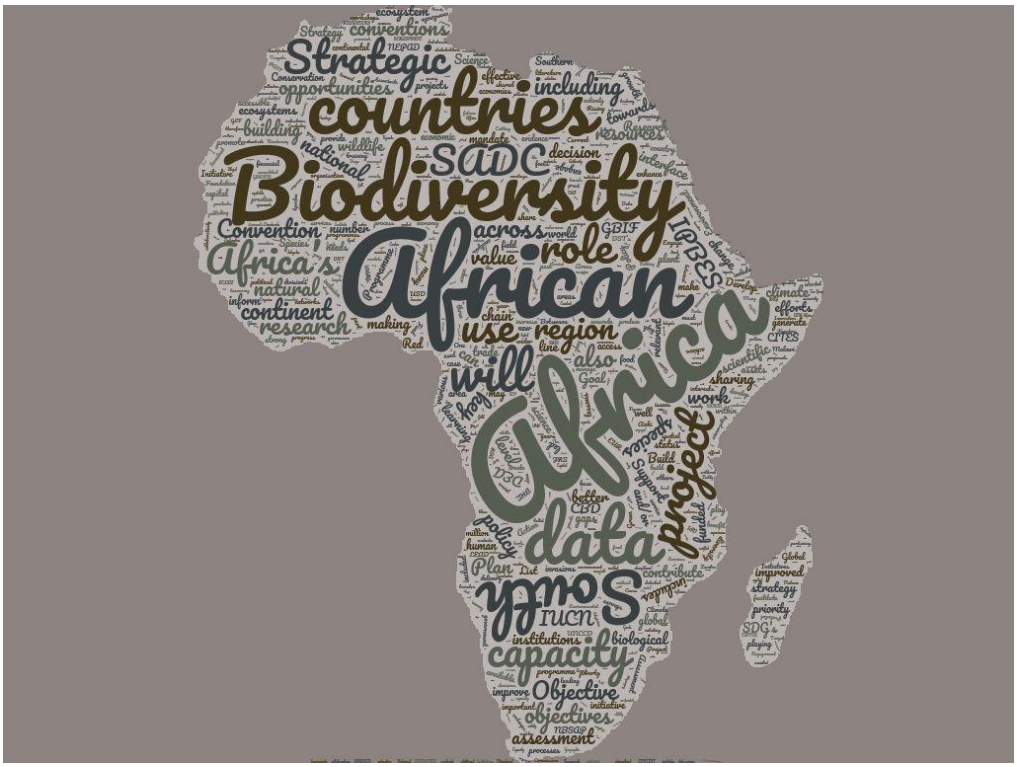
SANBI
Biodiversity for Life
South African National Biodiversity Institute

SANBI REGIONAL ENGAGEMENT STRATEGY FOR AFRICA

2016-2021



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1. INTRODUCTION

Africa is one of the most megadiverse continents in the world. Here biodiversity plays a critical role in sustainable development, provides vital ecosystem services and is one of our greatest regional assets. The benefits of biodiversity are crucial to key economic sectors (i.e. forestry, agriculture, fisheries, tourism, health and energy) and to providing solutions to sustainable development and poverty alleviation on the continent. The management of our natural assets and the information related to this are crucial.

Africa is a continent grappling with many challenges, but it is also alive with possibility and booming with optimism. To some Africa is the birth place of human kind, a place with exceptional beauty, brimming with amazing wildlife and human ingenuity. To others, its narrative has evolved from yesterday's story, a story of slavery, of everything gone wrong, a history of extractive resource utilisation by foreign interests, a "dark continent"- to an **Africa Rising**. A place "not so dark" as indicated by the Economist in the 1990s, to a continent with significant foreign direct investment which has increased over time. Although regional peace and prosperity is marred by episodes of conflict, disease and famine, African lives have by most accounts, improved considerably over the past decade.

Africa's economies are on the move, the continents GDP rose significantly from 2000-2008, the incidence of poverty, as measured by the World Bank, has declined significantly[1] and today Africa ranks amongst the **fastest growing economic** regions in the world.[2,3] This growth has been sustained for the last decade, with seven of the world's fastest growing economies being located in Africa. But it is expected that this growth will be sustained for the next few decades, and that this economic growth not just be high but also that it is shared, in order to reduce the inequality of the people.

The average African's ecological footprint is still well below the average bio-capacity available per person and entirely dwarfed that of the average Westerner[4]. Currently, Africa supports approximately 60% of uncultivated land, and with a growing global population and mounting food requirements worldwide, most of this land is likely to come from six countries in Africa called the Guinea Savanna, where most of our natural assets are located. This is a great concern, as our **natural assets** are important to move towards a **green economy.**

There is significant potential for Africa to transition toward a **Green Economy** "that results in improved human well-being and social equity, while significantly reducing (or maintaining low) environmental risks and ecological scarcities."[5] Central to realising a Green Economy in Africa are the conservation and sustainable use of biodiversity and ecosystem services. Here, producing relevant, reliable and targeted biodiversity data will support better and targeted decisions by policymakers, leading to smarter economies. **The collection, collation, digitization, preservation, presentation and dissemination of biodiversity data are therefore of critical importance.**

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[1] World Bank (2015). Poverty & Equity – Regional Dashboard. Available from: http://povertydata.worldbank.org/poverty/region/SSA (accessed 10 Jul. 2015).

[2] Bloomberg (2015). The 20 Fastest-Growing Economies this Year. Available from: http://www.bloomberg.com/news/articles/2015-02-25/the-20-fastest-growing-economies-this-year

[3] Roxburgh C., et al. 2010. Lions on the move: the progress and potential of African economies. McKinsey Global Institute, Washington, DC.

[4] Http://www. footprintnetwork.org/en/index.php/newsletter/bv/humanity_now_demanding_1.4_earths.

[5] United Nations Environment Programme, 2016. What is the 'Green Economy'? Available from: http://www.unep.org/greeneconomy/AboutGEI/WhatisGEI/tabid/29784/Default.aspx [accessed 27 Jan. 2016].

Africa's natural capital and ecological infrastructure is very important. In South Africa, we speak about ecological infrastructure, nature's equivalent of built infrastructure. It includes our mountain catchments, wetlands, coastal dunes and is increasingly being recognised as important for service delivery. Approximately 36% of Africa's wealth is based on natural capital. Many assume that this growth comes only from oil. But this is not the case, while some do in fact have oil, countries like Ethiopia, Rwanda and Uganda have SOIL, they have developed their agricultural (natural) assets. While it is very positive that the economy has grown, we need to ensure that the data that supports our analyses, are mobilised and priority datasets are available to support analysis for amongst other things, natural capital accounting; and sectors such as energy, climate, water, food, infrastructure, mining and extractives as well as trade and investment. In ***a world that counts*** [6] the United Nations describe data as the lifeblood of decision making and the raw material for accountability. Thus, good and accurate data are key building blocks for analysis, in support of the 17 Sustainable Development Goals, including the management of our biodiversity and ecological infrastructure.

Africa boasts a substantial share of the world's biodiversity including one-fifth of all mammal species and one-quarter of all bird species.[7] Despite this, African species are dramatically underrepresented in the world's freely-accessible biodiversity information resources. Only 4 % of the circa 0.5 billion records available through the Global Biodiversity Information Facility (GBIF) concern African biodiversity, the majority of which were published by non-African institutions.[8] Even within Africa, distributional biodiversity databases exhibit strong spatial bias due to uneven efforts in sampling, storing and sharing data which may, in turn, reflect high regional variation in capacity, funding and political will.

South Africa has made considerable progress in the field of biodiversity informatics, not least by joining GBIF and publishing over 11 million primary biodiversity records (South African GBIF country report). In collaboration with the Department of Science and Technology (DST) and the Department of Environmental Affairs (DEA), SANBI has exercised leadership by galvanizing a broader African community of practice to share lessons, strategize and collaborate in mobilising biodiversity data, and in this way, strengthening South-South and North-South cooperation.

In addition, SANBI has displayed leadership and participation in many African biodiversity initiatives, across its two branches i.e. the Conservation Gardens and Tourism Branch and the Biodiversity Science and Policy Branch since the 1990s. Here, one of these southern African regional initiatives being the Southern African Botanical Diversity Network (SABONET) project lead by SANBI's Biosystematics and Collections Division. This capacity building project supported the training and development of a new cohort of competent plant taxonomists, plant diversity specialists and horticulturists capable of dealing with biodiversity challenges in the southern African region. The region has since witnessed an emergence of strong networks, partnerships and collaborations among and between botanical research institutes. Since the establishment of the SABONET capacity building project (1996 to 2005), SANBI has been working with and supporting the development of Africa's botanical gardens, from Ethiopia to Namibia and is also closely associated with international

[6] IEAG 2014. A world that counts. Mobilising the Data Revolution for Sustainable Development. Report prepared by The United Nations Secretary-General's Independent Expert Advisory Group on a Data Revolution for Sustainable Development, at the request of Secretary General of the United Nations, New York.

[7] United Nations Environment Programme, 2008. Africa: Atlas of our changing environment. UNEP, Nairobi, 2008. ISBN: 9789280728712, at p. 23.

[8] Bánki, O., 2015. The State of Biodiversity Data in Africa. Presented at Africa Rising: Mobilising Biodiversity Data for Sustainable Development, Cape Town. Available at: <http://biodiversityadvisor.sanbi.org/wp-content/uploads/2014/11/1.5._OlafBanki_State-of-biodiversity-data-in-Africa.pdf> [accessed 9 Dec. 2015].

organisations that support botanical gardens worldwide i.e. the Botanic Gardens Conservation International (BGCI).

One of Africa's main challenges in meeting its own development needs, as well its ability to participate in, and influence, international agendas, is the lack of robust evidence to inform decision making, including information on biodiversity. This was highlighted in the recent global process to assess the decline in pollinators and its impact on food security run by the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES). There was limited participation by African countries leading to concerns expressed through the Convention on Biodiversity that African issues were not receiving sufficient attention. South Africa has strong scientific capacity and SANBI can therefore play an important role in strengthening African science and its uptake in regional and global processes.

African economies still rely substantially on the use of biodiversity, including non-extractive industries such as tourism as well as extractive activities such as bushmeat consumption, trophy hunting, timber harvesting, and the use on non-timber forest products. Many African countries have identified bioprospecting and biotrade as areas for economic development. The proper development and management of all biodiversity-based industries and their integration with other major industries such as mining and agriculture are critical for sustainable development. South Africa is committed to developing the biodiversity economy and SANBI plays in key role in developing the evidence base to support these activities. This is a crucial area where SANBI can interact with other African countries to collectively strengthen the evidence base for decision making relating to the biodiversity economy.

Similarly, biological invasions threaten development and biodiversity conservation objectives across the continent. South Africa has made a significant investment in biosecurity and the management of biological invasions and SANBI has developed particular skills in this area. Biological invasions occur across political boundaries and SANBI can both contribute to and benefit from regional collaboration to reduce the risk of invasion and mitigate the impacts arising from biological invasions.

Furthermore, SANBI is leading a project supporting biodiversity assessment and prioritisation in three pilot countries in Africa i.e. Botswana, Ethiopia and Malawi. Here it is intended to test the recently developed guidelines on *Mapping Biodiversity Priorities*, and show its relevance for supporting the revision and/or implementation of NBSAPs.

In its emerging work in Climate Finance, SANBI participates actively in a network of African and other developing country institutions who are accredited as global fund entities. As part of this effort, SANBI collaborates with African institutions to develop best practice and capture lessons to inform future structuring of international financial instruments.

A detailed list of past and current initiatives is detailed below in the document, providing evidence of the large scope of SANBI's engagement and leadership on the African continent over time.

2. PURPOSE

There are now significant opportunities for SANBI to play a much more active regional role. The SANBI Regional Engagement Strategy for Africa has been developed to guide SANBI's efforts in the region in support of national and regional priorities for biodiversity management. It provides a framework for the implementation of biodiversity priorities in the African region, as opportunities for collaboration on the continent are growing, due to an increase in emerging economies and

investment on the continent. This provides an ideal opportunity for SANBI to consider its strategic role in the African biodiversity research, management, conservation and policy landscape.

2.1. Strategic Objectives

This regional engagement strategy identifies five strategic priority areas to advance SANBI's efforts across the value chain, to support the generation, management and use of biodiversity information for conservation, decision-making and sustainable development in Africa. These include:

Strategic Objective 1: Collaboration and partnership with African botanical gardens to serve as windows into national biodiversity and culture

Strategic Objective 2: Strengthen capacity to mobilise foundational data to fill the data and knowledge gaps in support of education, research and analysis that is necessary for decision making for sustainable development

Strategic Objective 3: Build capacity to support biodiversity research, assessments and planning, to inform decision making.

Strategic objective 4: Build institutional capacity in Biodiversity Information Management through empowering stakeholders to produce, make accessible and use accurate biodiversity data, information & knowledge in support of sustainable development

S**trategic Objective 5:** Strengthen South Africa's role in supporting SADC and/or other African countries in fulfilment of the National Development Plan and international conventions including UNFCCC, CITES, UNCCD and the CBD (in line with support from DEA).

2.2. The case for strengthening regional engagement

To determine the parameters, direction, and character of SANBI's role, it is necessary to ask a number of questions. To what extent is SANBI already engaged regionally? Could SANBI's regional activities benefit from better planning and coordination? Why should SANBI choose to *strengthen* or *limit* its regional engagements? Which strategic drivers and factors should determine SANBI's regional thematic and geographical niche space? How might SANBI fit within the framework of regionally-active partners and initiatives so as to maximize synergies and avert duplication?

To answer the above questions it is necessary to examine and discuss many interrelated issues pertaining to the rationale for engagement, institutional mandate and legitimacy, existing and potential capacity, optimal geographic scope, branding and marketing, potential funding sources and financial models, international obligations, and partnership opportunities. These aspects are detailed below.

There are various reasons why SANBI should choose to strengthen its cooperation with other African countries. These are listed as follows:

i) **To enhance synergistic effects** (the combined effort is greater than the sum of its parts). This is twofold. First in terms of creating critical mass to address issues at a regional scale. Marine issues might be one example where there are potential nodes of capacity (e.g. South Africa and Kenya) that collectively could help marine biodiversity along the entire eastern seaboard. And second, through combined submissions and actions in the

international policy arena. South Africa does try to work at SADC level but enhanced cooperation is needed at the technical level to jointly try to influence regional and international policy.

ii) **To address transboundary issues.** SANBI must devote attention to other African countries because environmental problems are transboundary in nature, especially insofar as biodiversity is concerned. Wildlife trafficking cannot be stopped without engaging port authorities in Mozambique, the looming water crisis cannot be solved without engaging Lesotho, and sardine stocks cannot recover without engaging Namibian fleets. Clear and robust policy frameworks and regulations must underpin effective international governance in order to address international environmental problems.

iii) **To give voice and support the African position, through leadership and diplomatic engagement's, in global initiatives.** By exercising strategic leadership and diplomacy South Africa can promote and support international environmental cooperation and thereby strengthen Africa's geostrategic role in a changing world.

iv) **To facilitate knowledge exchange and enhance capacity**. Through the process of mutual observation and learning exchanges, countries can build capacity and accelerate the spread of best practice.

v) **To be more cost-effective and avoid duplication of effort**. International environmental cooperation has the potential to reduce a partner's costs by sharing the cost implications across nations, sharing technology and increasing the efficacy of conservation efforts.

vi) **To increase financial stability and sustainability.** Institutions are frequently judged by the number of jobs they create and the amount of revenue they generate. Engaging with regional partners and donors may help to bring in additional revenue and build stronger teams in South Africa. Many international donors focus on very poorly resourced countries. This provides an opportunity to engage in these projects, and work in synergy with countries that have access to these funds such as Mozambique and Zambia.

vii) **To enliven and enrich careers in the conservation sector.** Africa is full of natural treasures, spectacular wildlife, and social warmth. Each of us stands to learn a great deal and gain considerable personal satisfaction from engaging with other African countries. A wonderful aspect of working in the environmental sector is the opportunity to engage with other countries.

2.3. SANBI's role in the National and Regional Landscape

The **South African National Biodiversity Institute (SANBI)** has a mandate to, amongst others, monitor, manage, co-ordinate, research and report on many aspects of biodiversity within the country. One of SANBI's very clear mandates is to also to "collect, generate, process, coordinate and disseminate information about biodiversity and sustainable use of indigenous biological resources and maintain databases". As a knowledge-based organisation, biodiversity information is *the* key resource that drives research and innovation, informs planning and policy development processes,

informs decisions and is the basis to evaluate progress and impact. It is therefore important that our biodiversity and biodiversity information is managed as a strategic asset that will leverage shared value to South Africa in supporting sustainable decisions towards the broader national developmental objectives.

SANBI is a dedicated national biodiversity institution that bridges science, knowledge, policy and implementation. SANBI's value chain (Fig. 1) builds from a foundation of basic scientific information to create assessments and build a knowledge base that can influence policy and contribute to government objectives.

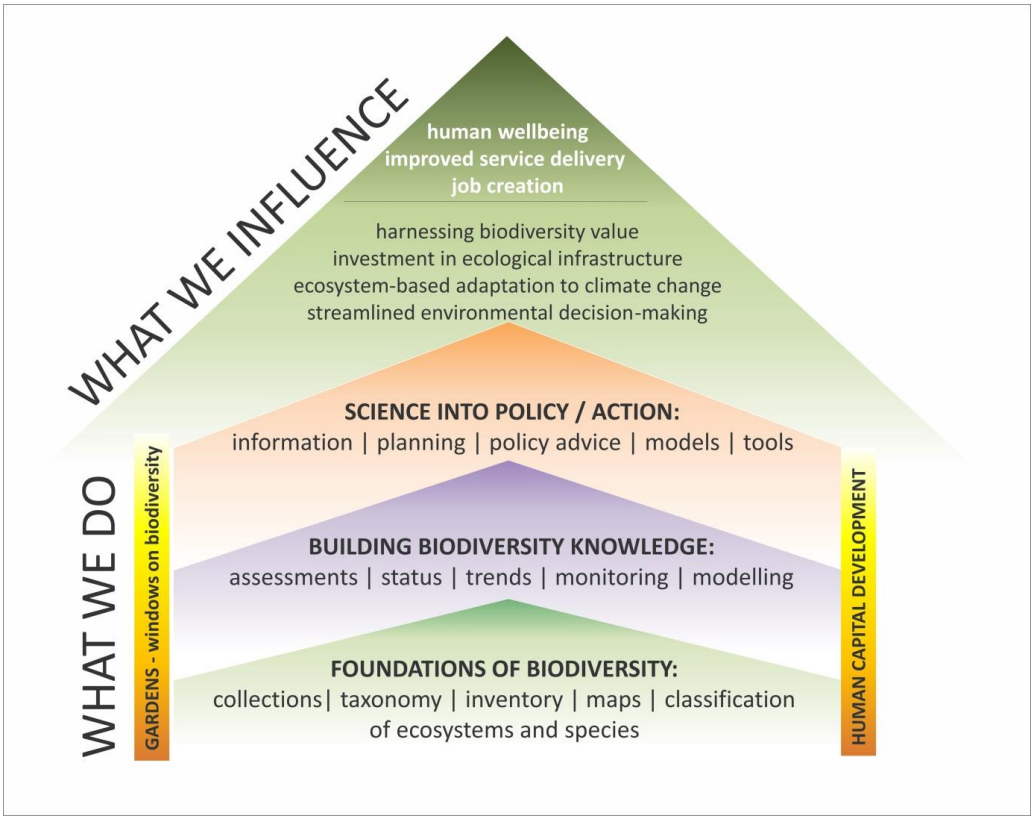

Figure 1. The SANBI value chain

These efforts are conducted across the Biodiversity Science and Policy Branch of the organisation and involve the divisions of Biosystematics and Collections, Biodiversity Research, Assessment and Monitoring Biodiversity Information and Policy Advice and Conservation Gardens & Tourism. These divisions work across the value chain to harness the value of biodiversity, facilitate the improvement of ecosystem services and ecological infrastructure, and achieve objectives to deal with climate change, all to support developmental objectives such as improving poverty alleviation, job creation and human well-being.

This African Engagement Strategy will ensure that programmatic activities at the regional level are coordinated and aligned to national government priorities and to relevant regional, international and national initiatives as we strive towards Outcome 10 and Outcome 11, of the National Development Plan, to *"Create a better South Africa, a better Africa and a better world"*.

3. BACKGROUND AND POLICY CONTEXT OF AFRICAN ENGAGEMENTS

3.1. Context: South Africa's role

South Africa is playing an increasingly active role across Africa. In recent years, the country has been involved in peace-keeping missions[9] and conflict resolution.[10] It has also played a leadership role by

[9] http://www.sanews.gov.za/south-africa/sa-soldiers-applauded-peace-keeping-efforts-africa
[10] http://mg.co.za/article/2011-07-09-zuma-hails-mbekis-role-in-sudan

championing African interests in multilateral environmental agreements.[11] It has succeeded in elevating sustainable development as a special priority of the African Union (AU), now manifested in various continent-wide initiatives such as the New Partnership for Africa's Development (NEPAD) Environment Initiative and Agenda 2063.[12]

South Africa has engaged key regional and international partners to generate and access financial, technical and institutional support for Africa. At the sub-regional level, South Africa has encouraged enhanced integration particularly in **the Southern African Development Community (SADC)**, and in alignment with **NEPAD**, Agenda 2063 and the Programme of Action.

In seeking to strengthen African and SADC institutions, South Africa has actively supported AU programmes on the environment, climate change and wildlife management. So too, South Africa has participated actively in the African Ministerial Conference of Environment (AMCEN) as well as various multilateral engagements with an environmental focus.

The **Department of Environmental Affairs (DEA)** has a **mandate** to strengthen regional cooperation on the continent, a key area of interest for the **Africa and Bilateral Relations component**. The scope of strategic environmental engagements at continental and SADC level is evolving and there are a number of potential opportunities which can be harnessed. This includes (1) documenting the range of African and SADC regional environmental and biodiversity programmes in which SANBI and DEA could play a role; (2) interrogating SANBI's potential role for research and documenting Africa's biodiversity while advancing DEA's /South Africa's interests; and (3) SANBI and DEA to continue collaboration in developing strategic approaches and programmes for work on biodiversity in Africa and the SADC Region. SANBI also supports DST's regional strategy which is in line with DST's ten-year innovation plan.

3.2. Policy framework

A SANBI regional engagement strategy will deliver products that contribute to the fulfilment of the following international and national strategies and objectives:

3.2.1. International

3.2.1.1. Sustainable Development Goals (SDG's)

Built on the MDG's and the many multilateral agreements, the 17 SDGs represent a series of **visionary goals**, to end poverty, fight inequality and injustice, and tackle climate change by 2030. It aims to contribute to a more equitable future for humankind.

Figure 2. The 17 SDGs

Biodiversity has a potential role in supporting a number of the SDGs (see below), thus **SANBI contributes to the sustainable development goals through national and international obligations including**,

[11] http://www.climateemergencyinstitute.com/unfccc_2015.html
[12] http://agenda2063.au.int/en/sites/default/files/agenda2063_popular_version_05092014_EN.pdf

Goal 2 End hunger, achieve food security & improve nutrition & promote sustainable agriculture

Goal 4 Ensure inclusive & equitable quality education & promote lifelong learning opportunities for all

Goal 6 Ensure availability & sustainable management of water & sanitation for all

Goal 8 Promote sustained, inclusive & sustainable economic growth, full & productive employment & decent work for all

Goal 13 Take urgent action to combat climate change & its impacts

Goal 14 Conserve & sustainably use the oceans, seas & marine resources for sustainable development

Goal 15 Protect, restore & promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, & halt & reverse land degradation & halt biodiversity loss

Goal 17 Strengthen the means of implementation & revitalize the global partnership for sustainable development

SANBI's contribution to SDGs through national & international obligations & priorities

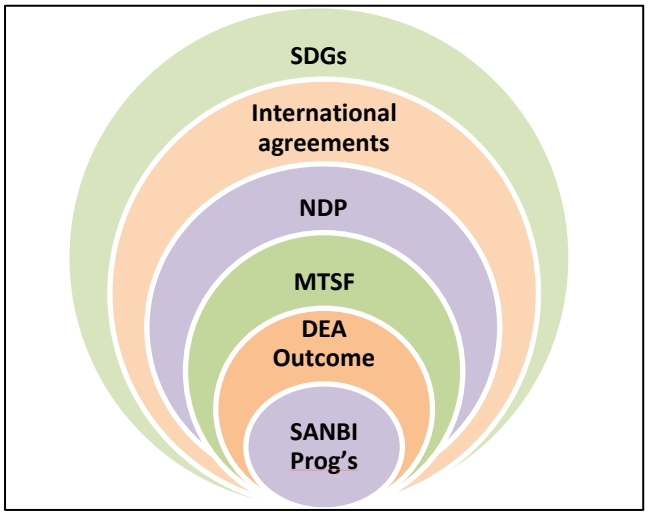

Figure 3. SANBI's national obligations

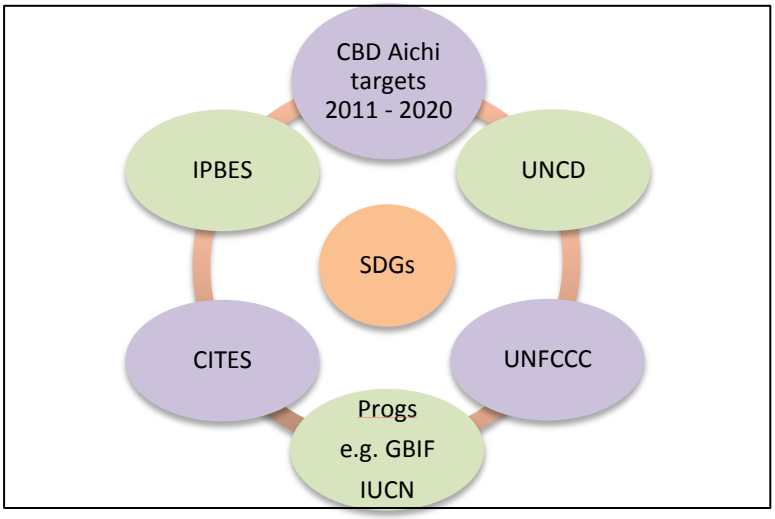

Figure 4. SANBI's international obligations

3.2.1.2. Aichi Targets of the Strategy of the Convention on Biological Diversity (CBD) for 2011-2020

South Africa is a signatory to the Convention on Biological Diversity, which means it has an obligation to conserve its biodiversity. As part of the CBD's Strategic Plan for Biodiversity, member states must strive to achieve the 20 Aichi Targets for biodiversity conservation. The regional strategy will produce outputs or have direct relevance to the following targets, but may also be used for others:

- Strategic goal C: Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity
- Strategic goal E: Enhance implementation through participatory planning, knowledge management and capacity building.

- ***Target 19*:** By 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.

The fourth *Global Biodiversity Outlook* (GBO-4), a mid-term assessment of progress towards the Strategic Plan 2011 to 2020, identified a number of 'key potential actions' that could accelerate progress towards each of the Aichi Biodiversity Targets, if more widely applied. With respect to Target 19 on sharing of information and knowledge, these actions included **"strengthening and promoting the further mobilization of and access to data by, for example, encouraging the use of common informatics standards and protocols, promoting a culture of data sharing … investing in digitization of natural history collections and promoting citizen scientists' contributions to the body of biodiversity observations."**

The 'Pyeongchang Roadmap' encouraged countries to make use of the 'key potential actions' needed to implement the Strategic Plan, including further mobilization of and access to data. **The activities enabled under this initiative thus respond directly to globally-agreed priorities for accelerated action to achieve targets on biodiversity conservation and thus support sustainable development.**

3.2.2. Regional

Key environmental initiatives in Africa include the New Partnership for Africa's Development (NEPAD) Environment Initiative, the African Convention on Conservation of Nature and Natural Resources (Maputo Convention), the environmental components of Agenda 2063, the AU Climate Change Strategy, and the African Common Strategy on Combatting Illegal Exploitation and Illegal Trade in Wild Fauna and Flora. Several of these merit further discussion.

The NEPAD Environment Initiative has eight subthemes for priority interventions. These include: combating desertification, wetland conservation, invasive alien species, coastal management, global warming and climate change, trans-frontier conservation areas, environmental governance and financing.

The African Convention on Conservation of Nature and Natural Resources (Maputo Convention) is a continent-wide instrument for the conservation of Africa's natural resources. South Africa signed the Convention on 18 April 2012 in Addis Ababa and ratified this Convention in April 2013.

3.2.3. National:

3.2.3.1. National Biodiversity Framework: all six Strategic Objectives for regional cooperation with other Southern African countries

- Strengthen and improve the development of integrated management and tourism plans of the Transfrontier Conservation Areas and Transboundary World Heritage Sites.
- Develop and implement appropriate incentives for biodiversity conservation and its sustainable use in cooperation with our neighbouring countries
- Develop, implement and strengthen programmes for international scientific collaboration, sharing of information and technology transfer
- Develop and implement a coordinated regional programme to increase awareness, knowledge and appreciation of biological resources at various levels
- Strengthen the research and development capacity of the protected area system

3.2.3.2. Medium Term Strategic Framework (2014-2019):

- Strategic Objective 6.5: Develop a skilled and capable workforce to support an inclusive growth path.
- Strategic objective 6.10: Protect and enhance our environmental assets and natural resources.
- Strategic Objective 6.11: Create a better South Africa and contribute to a better Africa and a better world.

3.2.3.3. DST's 10-Year Innovation Plan: The regional strategy will contribute to the achievement of the objectives of the DST's 10-Year Innovation Plan for South Africa, Innovation towards a Knowledge-based Economy 2008–2018 through:

- Developing human capital;
- Generating new and relevant knowledge;
- Facilitating the establishment of research infrastructure
- Bridging the divide between research results and socio-economic outcomes.

3.2.3.4. National Biodiversity Strategy and Action Plans (NBSAPs):

NBSAPs are instruments for implementing the Convention on Biological Diversity at the national level, and while the vast majority of Parties to the Convention have compiled NBSAPs, Aichi Target 17 calls for all Parties to develop, adopt and begin implementing "effective, participatory and updated" NBSAPs by 2015. South Africa's updated NBSAP was published in mid-2015. One of the document's six objectives concerns "building effective knowledge foundations". A pertaining outcome is that "relevant datasets of species and ecosystems are coordinated and accessible". **The NBSAP also includes a strengthened mandate to engage and assist other African countries in managing biodiversity information.** This presents opportunities for SANBI to secure enhanced political support and resources for its regional work.

3.2.3 Institutional

SANBI's mandate comes from the National Environmental Management Biodiversity (NEMBA) Act No. 10 of 2004. In the framework of this strategy, it is intended to look at strengthening South Africa's role in supporting SADC and other African countries in fulfilment of the National Development Plan and international conventions including UNFCCC, UNCCD and the CBD. SANBI's divisions support a number of the conventions and international initiatives, as indicated in Figure 4. It stipulates that "The Institute… (j) must collect, generate, process, coordinate and disseminate information about biodiversity and the sustainable use of indigenous biological resources and establish and maintain databases in this regard…"

As an institution, data is mobilised by SANBI and its partners. It coordinates the generation, management, use and publishing of data, across its divisions and value chain, including efforts by the Foundational Biodiversity Information Programme, the iSPOT initiative, the monitoring framework, NBA, SANBI-GBIF, IUCN red listing efforts and others.

All this data and knowledge generated will ultimately support the objectives of the CBD, SDGs, Intergovernmental Panel for Biodiversity and Ecosystem Services (IPBES), and the conventions which national governments are committed to (as listed above). The IPBES platform includes capacity building and the generation of data and knowledge among its four core functions, alongside the development of policy tools and preparation of assessments to enhance the science-policy interface.

Improving the availability of data and scientific information on biodiversity will strengthen the ability of developing countries to contribute to and benefit from IPBES activities.

4. PAST AND CURRENT BIODIVERSITY AND BIODIVERSITY INFORMATICS INITIATIVES LED AND SUPPORTED BY SANBI

4.1. Biodiversity Initiatives

To date, the majority of SANBI's regional efforts have been at the southern African/SADC level, with the exception of its Biodiversity Information Management efforts, which has been driven and led at the continental scale. The institute has been very active internationally with high levels of involvement in various international initiatives, across the three branches of the organisation. These include continental IUCN Red List assessments, National Geographic funded surveys of biological hotspots in Mozambique and Malawi, the Maputaland-Pondoland-Albany Hotspot Learning Network implemented in Mozambique and Swaziland and the Norwegian-funded Capacity Enhancement Project. Moreover, SANBI is playing significant roles in many international initiatives and intergovernmental processes, like the Convention on Biological Diversity's Consortium of Scientific Partners (CSP), the IUCN, IPBES, and others. Details of these initiatives are provided in Appendix 1.

5. THE WAY FORWARD

Achieving the five strategic objectives will require further expansion of SANBI's managed network of partners, more broadly into Africa, to further strengthen SANBI's role in supporting the data-science-policy interface, and contributing to key international obligations and conventions. The key outcomes for the five strategic objectives are:

- **Strategic Objective 1:** Collaboration and partnership with African botanical gardens to serve as windows into national biodiversity and culture
- **Strategic Objective 2:** Strengthen capacity to mobilise foundational data to fill the data and knowledge gaps in support of education, research and analysis that is necessary for decision making for sustainable development
- **Strategic Objective 3:** Build capacity to support biodiversity research, assessments and planning, to inform decision making.
- **Strategic objective 4:** Build institutional capacity in Biodiversity Information Management through empowering stakeholders to produce, make accessible and use accurate biodiversity data, information & knowledge in support of sustainable development
- S**trategic Objective 5:** Strengthen South Africa's role in supporting SADC and/or other African countries in fulfilment of the National Development Plan and international conventions including UNFCCC, CITES, UNCCD and the CBD (in line with support from DEA).

Strategic Objective 1: Collaboration and partnership with African botanical gardens to serve as windows into national biodiversity and culture

a. Explore opportunities to partner with, and support, the management and development of African botanical gardens.

b. In partnership with Botanic Gardens Conservation International (BGCI) and other strategic partners, explore the establishment of an African Botanic Gardens Network.

c. Support the capacity building and development of staff associated with African botanical gardens.

d. Mutual sharing and transfer of skills and knowledge between SANBI and African botanical gardens staff.

e. Explore opportunities to expand and enhance African botanical gardens biodiversity conservation collections and contributions towards national and international research, education, tourism and conservation initiatives.

f. Develop effective management plans to prevent new biological invasions and to manage areas of African botanical gardens that are invaded by invasive alien species.

Strategic Objective 2: Strengthen capacity to mobilise foundational data to fill the data and knowledge gaps in support of education, research and analysis that is necessary for decision making for sustainable development

a. Mobilise[13] historic and priority primary biodiversity records to be published on the GBIF platform; which will support analysis and modelling, monitoring and assessment, and inform foundational data gaps

b. Assist African countries (SADC) to address sampling gaps (including barcodes), for priority species by participating in field trips. This will improve the quality of baseline data.

Strategic Objective 3: Build capacity to support biodiversity research, assessments and planning, to inform decision making

a. Support and participate in species and ecosystem assessments for countries in the region, in line with agreed priority SADC countries.

b. Support spatial biodiversity assessment and planning as a tool in NBSAP development on the continent, and for developing map products, headline biodiversity indicators & guidelines; in line with agreed priority SADC countries.

c. Support the development of capacity for undertaking spatial biodiversity assessment and planning,

d. Participate in capacity building activities in support of Natural Capital Accounting and the management of biological invasions.

e. Enable information sharing and gathering on Invasive Alien Species pathways in the SADC region in support of CBD.

[13] Mobilise refers to the digitization of new/existing specimens or, making accessible non digital accessible data (digital but not published as yet)

Strategic objective 4: Build institutional capacity in Biodiversity Information Management through empowering stakeholders to produce, make accessible and use accurate biodiversity data, information & knowledge in support of sustainable development

a. Build capacity to ensure fitness for use, management and publishing of data for science and policy
b. Ensure that technology, tools, systems and infrastructure that is used and developed, for data sharing is relevant to the African context for easy adoption
c. Build biodiversity informatics capacity in the use of approved biodiversity standards and tools, to enable the sharing of data for SADC and eventually the continent (Biodiversity Information Hub).
d. Develop Biodiversity Informatics as a field of science through development of curricula & a research agenda, towards the vision for a Centre for Biodiversity Information Management for Africa.

Strategic Objective 5: Strengthen South Africa's role in supporting SADC and/or other African countries in fulfilment of the National Development Plan and international conventions including UNFCCC, CITES, UNCCD, CBD (in line with support from DEA)

a. SANBI to play a regional coordination role in support of the conventions, where relevant, in line with a mandate from DEA and for sustainable development
b. Participate in regional governance and networks to coordinate continental processes
    i. Hosting IUCN Red List Authorities (e.g. for Southern African plants, chameleons, cycads) to support threat assessments at the regional or continental scale.
    ii. Through the Scientific Authority, engage with CITES structures and develop capacity in other African countries to improve oversight of species in trade.
    iii. Support the IPBES regional and thematic assessments in support of the data-science-policy interface.
    iv. The Biodiversity Information Management and Planning Directorate lead and coordinate the GBIF-Africa Network, to facilitate improved biodiversity data publication and use, in support of the conventions and for sustainable development.
    v. The Biodiversity Information Management and Planning Directorate play a coordination role of the BHL-Africa Network in Africa, to facilitate improved biodiversity literature publication and use, in support of the conventions and for sustainable development.
    vi. As an accredited entity of the Green Climate Fund and Adaptation Fund, SANBI participates in UNFCCC and associated events with a view to accessing funding support for South Africa and collaborating with other developing countries, including African countries, to develop policy recommendations from best practice.

In the last decade, SANBI has played a strong leadership role in guiding the Africa agenda in the area of Biodiversity Informatics, continentally. It has convened numerous meetings to foster increased coordination of activities in this new field of science and fostered a stronger network and partnerships in Biodiversity Information Management. It has been instrumental in the development of consortia, in the sub-regions to take the work of this data-science-policy network forward, and for Africa to come together with a unified voice in the global context. With these 5 strategic objectives

in place, and with SANBI being requested to convene the GBIF-Africa Network, it is intended to further develop a business case for Biodiversity Informatics in Africa, to explore funding opportunities with government departments such as the Department of Science and Technology, as well as the philanthropic JRS organisation, that has a key focus in data biodiversity data mobilisation in Africa, and has tailored its mission in line with this.

Over the past 15 years, SANBI has also worked largely within the southern African/SADC region to strengthen the scientific evidence to support sustainable use of wildlife. This includes regional collaboration for resource assessments (e.g. devils claw in South Africa, Namibia, Botswana and Zimbabwe), transboundary assessments of wildlife use (e.g. elephants in South Africa and Botswana) and the development of capacity for more effective implementation of CITES (e.g. hosting training workshops and trade analyses for the SADC region). Wildlife management and especially illicit trade are major policy issues in the region and SANBI's past activities provide a sound basis for a more strategic engagement and open up funding opportunities for further work.

In the upcoming years SANBI will also prioritise engaging and collaborating with African States and Institutions in its work as an accredited entity of the Green Climate Fund and Adaptation Fund.

The African continent is alive with opportunity and over the next five years, SANBI as an organisation will be expanding its efforts, across the Biodiversity Science and Policy Branch, to engage actively in this exciting evolving regional landscape.

APPENDIX 1: PAST AND CURRENT BIODIVERSITY AND BIODIVERSITY INFORMATICS INITIATIVES LED AND SUPPORTED BY SANBI

1.1. Current Biodiversity Initiatives

- **SADC Crop Wild Relatives**. Bioversity International is leading a project entitled, "*In situ* conservation and use of crop wild relatives in three ACP countries (Zambia, South Africa and Mauritius) of the SADC region" is a three-year project (2014-2016) co-funded by the European Union and implemented through the ACP-EU Co-operation Programme in Science and Technology (S&T II) by the ACP Group of States.
- **Biological surveys in hotspots and areas of conservation concern.** The National Geographic Society and the NRF has awarded SANBI funding to conduct biodiversity surveys in known sampling gaps, which includes barcoding of reptiles and amphibians. This is a 7-year project (2014-2021), and will contribute to conservation in Africa by providing GIS layers of biological diversity for ecosystem and biodiversity assessments and will provide quality baseline data which can be used toward IUCN Redlist assessments. This initiative includes South Africa, Mozambique and Malawi.

- **IUCN Red List Assessments:** SANBI is the Red List Authority (RLA) Focal Point for southern African plants, chameleons and cycads. The RLAs support the Species Survival Commission to improve the conservation status and sustainable use of these groups through updates to the IUCN Red List. Some of this data is used to inform CITES decisions.

- **NCAP**: A Norwegian funded project which was initiated in 2014-2015 (with spending in 2016/17) which focused on building regional capacity for ecosystem and biodiversity assessments in the Southern African region. It also aimed to initiate learning networks for assessments in support of the IPBES program of work and to use South Africa's national assessment of biodiversity and ecosystems to build capacity in an upcoming cohort of promising black early career scientists from the region. This initiative included a number of African partner countries including Madagascar, Mozambique, Botswana, Namibia, Zimbabwe, Swaziland and Lesotho.

1.2. Past Biodiversity Initiatives led by SANBI

- **African Plants Initiative (API):** The API was funded by the Mellon Foundation and Kew Gardens, and was aimed at the digitization and imaging of African plant type specimens. It was implemented between 2004 – 2006, between South Africa, Angola and Mozambique. Staff members from SANBI's National and Compton Herbaria visited the Lubango Herbarium, Angola to provide support to API project activities and assist in herbarium curation activities, also LMU (Eduardo Mondlane University) and LMA Herbaria (2010-2012) in Mozambique. This project also sought to explore research collaborations.

- **Barcode of Wildlife**: This was a three year project (2013-2015), funded by Google and supported by SANBI and the International Barcode of Life Initiative. The project developed a forensic standard reference library of DNA barcodes for illegally traded plant and animal

species, for use in wildlife crime investigations. African partner countries included Nigeria and Kenya.

- **Southern African Botanical Diversity Network (SABONET):** This initiative started in 1996 and came to a close at the beginning of 2005. It was funded by GEF/UNDP and co-funded by USAID / IUCN ROSA. It aimed at developing a strong core of professional botanists, taxonomists and plant diversity specialists in 10 countries of Southern Africa, competent to inventory, monitor, evaluate and conserve the diversity of the region, in response to the needs of the CBD. SABONET enabled staff of botanical institutes to share expertise and skills with one another. Partner countries included Angola, Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Zambia and Zimbabwe.

- The **Conservation and Management of Pollinators for Sustainable Agriculture** (also known as the Global Pollination Project – GPP), 2009 to 2014. This was a GEF-funded project coordinated by FAO which involved three African countries (Ghana, Kenya and South Africa) as part of a broader group of seven countries. The development objective of the project was improved food security, nutrition and livelihoods through enhanced conservation and sustainable use of pollinators. SANBI led the South African component, hosted workshops and fieldtrips in South Africa and participated in meetings and field visits in the other countries.

1.3 Regional Biodiversity informatics initiatives led and/or supported by SANBI

- **Mobilising Africa's Biodiversity Data.** The project, 'Mobilizing Africa's policy and decision-making relevant biodiversity data' ran from October 2013 to December 2015.[14] Achievements of the programme have included the setting of thematic priorities for data mobilisation and the identification of capacity needs for mobilizing policy-relevant biodiversity information in a large number of African countries. This project was funded by the JRS Foundation and led by SANBI in close partnership with GBIF.
- **African Biodiversity Challenge (ABC).** The JRS has awarded SANBI a grant of USD 250,000 to implement a project which will engage, capacitate and incentivize a selection of African countries to mobilise biodiversity data. The project will entail organising specialised training workshops, a virtual helpdesk, national biodiversity information management forums, and a data-publishing competition. The project will commence once a Project Coordinator has been recruited to manage it.
- **Africa Rising:** The conference, *Africa Rising: Mobilising Biodiversity Data for Sustainable Development* took place from 19 to 22 May 2015 at Kirstenbosch National Botanical Garden in Cape Town. Approximately 100 delegates participated representing 21 African countries and 10 international organisations. The delegates produced a joint *Declaration on Biodiversity Information for Sustainable Development in Africa* and a *Plan of Action for Mobilising and Mainstreaming Africa's Biodiversity Data*.

[14] http://biodiversityadvisor.sanbi.org/participation/mobilising-africas-biodiversity-data/

- **Programme for African Regional Engagement**. SANBI will be collaborating with the Department of Science and Technology (DST) towards building a more sustained programme for regional engagement focusing initially on biodiversity informatics.
- **National Biodiversity Strategy & Action Plan.** South Africa's updated NBSAP was published in mid-2015. One of the document's six objectives concerns "building effective knowledge foundations". A pertaining outcome is that "Relevant datasets of species and ecosystems are coordinated and accessible". The NBSAP also includes a strengthened mandate to engage and assist other African countries in managing biodiversity information. This presents opportunities for SANBI to secure enhanced political support and resources for its regional work.
- **Supporting African botanical gardens.** Since the establishment of the SABONET capacity building project (1996 to 2005), SANBI has been working with and supporting the development of Africa's botanical gardens, from Ethiopia to Namibia. Some of the outputs from SABONET included a needs assessment of 20 southern African botanical gardens from eight southern African countries (2000), published proceedings of an African Botanic Gardens Congress (2002), as well as hosting a regional Botanical Gardens Management Course (2001) and Botanical Gardens Horticultural Course (2002). A total of 23 internships, linked to the threatened plant programmes of the respective gardens, were conducted for selected botanical gardens in the region. SABONET also published a useful book describing propagation techniques for rare southern African plants.
- **Botanic Gardens Conservation International (BGCI).** SANBI is closely associated with international organisations that support botanical gardens worldwide, namely Botanic Gardens Conservation International (BGCI) and the International Association for Botanic Gardens (IABG). SANBI and each of its national botanical gardens are members of BGCI, and various garden staff members have attended and participated in Global Botanic Gardens Congresses held internationally over the past 10 years. The Chief Director: Conservation Gardens & Tourism currently represents SANBI as a member of BGCI's International Advisory Council (IAC), as well as a council member of the IABG. In 2012 SANBI partnered with BGCI in organising an African Regional Workshop on Plant Conservation for representatives from various African botanical gardens, hosted in the Walter Sisulu- and Kirstenbosch National Botanical Gardens. The workshop covered the Global Strategy for Plant Conservation and conservation techniques for plant diversity. Participants came from Botswana, Ethiopia, Kenya, Swaziland, Tanzania, Uganda and Zambia. The workshop was organised with financial support from the UK's Department for Environment, Food and Rural Affairs (Defra). SANBI has also assisted in supporting plant conservation efforts in various African countries, including Nigeria and Uganda.
- **Foundational Biodiversity Information Programme.** SANBI coordinates this long-term programme to generate, manage and disseminate foundational biodiversity information and knowledge to improve decision-making, service delivery and create new economic opportunities. It is funded by DST and the National Research Foundation (NRF). Calls for proposals are issued each year and fund projects up to ZAR 1,000,000 over a 2 year period, or larger Integrated Team Projects that are ZAR 2,000,000 per year for three years. The funding is currently earmarked for South African applicants, but the scope of eligible projects may expand to other African countries, and through other funding streams.

- **Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) Africa Regional Assessment.** SANBI has actively participated in IPBES meetings and is currently playing a key role in the compilation of an Africa Regional Assessment. In consultation with the GBIF Africa Group, the Project Coordinator led the compilation of two data-related sections for inclusion in the assessment. This work was undertaken upon a request from a lead author, namely, Dr Sebataolo Rahlao. It can be anticipated that various additional opportunities for capacity building and knowledge production will arise as IPBES strengthens. SANBI enjoys strong relations with the Council for Scientific and Industrial Research (CSIR) which hosts the IPBES Technical Support Unit (IPBES) for Africa. Thus SANBI may be well-placed to contribute to and benefit from future IPBES-related activities.

- **Biodiversity Heritage Library (BHL) Africa.** BHL Africa is a consortium of natural history and botanical libraries that co-operate to digitise the legacy literature of biodiversity held in their collections and to make that literature available for open access. Though much of the core biodiversity literature from Africa exists in non-African institutions, rich and unique collections of materials reside in the national institutions and universities on the continent. In February 2015, the JRS Biodiversity Foundation awarded a USD 150,000 grant to SANBI to grow BHL Africa through the collaboration, assessment, and digitisation of African collections and by creating a sustainable network of institutions and countries to increase access to biodiversity materials held in Sub-Saharan African institutions. This project also entails developing the skills of the current BHL Africa members and forging relationships with potential members.

- **Biodiversity Information for Development.** The EU-funded, GBIF-led project, *Biodiversity Information for Development*, was launched at the Africa Rising conference. This EUR 3.9 million project will be implemented in Africa, the Caribbean and the Pacific. It will entail several calls for proposals worth up to EUR 60,000 each. The first call for proposals from African institutions is set to award EUR 900,000 in grants. SANBI's CEO is playing an advisory role as an 'honest broker' to help with the selection of projects. Additionally, there is a possibility that SANBI will participate as a partner in a regional project consortium.

- **Mainstreaming Biodiversity Information into the Heart of Government Decision Making.** UNEP-WCMC's has successfully raised USD 5.12 million in funding from the Global Environment Facility (GEF) to work intensively with 3 African countries – Ghana, Mozambique and Uganda – to mobilise policy-relevant biodiversity data and integrate it into decision-making processes. Case studies and lessons will be shared across the continent. SANBI's role will be that of an advisor. There may be opportunities to combine capacity-building workshops. The project will commence in early 2016.

- **Urban Natural Assets for Africa.** The UNA-Africa project, funded by SwedBio and coordinated by ICLEI – Local Governments for Sustainability drew to a close in December 2015. SANBI and GBIF partnered with ICLEI to implement this project. The project has subsequently been renewed with a USD 1 million grant to support capacity enhancement in African cities. ICLEI has requested that SANBI and GBIF remain as advisors to the project as the UNA-Africa training programme will involve biodiversity information management.

- **Sud Experts Plantes - Développement durable (SEP2D).** Following the success of the first SEP project, the French government has agreed to fund a EUR 5.3 million follow-up project which will focus on engaging African Francophone countries to enhance understanding of plant biodiversity, strengthen scientific capacities, streamline the science-policy interface

and promote the interests of African countries in international environmental forums. The project began in late 2015 and will continue for five years.

- **Biodiversity and Protected Areas Management Programme (BIOPAMA).** With support from GIZ, the International Union for Conservation of Nature (IUCN) and the EU's Joint Research Centre (JRC) are implementing a BIOPAMA Programme, which is focused on developing capacity in protected areas management and deploying the Digital Observatory for Protected Areas (DOPA) in Africa. The establishment of Regional Observatories for Protected Areas and Biodiversity is a central component of the BIOPAMA objective to build capacity and improve decision-making. The Regional Observatories will provide the best available scientific data, traditional knowledge, and lessons learned from field activities. A key feature of each Observatory is a Regional Reference Information System (RRIS). The RRIS integrates a diverse range of relevant protected area and biodiversity data and information, using open source web services.