hoffmann (Namibia Agronomic Board, senior agronomist)  
Dave Joubert (Polytechnic of Namibia, rangeland ecologist)  
Martha Kandawa-Schulz (University of Namibia, biotechnologist and chemist)  
Herta Kolberg (Ministry of Agriculture, head of National Plant Genetic Resources Centre)  
Gillian Maggs-Kötling (Ministry of Agriculture, head of National Botanical Research Institute)  
Eugene Marais (Ministry of Basic Education & Culture/ National Museum, entomologist)  
Osmund Mwandemele (University of Namibia, plant geneticist)  
Richard Simons (University of Namibia, agronomist)  
Mark Robertson (Desert Research Foundation of Namibia, rangeland researcher)  
Sem Shikongo (National Biodiversity Programme, Traditional Knowledge & Forest Biodiversity officer)  
Phoebe Barnard (National Biodiversity Programme coordinator)  
Benadicta /Uris (Namibia Agronomic Board, junior agronomist)  
Roelie Venter (Namibian Agricultural Union, agronomist)  
Juliane Zeidler (Desert Research Foundation of Namibia, rangeland ecologist)

## BIOSYSTEMATICS WORKING GROUP

Gillian Maggs-Kötling (Ministry of Agriculture, head of National Botanical Research Institute) -Chair  
Eugene Marais (Ministry of Basic Education & Culture/ National Museum, entomologist)  
Mike Griffin (Ministry of Environment & Tourism, biodiversity inventory and mammalogist/ herpetologist)  
Eryn Griffin (Ministry of Basic Education & Culture/ National Museum, arachnologist)  
Kevin Roberts (Ministry of Agriculture, Water & Rural Development/ Dept of Water Affairs, aquatic ecologist)  
Barbara Curtis (formerly National Museum, aquatic invertebrate ecologist)  
Ashley Kirk-Spriggs (Ministry of Basic Education & Culture/ National Museum, asst entomologist)  
Bronwen Currie (Ministry of Fisheries & Marine Resources, intertidal invertebrate ecologist)  
Ben van Zyl (Ministry of Fisheries & Marine Resources, Deputy-Director and fish taxonomist)  
Clinton Hay (Ministry of Fisheries & Marine Resources, fish ecologist)  
Chris Brown (Namibia Nature Foundation, Director and bird ecologist)  
Dave Joubert (Polytechnic of Namibia, rangeland ecologist)  
Joris Komen (Ministry of Basic Education & Culture/ National Museum, education coordinator)  
Joh Henschel (Desert Research Foundation of Namibia, research coordinator and broad-based ecologist)  
Mark Robertson (Desert Research Foundation of Namibia, rangelands researcher)  
Patricia Craven (Ministry of Agriculture/ National Botanical Research Institute, plant taxonomist)  
Shirley Bethune (Namibia's Programme to Combat Desertification, national coordinator and aquatic ecologist)  
Phoebe Barnard (National Biodiversity Programme coordinator)

## BIOTRADE FOCAL GROUP

Michaela Figueira (Ministry of Environment & Tourism/ DEA, environmental lawyer) – Co-chair  
Gillian Maggs-Kötling (Ministry of Agriculture, head of National Botanical Research Institute) – Co-chair  
Sem Shikongo (National Biodiversity Programme -Co-chair)  
Herta Kolberg (Ministry of Agriculture, head of National Plant Genetic Resources Centre)  
Ben Bennett (Ministry of Agriculture, biological resource economist)  
Cyril Lombard (Centre for Research Information Africa Action, grassroots community trade liaison)  
Dave Cole (Centre for Research Information Africa Action, grassroots community trade liaison)  
Axel Thoma (Working Group on Indigenous Minorities in Southern Africa, grassroots coordinator)  
Phoebe Barnard (National Biodiversity Programme coordinator)  
James MacGregor (Ministry of Environment & Tourism, environmental economist)  
Pauline Lindeque (Ministry of Environment & Tourism, Deputy-Director of permits and research) (cont.)

Colin Craig (Ministry of Environment & Tourism, head of research)  
Mr Kaakunga (Ministry of Trade & Industry, member of **Interministerial TRIPS** Committee)  
Edward T Kamboua (Ministry of Trade & Industry, Deputy-Director of Patents and Trademarks, TRIPS Committee)  
Martha Kandawa-Schulz (University of **Namibia**, biotechnologist and **chemist**)

#### COASTAL & MARINE BIODIVERSITY GROUP

##### Phoebe Barnard (National Biodiversity Programme – Interim chair)

Bronwen Currie (Ministry of Fisheries & Marine Resources, intertidal invertebrate researcher)  
Jean-Paul Roux (Ministry of Fisheries & Marine Resources, marine mammal ecologist)  
Ben van Zyl (Ministry of Fisheries & Marine Resources, Deputy-Director and fish taxonomist)  
Patti Wickens (De Beers Marine Diamond Corporation, environmental manager and marine mammal ecologist)  
Helen Boyer (Ministry of Fisheries & Marine Resources, fish stock assessment biologist)  
Mike Griffin (Ministry of Environment & Tourism, biodiversity inventory and mammalogist/ herpetologist)  
Rob Simmons (Ministry of Environment & Tourism, biodiversity inventory and ornithologist)  
Mick O'Toole (Regional coordinator, Benguela Current Large Marine Ecosystem programme)  
Hashati Hamukuaya (Ministry of Fisheries & Marine Resources, Deputy-Director of resource management)  
Louise Le Roux (University of **Namibia**, oceanographer)

#### FINANCE COMMITTEE

##### Phoebe Barnard (National Biodiversity Programme – Chair)

Chris Brown (Namibia Nature Foundation, Director)  
Christa Schemmer (Namibia Nature Foundation, programme accountant)  
Helmut Woht (GTZ, technical advisor)  
Herta Kolberg (Ministry of Agriculture, head of National Plant Genetic Resources Centre)  
Connie Claassen (National Biodiversity Programme, part-time programme assistant)  
Shirley Bethune (Namibia's Programme to Combat Desertification, national coordinator and aquatic ecologist)  
Mike Griffin (Ministry of Environment & Tourism, biodiversity inventory and mammalogist/ herpetologist)

#### FOREST BIODIVERSITY FOCAL GROUP

##### Esther Lusepani (Directorate of Forestry environmental forester-chair)

Sem Shikongo (National Biodiversity Programme, Traditional Knowledge & Forest Biodiversity officer)  
Moses Chakanga (Directorate of Forestry-National Forest Inventory coordinator)  
Cyril Lombard (Centre for Research Information Africa Action, grassroots community trade liaison)  
Dave Cole (Centre for Research Information Africa Action, grassroots community trade liaison)  
Axel Thoma (Working Group on Indigenous Minorities in Southern Africa, grassroots coordinator)  
Phoebe Barnard (National Biodiversity Programme coordinator)  
Gillian Maggs-Kolling (Ministry of Agriculture, head of National Botanical Research Institute)  
Martha Kandawa-Schulz (University of **Namibia**, biotechnologist and chemist)  
Mark Robertson (Desert Research Foundation of Namibia, rangelands researcher)  
Eugene Marais (Ministry of Basic Education & Culture/ National Museum, entomologist)  
Osmund Mwandemele (University of Namibia, plant geneticist)  
Richard Simons (University of **Namibia**, agronomist)  
Barbara Curbs (National Botanical Research Institute, coordinator of Tree Atlas Project)  
Ben Hochobeb (University of Namibia, researcher)  
J P Msangi (University of Namibia, head of Natural Resources Dept)  
Mutjinde Katjiva (University of Namibia/ Natural Resources Dept, lecturer)  
Jussi Viitanen (Directorate of Forestry/ **Namibia-Finland** Forestry Project, environmental forester)  
Antje Burke (EnviroScience, plant ecologist)

#### INFORMATION & WEBSITE GROUP

##### Rob Simmons (Ministry of Environment & Tourism, biodiversity inventory and ornithologist) – Chair

Joseph McGann (Ministry of Environment & Tourism, economist and policy analyst)  
Gillian Maggs-Kolling (Ministry of Agriculture, head of National Botanical Research Institute)  
Jean-Paul Roux (Ministry of Fisheries & Marine Resources, marine mammal ecologist)

(cont)

John Mendelsohn (RAISON, environmental **information** systems specialist and **national atlas** coordinator)  
**Mike Griffm** (Ministry of Environment & Tourism, biodiversity inventory and **mammalogist/ herpetologist**)  
Joris Komen (Ministry of Basic Education & Culture/ National Museum, education coordmator)  
Sem Shikongo (National Biodiversity Programme, **Traditional Knowledge & Forest Biodiversrty officer**)  
Phoebe Barnard (National Biodiversity Programme coordinator)  
Tony Robertson (**Biodiversity Information Systems Unit** and national atlas researcher)  
Chris Brown (Namibia Nature Foundalion, Director and **bird** ecologist)  
Antje Burke (EnviroScience, plant ecologist)  
Cohn Craig (Ministry of Environment & Tourism, head of research)

#### MOUNTAIN ECOSYSTEMS SUBGROUP

Rob Simmons (Ministry of Environment & Tourism, biodiversity inventory and **ornithologist**) -Chair  
Antje Burke (EnviroScience, plant ecologist)  
**Mike Griffin** (Ministry of Environment & Tourism, biodiversity **inventory** and **mammologist/herpetologist**)  
Joh Henschel (Desert Research Foundation of Namibia, research coordmatorand broad-based ecologist)  
Sakkie Davids (private researcher and former ecotourism **operator**)  
Pierre Smit (University of **Namibia/ Geography Dept**, lecturer)  
Phoebe Barnard (Nalional Biodiversity Programme coordinator)

#### NAMIBIAN BIOTECHNOLOGY ALLIANCE (NABA)

Martha Kandawa-Schulz (University of Namrbia, biotechnoloist and **chemist**)  
**Berthold Wohlleber** (Ministry of **Agriculture, Water & Rural Development**, agricultural law and permit officer)  
George Rhodes (Mmistry of Agriculture, Waler & Rural Development, phytosanitary control officer)  
**Ronnie Bock** (Universily of Namibia/ **Biology Dept**, lecturer)  
Sem Shikongo (**National Biodiversity** Programme, **Traditional Knowledge & Forest Biodrversity officer**)  
Phoebe Barnard (National **Biodiversity** Programme coordinator)  
**Selma-Penna Uutonih** (**Ministry** of Higher Education, Vocational Traming, Science &Technology, officer)  
Alfred van Kent (Mmistry of Higher **Education**, Vocational Trainmg, Science & Technology, Director)  
**Axel Hartmann (Otjiwarongo** Veterinary Clinic, private vet)  
Roger **Lowery** (formerly University of Namibia, molecular **biologist**)  
Bianca **Braun** (**Ministry** of Agriculture, Water & Rural Development, crop geneticist)  
**Michaela Figueira** (Ministry of Environment, environmental lawyer)  
John Le Roux (Namibia Meat Board)  
Harold **Kaura** (Mmistry of Agriculture, Water & Rural Development, veterinary **biotechnologist**)

#### NAMIBIAN LONG-TERM ECOLOGICAL RESEARCH COMMITTEE

Joh Henschel (Desert Research **Foundation** of Namibia, research coordinator) – Chair  
**Bertus Kruger** (Desert Research Foundabon of Namibia, rangelands specialist)  
Rob Simmons (**Ministry** of Environment & Tourism, biodiversity inventory and **ornithologist**)  
Chris Brown (Namibia Nature Foundation, Director and bird **ecologist**)  
Juliane **Zeidler** (Desert Research Foundation of Namibia, rangeland ecologist)  
Ben Strohbach (National Botanical Research Institute, plant **ecologist**)

#### RESTORATION ECOLOGY WORKING GROUP

Antje Burke (EnviroScience, plant **ecologist**) – Chair  
**Mike Griffin** (Ministry of Environment & Tourism, **biodiversity inventory** and **mammalogist/ herpetologist**)  
Roy **Miller** (former **Director**, Geological Survey of Namrbia)  
**Eryn Griffn** (**Ministry** of **Basic Education & Culture/National Museum**, arachnogrst)  
**Martin Schneider** (**University** of Namibia/Faculty of Agriculture & Natural Resources, soil scientist)  
Greg MacGregor (Mining Commissioner)  
Gabdela Schneider (**Geological** Survey of Namibia, Director)  
Sophie Srmmonds (**InterConsult**, soil scientist)  
Ronnie Bock (Unwersity of Namibia/ **Biology Dept**, lecturer)  
Sem Shikongo (**National Biodiversity Programme**, **Traditional Knowledge & Forest Biodiversity officer**)

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Phoebe Barnard (National Biodiversity Programme **coordinator**)  
 Peter Tarr (**Ministry of Environment & Tourism**, Dep-Director, environmental assessment specialist)  
 Nrcy //Gaseb (Desert Research Foundation of Namibia, researcher)  
 Mary Seely (Desert Research **Foundation** of Namibia, Director)  
 Mark Robertson (**Desert** Research Foundation of **Namibia**, rangelands researcher)  
 John Rogers (Chamber of Mines, Charrman)  
 Dave Joubert (Polytechnic of Namibia, natural resources lecturer and rangeland ecologist)  
 Ibo Zimmerman (Polytechnic of Namibia, natural resources lecturer)  
 Eugene Marais (Ministry of Basic Education & Culture/ National Museum, **entomologist**)  
 Chris Brown (Namibia Nature Foundation, **Director**)  
 Ben Strohbach (National Botanical Research Institute, plant ecologist)  
 Alice Jarvis (Biodiversity Information Systems Unit and national atlas researcher)  
 Alex Speiser (restoration specialist, South Africa)

#### TERRESTRIAL BIOMONITORING GROUP

Juliane Zeidler (Desert Research **Foundation** of Namibia, **rangeland ecologist**) – Co-chair  
Phoebe Barnard (**National Biodiversity Programme** coordmator) – Co-chair  
 Joh Henschel (Desert Research Foundation of Namibia, research coordmator)  
 Rob Simmons (**Ministry of Environment & Tourism**, biodiversity inventory and ornithologist)  
 Chrrs Brown (Namibia Nature Foundation, Director and bird ecologist)  
 Alice Jarvis (Biodiversity Information Systems Unit and national atlas researcher)  
 Ben Strohbach (National Botanical Research Institute, plant ecologist)  
 Moses Chakanga (Directorate of Forestry National Forest Inventory coordinator)  
 Barbara Curbs (**National Botanical** Research Institute, coordinator of Tree Atlas Project)  
 Greg Stuart-Hill (WWF-US LIFE Program, biologist and resource monitoring coordmator)  
 Dave Joubert (**Polytechnic** of Namibia, natural resources lecturer and rangeland ecologist)  
 Antje Burke (**EnviroScience**, plant ecologist)  
 Mike Griffn (Mmistry of Environment & Tourism, biodiversity inventory and **mammalogist/** herpetologist)  
 Eryn Griffin (Ministry of Basic Education & Culture/ National Museum, arachnologist)  
 Gillian Maggs-Kölling (Ministry of Agriculture, head of National Botanical Research Institute)  
 Lesley Parezee (Desert Research Foundation of Namibia, rangeland biodiversity researcher)  
 Herta Kotberg (Ministry of Agriculture, head of National Plant Genetic Resources Centre)  
 Shirley Bethune (Namibia's Programme to Combat **Desertification**, national coordinator and aquatic **ecologist**)  
 Eugene Marais (Ministry of Basic Education & Culture/ National Museum, entomologist)  
 Nicky //Gaseb (Desert Research Foundation of Namibia, desertification researcher)  
 Mark Robertson (Desert Research **Foundation** of Namibia, rangelands researcher)  
 Ndaendelao Emma **Noongo** (Desert Research Foundation of Namibia, **desertification** researcher)  
 Trgana Hamukwya (Desert Research Foundation of Namibia, researcher)  
 Pierre Smit (University of Namibia/ Geography Dept. lecturer)  
 Sem Shikongo (National Biodiversity Programme, Tradtional Knowledge & Forest Biodiversity officer)

#### TRADITIONAL KNOWLEDGE FOCAL GROUP

Sem Shikongo (**National Biodiversity Prooramme**, **Traditonal Knowledge & Forest Biodiversity officer**) -Chair  
 Garth Owen-Smith (**Integrated** Rural Development & Nature Conservation, director and community **liaison**)  
 Cyril Lombard or Dave **Cole** (Centre for Research Information Africa Action, grassroots community trade liaisons)  
 Lorraine Witschas (private herbalist and aromatheraprst)  
 Tuhafeni Sheuyange (National Botanical Research **Institute**, plant ecologist)  
 Michaela Figueira (Ministry of **Environment & Tourism/** DEA, environmental lawyer)  
 Martha Kandawa-Schulz (University of Namibia, brotechnologist and chemist)  
 Mark Robertson (Desert Research Foundation of Namibia, rangelands researcher)  
 Mutjinde Katjua (University of **Namibia/** Natural Resources Dept, lecturer)  
 Eugene Marais (Ministry of Basic Education & Culture/ National Museum, entomologist)  
 Martin Mbewe (University of Namibia/ Biology Department, lecturer and traditional knowledge researcher)  
 Axel Thoma. Jafet **G/aq'o** or Thekta Hohmann (Working Group on Indigenous **Minorities** in Southern Africa)  
 Henk Coetsee (**Ministry of Environment & Tourism**, education officer and **traditional** knowledge researcher)  
 Phoebe Barnard (National Biodiversity Programme coordinator)

(cont.)

Kahepako **Uariua-Kakujaha** (private natural resource management researcher and community liaison)  
(Siballi Kgobetsi, Namibia **Traditional Healers' and Practitioners' Board**)  
(E. Beukes, private herbalist)  
(Debie Le Beau, University of Namibia/ Sociology Dept)  
(Pauline Sekginyana, Namibia Eagle Traditional Healers' Association)

#### TREE ATLAS PROJECT STEERING COMMITTEE

Barbara Curtis (National **Botanical** Research Institute, coordinator of Tree Atlas **Project**) – Chair  
John **Mendelsohn** (RAISON, environmental information systems **specialist** and natural resource atlas coordinator)  
**Chris Brown** (Namibia Nature Foundation, Director and bird ecologist)  
Phoebe Barnard (National Biodiversity Programme coordinator)  
Luisa **Hoffmann** (private enthusiast and writer of a newspaper column on indigenous trees)  
**Coleen Mannheimer** (Tree Atlas Project researcher, Southern African Botanical Diversity Network)

#### WETLANDS WORKING GROUP

Shirley Bethune (National **Desertification** Coordinator and **aquatic ecologist**) – Chair  
James Abbott (**Ministry of Fisheries & Marine Resources**, freshwater fish researcher)  
Bronwen Currie (**Ministry of Fisheries & Marine Resources**, intertidal **invertebrate** researcher)  
Barbara **Curtis** (National Botanical Research **Institute**, coordinator of Tree Atlas Project)  
NP Du Plessis (**Namibian Water Corporation**, environmental researcher)  
Eryn Griffin (**Ministry of Basic Education & Culture/ National Museum**, arachnologist)  
Mike Griffin (**Ministry of Environment & Tourism**, biodiversity inventory and **mammalogist/ herpetologist**)  
Clinton Hay (**Ministry of Fisheries & Marine Resources**, fish ecologist)  
**Hermine Inana** (National Museum, arachnology technician)  
Dave Joubert (Polytechnic of Namibia, rangelands ecologist)  
Esmeralda Klaassen (**National Botanical Research Institute**, wetland plants curator)  
Holger Kolberg (**Ministry of Environment & Tourism**, wetlands biologist)  
Roger **Lowery** (formerly University of Namibia, molecular and aquatic **biologist**)  
**Orton Msiska** (University of Namibia, aquatic biologist)  
Kevin Roberts (Department of Water **Affairs**, aquatic ecologist)  
Mark Robertson (Desert Research **Foundation** of Namibia, rangelands researcher)  
Klaudia Schachtschneider (Department of Water Affairs, aquatic **biologist**)  
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