



THE SOUTH AFRICAN STRATEGY FOR THE BIOSPHERE RESERVE PROGRAMME (2016 – 2020)



environmental affairs

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**THE SOUTH AFRICAN STRATEGY FOR THE BIOSPHERE RESERVE PROGRAMME
(2016 – 2020)**

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ACRONYMS AND DEFINITIONS

AfriMAB	African Biosphere Reserves Network
BR(s)	Biosphere Reserve(s)/Region(s)
BZ	Buffer Zone (in context of the Buffer Zone Strategy)
CBD	Convention on Biological Diversity (UN)
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CMS	Convention on Migratory Species
DAC	Department of Arts and Culture
DAFF	Department of Agriculture, Forestry and Fisheries
DEA	Department of Environmental Affairs
DEA BR	Department of Environmental Affairs section responsible for the Man and Biosphere Programme
Dept.	Department
DMR	Department of Mineral Resources
DPME	Department of Planning, Monitoring and Evaluation
DRDLR	Department of Rural Development and Land Reform
DSD	Department of Social Development
DST	Department of Science and Technology
DWA	Department of Water Affairs
EPWP	Expanded Public Works Programmes (i.e. working for/on programmes)
ESDN	European Sustainable Development Network
GHG	Green House Gases
GIS	Geographic Information System
ICC	International Coordinating Council (of the UNESCO Biosphere Reserve)
IKS	Indigenous Knowledge Systems
IPCC	Intergovernmental Panel on Climate Change
IUCN	International Union for Conservation of Nature (The World Conservation Union)
MAP	Madrid Action Plan for Biosphere Reserves (2008-2013)
M&E	Monitoring and Evaluation
MINMEC	A standing intergovernmental body consisting of the Minister of Environmental Affairs, members of the provincial Executive Councils (MECs) responsible for environmental management functions, and SALGA.
MINTECH	A standing intergovernmental body that gives technical input to MINMEC. MINTECH consists of the Director-General of the DEA, the heads of the provincial departments responsible for environmental management functions, and SALGA.
MoU	Memorandum of understanding
NBSAP	National Biodiversity Strategy and Action Plan
NCCR	National Climate Change Response (SA)
NDP	National Development Plan

NFSD	National Framework for Sustainable Development
NGP	New Growth Path
NP(s)	National Park(s)
NPAES	National Protected Area Expansion Strategy
NSSD	National Strategy for Sustainable Development and Action Plan 1
PAES(s)	Protected Area Expansion Strategy(-ies) (as per province)
RSA	Republic of South Africa
SA	South Africa(n)
SALGA	South African Local Government Association
SD	Sustainable Development
SDG(s)	Sustainable Development Goal(s)
SPLUMA	Spatial Planning and Land Use Management Act (Act 6 of 2013)
ToR	Terms of Reference
UN	United Nations
UNCCD	United Nations Convention to Combat Desertification
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
WG1	Working Group 1: Main focus is on biodiversity and conservation
WG6	Working Group 6: Main focus is on addressing job creation in the environmental sector
WNBR	World Network of Biosphere Reserves

ACKNOWLEDGEMENTS AND METHODOLOGY

This South African Strategy for the Biosphere Reserve Programme (2016-2020) (the Strategy) has been developed through an extensive consultative, participatory and collaborative process with key Biosphere Reserve Programme role-players and stakeholders in South Africa. The Department of Environmental Affairs' Directorate: Protected Areas Governance, as lead agency for the Biosphere Reserve Programme in South Africa, has been instrumental in the initiative for the development of this Strategy and in guiding and coordinating the process.

First, a situational analysis of the current state of management of the Biosphere Reserve Programme in South Africa was compiled based on numerous in-depth interviews with representatives from the Biosphere Reserves/Regions (BRs)¹, the provincial agencies responsible for the Biosphere Reserve Programme, and the Department of Environmental Affairs' Directorate: Protected Areas Governance. Their valuable insights and viewpoints, together with the review of key Biosphere Reserve documents, resulted in a draft Situational Analysis report. The main findings covered in this draft report were shared and discussed at the 9th National Biosphere Reserve Committee meeting, March 2015 in White River. The draft report, together with further comments received, provided the basis for the Situational Analysis of the Current State of Management of the Biosphere Reserve Programme in South Africa, which was undertaken to inform the development of the Strategy (Emross Consulting, 2015).

Key challenges identified during the situational analysis and respective proposed approaches were presented and discussed during a well-attended two-day consultative Strategy Workshop hosted by the South African (SA) National Biosphere Reserve Committee in May 2015 at the DEA's offices in Pretoria. The outcome of this workshop was a draft overall framework for the Strategy for the Biosphere Reserve Programme, which was accepted and on which basis the Strategy was drafted for review and commenting. The constructive feedback received was addressed in this final strategy document which subsequently guided the drafting of a separate implementation plan and related monitoring and evaluation framework. The valuable comments received on these documents were addressed in the Implementation Plan and Monitoring and Evaluation Framework for the South African Biosphere Reserve Programme Strategy (2016-2020).

The input, time, comments and commitment of the different spheres of government, the non-profit organisations managing the BRs, and other stakeholders involved with the Biosphere Reserve Programme across various levels, to the development of the Strategy have been vital, instrumental and much appreciated. Thanks to their input, the focus of the Strategy ranges from the local up to provincial, national and international levels, recognising the different roles each must play and the responsibilities each must undertake in support of ensuring that the whole will become more than the sum of its parts.

¹ Both terms, Biosphere Reserve and Biosphere Region, are used in South Africa and are abbreviated as BR. Where the term Biosphere Reserve is used in this document, it is to be understood to also include Biosphere Region.



South Africa initiated its participation in the UNESCO Biosphere Reserve Programme in 1995 during the Second World Congress of Biosphere Reserves in Spain, and entered into a Memorandum of Understanding with UNESCO in April 1998. The same year South Africa received UNESCO's approval for the designation of its first Biosphere Reserve (Kogelberg Biosphere Reserve). Since then, another seven South African Biosphere Reserves have been designated by UNESCO. These Biosphere Reserves encompass important conservation areas, however, the potential of the Biosphere Reserve Programme to reconcile development and conservation priorities sustainably has not yet been met. To date the practical implementation has been largely reliant on committed volunteers, with the support of provincial conservation and planning departments.

Whilst achievements in the implementation of the Biosphere Reserve Programme have been made over the years, the absence of national guiding tools to effectively manage Biosphere Reserves remained a challenge. In recognising this the Department of Environmental Affairs commissioned the development of a first strategy for the Biosphere Reserve Programme in South Africa. It has been developed in a participatory and consultative way reflecting the rich insights and experience of key Biosphere Reserve role-players, many of whom have 20 years' experience in contributing to and evolving the Biosphere Reserve Programme in South Africa.

This Strategy focuses on numerous key aspects, some of which are unique to the South African context and considered critical to lifting the Biosphere Reserve Programme to its next level of development and achievements. It is intended not only to improve the sustainability and functioning of the BRs, but also to assist them in developing pathways towards meeting their potential to aid equitable and sustainable development in South Africa. BRs therefore contribute to the government's national priorities and international commitments, including, but not limited to, the recently agreed upon Sustainable Development Goals.

A handwritten signature in black ink, appearing to read 'BEE Molewa'.

Ms B E E Molewa (MP)

Minister of Environmental Affairs

EXECUTIVE SUMMARY

The Biosphere Reserve Programme is a UNESCO Programme that attempts to demonstrate the reconciliation of environmental protection with sustainable development. It has human developmental needs at the forefront and balances these with environmental infrastructure, biodiversity, heritage and indigenous knowledge through learning, science and other functions.

The Biosphere Reserve Programme is well positioned to contribute significantly to many governmental strategies and programmes at various levels and to varying extents, and is in line with legislation and international agreements. However, despite these overlaps, the Biosphere Reserve Programme is poorly recognised by governmental departments in South Africa. The Biosphere Reserve Programme should be seen as an existing structure that could demonstrate and pioneer the implementation of these strategies, agreements and programmes.

The Biosphere Reserve Programme represents sound expertise and passion, yet the South African Programme has not yet met its potential for a number of reasons. The constraints include funding, status and recognition across all spheres of government. Thus, the development of a South African Biosphere Reserve strategy was commissioned.

This Strategy is based on a situational analysis which investigated, in particular, the constraints of the Biosphere Reserve Programme in South Africa and proposes approaches which will address them. The Strategy concerns the Biosphere Reserve Programme's overall strategic direction, cross-cutting issues and ensuring a supportive enabling environment for the Biosphere Reserve Programme. It is envisaged that the implementation of this Strategy over the next five years will allow the South African Biosphere Reserve Programme to begin to rise to its potential. This Strategy is therefore supported by a separate Implementation Plan, a related Monitoring and Evaluation Framework and strengthened nomination criteria for new BRs.

This Strategy is aligned with the recently adopted UNESCO Biosphere Reserve Strategy (2015-2025). As this is the first Strategy for the Biosphere Reserve Programme in South Africa, the introduction provides a comprehensive background to and contextualisation of the Biosphere Reserve Programme in South Africa. Alignment and potential links with current national and international conventions, legislation, policies and programmes are provided.

The subsequent section introduces the Vision, Mission and Goal, followed by the introduction of the three Strategic Objectives, including expected results. The successive sections address cross-cutting issues and creating an enabling environment - aspects relevant to the achievement of all three Strategic Objectives - each with the respective expected results. Also included is a framework for the nomination of new Biosphere Reserves.

1. INTRODUCTION AND BACKGROUND

To set the stage for this Strategy, this section provides an international and national context to the Biosphere Reserve Programme in South Africa. The global programme, of which the South African Biosphere Reserve Programme is a part, offers overall strategic direction and opportunities of learning and sharing, which are critical requirements in order to be able to address the challenges of integrating sustainable socio-economic development, the sustainable use of natural resources, and the conservation of biodiversity. Equally important is an awareness of the South African global commitments and national priorities to which the Biosphere Reserve Programme practically contributes, so as to understand its relevance for the country. Finally, this Strategy builds on the work already undertaken within the Biosphere Reserve Programme thus far, for which reason a brief overview is provided regarding the establishment and development of the Programme in South Africa.

1.1 UNESCO Biosphere Reserve Programme

The South African Biosphere Reserve Programme operates under the umbrella of the global UNESCO Biosphere Reserve Programme². This section therefore provides a brief history of the UNESCO Biosphere Reserve Programme and its entities (illustrated in Figure 1, which also includes entities described under section 1.3 regarding national and provincial components) and briefly explains the context of critical Biosphere Reserve Programme strategies and other documents.

The Biosphere Conference held in 1968 in Paris, France, discussed early ideas about how best to reconcile the use and conservation of natural resources and the concept of Biosphere Reserves. Following this conference, the Biosphere Reserve Programme was formally launched by the United Nations Educational, Scientific and Cultural Organization (UNESCO) in 1971. It aims to demonstrate the combination of conservation and sustainable development supported by a number of logistical approaches. National governments can sign on as members to the Biosphere Reserve Programme and determine which entity will carry the responsibility of line managing the programme within its territories.

In practice, the Biosphere Reserve Programme promotes the establishment of Biosphere Reserves (BRs)³ throughout all the biogeographical areas of the World and, hence, across terrestrial, freshwater, coastal and marine ecosystems. The concept of BRs was formally initiated by the *Task Force on Criteria and Guidelines for the Choice and Establishment of Biosphere Reserves* of UNESCO's Biosphere Reserve in 1974 (UNESCO, 1996). The overall approach is about the integration of conservation (of landscapes, ecosystems and their services, and species and genetic variation), sustainable development (fostering socio-economic development which is ecologically and culturally sustainable), and logistical support (demonstration projects, research, monitoring, education and training related to local, national and global issues of conservation and sustainable development). These three functions are to be implemented within a defined landscape which considers land delimitation and proposed zoning⁴ along a progression from preservation to sustainable resource use in the form of, respectively, an inner core area, buffer zones and an outer transition zone. This defined landscape remains an important BR basic design concept. The above three functions support the notion of sustainable development as it is widely used today (Pool-Stanvliet, 2013). Achieving and balancing these three functions requires an integrated approach. The Biosphere Reserve Programme therefore promotes interdisciplinary approaches, combining natural and social sciences, economics and education, to improve human livelihoods and safeguard natural ecosystems and their services.

2

3 As the names Biosphere Reserve and Biosphere Region (in case of Kruger to Canyons) are both used in South Africa the abbreviation BR(s) is used in the text to allow for both in line with the decision regarding the use of names at the ICC in June 2015 (UNESCO MAB ICC, 2015). Where the term Biosphere Reserve is used in this document, it is to be understood to also include Biosphere Region.

4 The term zone is used throughout this document as it is a critical term used in the Seville Strategy, Madrid Action Plan, The Statutory Framework of the WNBR, UNESCO Biosphere Reserve Strategy and UNESCO Biosphere Reserve nomination process and it is used in this context.

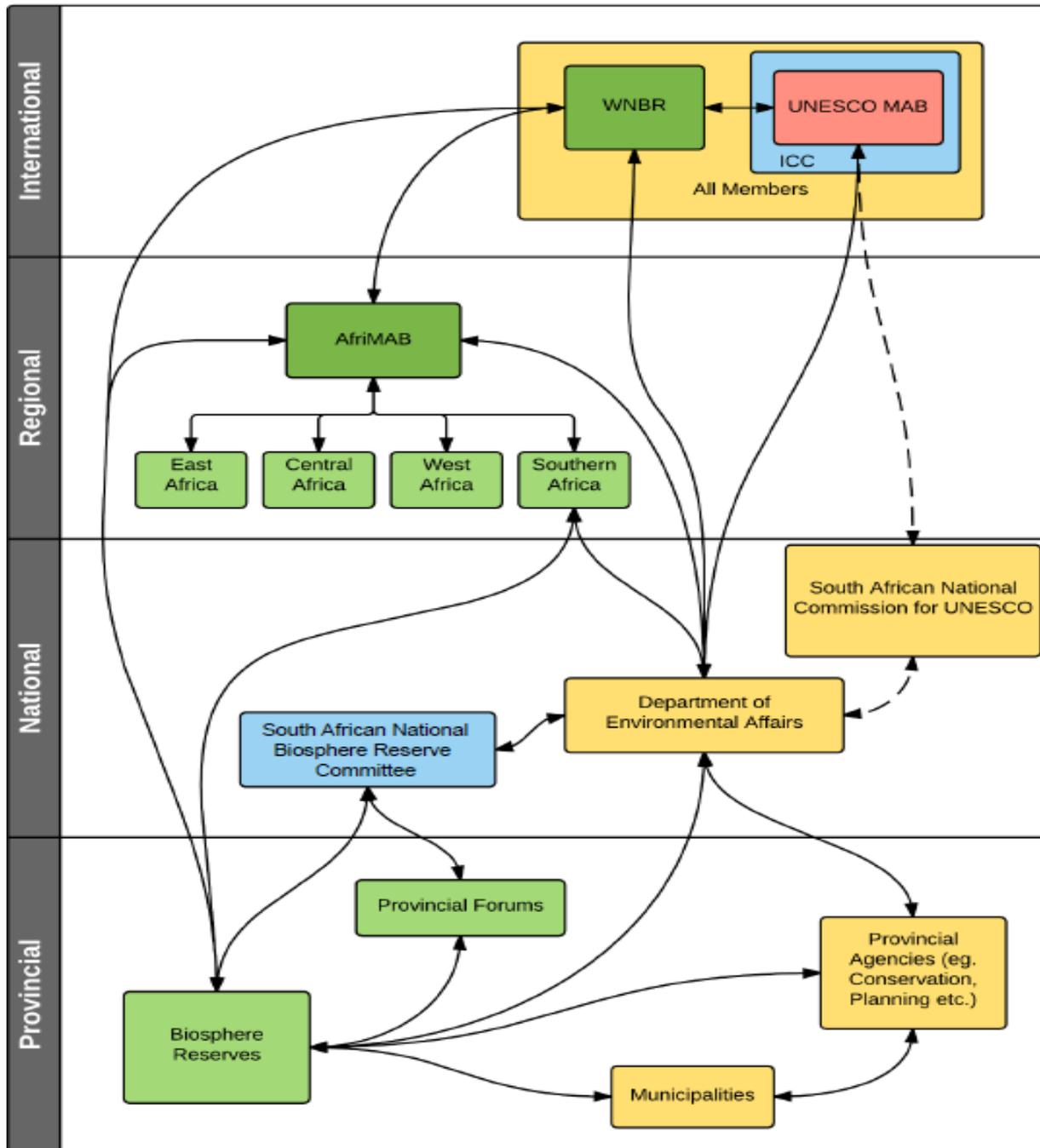


Figure 1. The Biosphere Reserve Programme working structure, where green represents Biosphere Reserves; yellow, government entities; blue, governance structures; and red, UNESCO Biosphere Reserve Programme

Biosphere Reserves are designated by UNESCO and form part of the World Network of Biosphere Reserves (WNBR), which was launched in 1976 and is organised into a support structure of geographical (regional and sub-regional) and ecosystem and theme-specific networks (UNESCO, 2015a). The relevant regional and sub-regional networks for South Africa are the African Biosphere Reserves Network (AfriMAB) and the Southern African Biosphere Reserves Network respectively (Fig. 1). At present, the WNBR consists of 651 sites in 120 countries, including 15 transboundary sites (UNESCO, 2015b).

The main Biosphere Reserve governing body, the International Coordinating Council of the Biosphere Programme, usually referred to as the [MAB Council](#) or ICC, consists of 34 Member States elected by UNESCO's biennial General Conference (Fig. 1). At its meetings, the Council elects a chairman and five vice-chairmen, one of whom functions as a rapporteur, who form the [MAB Bureau](#) (UNESCO, 2015c).

The overall development and direction of UNESCO's Biosphere Reserve Programme are guided by strategies and actions plans (UNESCO, 2015d) which have relevance for the Biosphere Reserve Programme in South Africa. These strategies and action plans are often developed and/or adopted at World Congresses of Biosphere Reserves (as they

are currently called) and are the result, particularly, of ongoing changes in the context in which BRs operate and the related understanding about and development of the most appropriate concepts and approaches⁵:

- The First International Biosphere Reserve Congress, in Minsk, Belarus, in 1983, initiated the development of an *Action Plan for Biosphere Reserves* in 1984.
- The Second World Congress, an International Conference for Biosphere Reserves, in Seville, Spain, in March 1995, resulted in the *Seville Strategy for Biosphere Reserves* and the *Statutory Framework of the WNBR* (UNESCO, 1996). This was based on an evaluation of the *Action Plan for Biosphere Reserves* and helped to identify what emphasis should be given to the three Biosphere Reserve functions of biodiversity conservation, sustainable socio-economic development, and related logistical support required for moving forward. The conference identified ten key directions as the foundation of the Seville Strategy, which also includes goals and objectives along the three Biosphere Reserve functions, how to better integrate those and how to strengthen the WNBR (UNESCO, 1996). The *Statutory Framework of the WNBR* "provides for the designation, support and promotion of Biosphere Reserves, while taking account of the diversity of national and local situations" and calls, in article 9, for the status of each BR to be reviewed every ten years, which review should report on key items (UNESCO Biosphere Reserve, 2002).
- The Seville +5 International Meeting of Experts, in Pamplona, Spain, in November 2000, initiated and generated more attention for contributions to socio-economic development, and its recommendations resulted in *Guiding Principles for Projects on Biosphere Reserves* in support of planning and designing projects for BRs (adopted at the 17th session of the [MAB ICC](#) in March 2002).
- The Third World Congress of Biosphere Reserves, in Madrid, Spain, in February 2008, adopted the *Madrid Action Plan for Biosphere Reserves* (MAP; UNESCO Biosphere Reserve, 2008a). It builds on the Seville Strategy with the aim to raise the BRs to be the principle internationally-designated areas dedicated to sustainable development in the 21st century. It provided concrete actions for the 2008-2013 time frame for critical Biosphere Reserve Programme entities, from Biosphere Reserves up to the MAB Bureau and Secretariat, across four main clusters, i.e. (i) cooperation, management and communication, (ii) zonation – linking functions to space, (iii) science and capacity enhancement, and (iv) partnerships.
- The International Conference *For life, for the future: Biosphere Reserves and Climate Change* was held in June 2011 in Dresden, Germany, resulting in the *Dresden Declaration on Biosphere Reserves and Climate Change* (UNESCO, 2011), which was subsequently endorsed by the 23rd session of the MAB ICC and the 36th session of the UNESCO General Conference, both in 2011. The Declaration recognises BRs as effective instruments for mitigating climate change and to serve as models for adaptation to the impacts of this change, to be applied particularly in the domains of sustainable land use, green economies, safeguarding ecosystem services, energy efficiency and the use of renewable energy. It calls on the States represented in the Biosphere Reserve Programme to give greater weight to BRs in their strategies on climate change mitigation and adaptation, and to transfer approaches developed in BRs to other regions. It also calls for the provision of adequate financial, organisational and staff capacities to implement the recommendations contained in the Declaration.
- The Fourth World Congress of Biosphere Reserves is planned to be held in Lima, Peru, in March 2016, during which the LIMA Action Plan for 2016 – 2025 will be proposed for adoption.

At its most recent meeting in June 2015, the [MAB ICC](#) adopted a new global UNESCO Biosphere Reserve Strategy (2015-2025), to be presented to the UNESCO General Council (UNESCO Biosphere Reserve, 2015). The new global UNESCO Biosphere Reserve Strategy reflects the main findings of the evaluation of the MAP and highlights five areas of improvement focusing on the WNBR (UNESCO, 2014). Following the adoption of this Strategy, a new Action Plan is currently being developed to guide the Biosphere Reserve Programme and the WNBR, to be presented to the Fourth World Congress of Biosphere Reserves and to be adopted at the 28th [MAB ICC](#) session (Lima, Peru, 2016; UNESCO, 2015d).

Other Biosphere Reserves documents of particular relevance to Africa include:

- The *Charter of African Biosphere Reserves Network* (UNESCO Biosphere Reserve, 2008b), which was adopted by the members of the network in attendance at the Third World Congress of Biosphere Reserves, in Madrid, Spain, 2008. This Charter is supported by *AfriMAB's Network Statutes* (UNESCO Biosphere Reserve, 2010), which provides rules regarding the functioning of the network, and five-year strategic action plans.
- *Management Manual for UNESCO Biosphere Reserves in Africa: A practical guide for managers*. The development of this document was supported and coordinated by the German Commission for UNESCO. It focuses in particular on how to engage with local communities (participation and co-management) and how to use knowledge-based approaches such as traditional knowledge, scientific research, monitoring, and education (German Commission for UNESCO, 2015).
- *AfriMAB: Biosphere Reserves in Sub-Saharan Africa: Showcasing Sustainable Development* (AfriMAB, 2013). This

⁵ For more information see UNESCO Biosphere Reserve, 2004; Pool-Stanvliet R., 2013; UNESCO 2015b; and, UNESCO MAB, 2015.

publication, prepared by the UNESCO Secretariat and the Biosphere Reserve National Committee of South Africa, shares extensive information from 21 case studies and related research from BRs across sub-Saharan Africa, as guidance for practitioners and policy-makers. It was compiled as one of the efforts towards addressing the MAP's *capacity enhancement* component for Africa, with the aim to empower Biosphere Reserve National Committees and BRs' managers in Africa.

1.2 International Commitments and National Priorities

From the description of the UNESCO Biosphere Reserve Programme in section 1.1 above, it is clear that the Biosphere Reserve Programme not only is guided by, but also contributes to the achievement and implementation of South Africa's commitments, priorities and strategies in the fields of conservation, sustainable use of natural resources, and sustainable socio-economic development and their integration. The international commitments and national priorities that have linkages and overlap with the Biosphere Reserve Programme in South Africa are discussed and summarised in this section, with further detail provided in the appendices.

1.2.1 International context

Ratifying international conventions is the highest level of commitment a nation can undertake regarding issues of global concern. Ratification becomes entrenched in national legislation and informs national priorities and programmes (refer to section 1.2.2). South Africa has made numerous commitments at an international level, in the form of being party or signatory to conventions, Multilateral Environmental Agreements and similar programmes. The agreements listed below (Table 1) have been considered in the context of their relevance to the Biosphere Reserve Programme, in particular the three main functions of BRs: biodiversity conservation (and associated ecosystem services), sustainable development, and logistics (research and education). These key international conventions/programmes relate specifically to sustainable development and conservation of biodiversity and, while not the only applicable conventions, are currently at the forefront in the international arena. Table 1 provides a summary of the relevance and level of compatibility between Biosphere Reserve's three core functions and each international agreement. The degree of overlap and focus with regard to each of the three Biosphere Reserve functions of a BR is grouped into 4 levels, ranging from significant overlap to no overlap or applicability. Additional detail on these conventions is provided in Appendix 1.

Table 1: An overview of the international conventions reviewed relevant to the Biosphere Reserve Programme and their relevance to/overlap with the three main functions of Biosphere Reserves.

Key:	Level 1	Level 2	Level 3	Level 4
	Significant overlap and main focus	Some overlap but not the main focus	Takes cognisance of the issues. However no or limited attention given	No overlap/Not significantly applicable
Convention: Organisation and date RSA signed/ratified (where applicable). (Reference to document)	Overlap with core functions of Biosphere Reserves			
	Biodiversity Conservation	Sustainable Development (SD)	Logistics: research and education (in context of Biosphere Reserve)	
Socio-economic related				
United Nations (UN): Rio+20 Conference Outcomes. (ESDN, 2012)	Importance of conservation of ecosystems/natural resources and ecosystem services in the context of SD is well noted, but it is not a key focus. Impact of climate change noted.	Main focus is on sustainable development in the context of two themes: green economy and an institutional framework for SD. Notes the link between green economies and poverty alleviation.	Education mentioned, but limited in Biosphere Reserve context. Research important in context of sustainable development.	

Convention: Organisation and date RSA signed/ratified (where applicable). (Reference to document)	Overlap with core functions of Biosphere Reserves		
	Biodiversity Conservation	Sustainable Development (SD)	Logistics: research and education (in context of Biosphere Reserve)
UN: Sustainable Development Goals (SDGs). (UN, 2015)	Although not the main focus, there is significant relevance. Reference to Convention on Biological Diversity (CBD). Two SDGs (14 & 15) in particular focus on conservation of ecosystems. SDG 6 aims to manage water sustainability, and SDG 13, to combat climate change.	Main focus of the Development Agenda. The aim is to end poverty and hunger, ensure everyone has equitable education, and promote sustainable energy, industrialisation, and sustainable human settlements. SDG 3 (Healthy lives for all) touches on the need for family planning.	Education a significant component but not in context of Biosphere Reserve Programme. But, research considered e.g. in relation to agriculture, marine ecosystems, and renewable energy.
Biodiversity/Conservation related			
UN: Convention on Biological Diversity (CBD) and the Aichi Targets - 1993/1995 (UN, 1992; CBD, 2011)	The main purpose of the Convention is conservation of biodiversity. The value of ecosystem services is recognised and is the core purpose for conservation of biodiversity. Aichi Targets: 19 out of 20 refer to biodiversity conservation.	Equal attention given to the sustainable use of natural resources, both in the context of meeting future needs and minimising impact, and in establishing international relations etc. Aichi Targets: 8 out of 20 refer to sustainable use.	Although not the main focus of the CBD, significant attention given to education, awareness, research and training, relating to conservation, especially in the Aichi Targets.
UNESCO: World Heritage Convention – 1997 (UNESCO, 1972)	Focus on establishing international sites of exceptional natural and cultural heritage. Conservation of nature and ecological processes a priority (alongside the importance of cultural heritage).	No mention of sustainable development or even 'sustainable'.	Nothing related.
United Nations Framework Convention on Climate Change (UNFCCC) – 1993/1997 (UNFCCC, 2006)	Focus on addressing climate change. Committed to conservation. Acknowledges links between biodiversity, desertification and climate change, and the vulnerabilities of biodiversity (and water availability) due to climate change.	Not the main objective but well considered in a variety of places in order to adapt and mitigate climate change. Includes energy conservation but no mention of green economies.	Education/capacity building and research are key tools, especially in relation to achieving sustainable development and towards adapting and mitigating climate change.
United Nations Convention to Combat Desertification (UNCCD) -1997. (UN, 1994)	Conservation of biodiversity is a part of national programmes to combat desertification. CBD is recognised. Acknowledges link between loss of biodiversity and desertification.	Recognises impact of unsustainable development in a variety of land use practices. Promotes sustainable development practices to address desertification and drought.	Research and education are key components in addressing desertification.
UNESCO: Ramsar Convention on Wetlands - 1975. (UNESCO, 1994)	Conservation of wetland sites, associated biodiversity and wetland functions is main focus.	Wetlands can be a valuable tool in supporting sustainable development (artificial and natural wetland functioning; and provide important ecosystem services that support SD). The Convention makes several references to the 'wise use' of water fowl and wetland systems.	Brief mention of research and training in context of wetlands.

Convention: Organisation and date RSA signed/ratified (where applicable). (Reference to document)	Overlap with core functions of Biosphere Reserves		
	Biodiversity Conservation	Sustainable Development (SD)	Logistics: research and education (in context of Biosphere Reserve)
Convention on International Trade in Endangered Species (CITES) – 1975. (CITES, 1973)	Conservation of endangered species, or parts thereof, thus biodiversity, that are subjected to trade.	No mention	No mention
UNEP: Convention on Migratory Species (CMS). (CMS, 1979)	Conservation of migratory species: terrestrial, marine and avian (thus specific component of biodiversity).	Not evident	Research in support of improving conservation of the species.
African Union (AU): African Convention on the Conservation of Nature and Natural Resources - 2012. (IUCN, 2004)	Main focus is to conserve Africa's nature and natural resources.	Committed to promoting and integrating sustainable development with conservation. No reference to green economies.	Identifies education and research as an important component of conservation management.

As illustrated in Table 1, it is obvious that these conventions, both socio-economic and biodiversity conservation related, are relevant to the Biosphere Reserve Programme and vice versa. In considering correlation between the above conventions and the three Biosphere Reserve core functions, over 50% are in the highest level of overlap (level 1), demonstrating significant overlap and main focus; over 70% have some overlap (levels 1 and 2); 20% take at least cognisance of the key concepts; while 20% show no overlap at all. Furthermore, across the core function of biodiversity conservation there is 100% overlap (i.e. all conventions fall within levels 1 and 2). For the sustainable development function, almost 70% demonstrate overlap at levels 1 and 2. Some of these international commitments are fully compatible with the concept of the MAB Programme and its functions (rated levels 1 or 2 across all three functions), i.e. Rio+20 Outcomes and SDGs (both mainly socio-economic related); and UNFCCC, UNCCD and the African Convention on the Conservation of Nature and Natural Resources (relating to biodiversity/conservation). The CBD significantly overlaps with all three Biosphere Reserve Programme functions (i.e. level 1 for each of the functions). In recent years, the UNFCCC has become an important constituent of the UNESCO and National Biosphere Reserve Programmes, as it is ingrained in the strategic objectives of the Biosphere Reserve Programme. Other conventions identify sites which are key components and attractions in individual BRs, i.e. World Heritage sites and Ramsar designated wetlands, while confronting and addressing the specific focus and related issues of the remaining conventions (CITES and CMS) are almost daily activities within all the BRs.

The question is how the Biosphere Reserve Programme and BRs can improve and assist South Africa with its international commitments under many of these conventions. The three CBD objectives, aspects of the SDGs, and the identification of World Heritage, transboundary and Ramsar sites are already key elements in the nomination process for new BRs. However, there are greater opportunities for BRs to demonstrate the concepts and approaches of international convention requirements further, particularly regarding aspects of sustainable socio-economic development. The provision of proper support (financial and other) is part of these international commitments that South Africa has made. In a recent Overseas Development Institute publication, Nicolai, Hoy, Berliner and Aedy (2015) stressed that unless nations take early action to raise national ambitions, plan implementation and strengthen the focus on equity, it is predicted the SDGs will not be met by 2030. The compatibility between the SDGs and the Biosphere Reserve Programme has been highlighted in Table 1. This emphasises the valuable role that the Biosphere Reserve Programme can play in contributing to meeting the SDGs in South Africa - if the warning is heeded, and with the necessary collaboration. The Biosphere Reserve Programme is an excellent vehicle for South Africa to contribute to and demonstrate its commitment to all these international agreements.

1.2.2 National priorities

The government of South Africa has developed numerous national strategies and programmes to guide the country's overall sustainable development and to set priorities. The foci of the strategies and programmes most relevant to the Biosphere Reserve Programme are on socio-economic development, the use of natural resources, and the conservation of biodiversity priorities. While the need for sustainable socio-economic development, the need for sustainable use of natural resources, the critical role of ecosystem services and the need for conservation are being recognised as being interdependent in terms of achieving longer-term solutions, the practical application of such understanding is often very challenging. However, the Biosphere Reserve Programme, through its BRs, provides a very good and practical implementation mechanism for testing and demonstrating integrated approaches towards the achievement of

sustainable socio-economic development, the sustainable and equitable use of natural resources and the conservation of biodiversity and related objectives and priorities. Therefore, this section highlights the possible and existing roles and relevance of the Biosphere Reserve Programme in and to the most relevant national strategies, programmes and plans, especially those that pertain to biodiversity conservation and sustainable socio-economic development. These are summarised in Table 2 below, where the degree of overlap between the national priorities and the Biosphere Reserve Programme is ranged from level 1, with significant overlap and focus, to level 4, where there is none.

Table 2: An overview of the national programmes and strategies reviewed of relevance to the Biosphere Reserve Programme and their overlap with the three main functions of Biosphere Reserves.

Key:	Level 1	Level 2	Level 3	Level 4
	Significant overlap and main focus	Some overlap but not the main focus	Takes cognisance of it / the issues but no/limited attention given	No overlap/Not significantly applicable
Strategy/Programme [Incl. co-ordinating Dept. and relevant period. (Reference to document)]	Overlap with core functions of a Biosphere Reserve			Logistics: research and education (in context of Biosphere Reserve)
	Biodiversity Conservation	Sustainable Development		
Socio-economic related strategies/programmes (primary focus)				
National Planning Commission (NPC): National Development Plan 2030: Our future - make it work (NPC, 2011)	Cognisant of the environmental challenges the RSA faces: e.g. climate change and loss of biodiversity. Health of the planet and natural resources are assets and require protection for wellbeing of future human generations. Sets targets for the amount of land and oceans under protection.	Job creation including green economies ¹ , focusing on a low-carbon economy (specifically renewable energy). Also: developing the RSA as an international tourist destination with emphasis on biological and cultural diversity.		Not emphasised.
DEA: National Strategy for Sustainable Development and Action Plan 1: 2011-2014 (DEA, 2011)	Refers to conserving ecological systems to achieve vision. Two out of five strategic priorities relevant: Priority 2 (Sustaining ecosystems); and Priority 5: (Response to climate change).	The RSA aims to eradicate poverty and severe inequalities. Two out of 5 strategic priorities overlap with the intentions of the Biosphere Reserve Programme: Priority 3 (green economy) and Priority 4 (sustainable communities). Biosphere Reserves not mentioned.		Research features as a valuable tool in sustainable development and innovation. Education in context of green economies.
RSA Government: Strategic Government Outcomes 2010 (DPME, 2010)	Outcome 10: Protection and enhancement of environmental assets and natural resources including water and biodiversity.	Reference to sustainability but not in the context of development. Outcome 8.		No reference.
RSA Government: Framework for the New Economic Growth Path 2010 – (RSA Gov., 2010a)	No mention of biodiversity, ecosystems or conservation.	Job creation is sole focus, including green economies (i.e. renewable energy, energy efficiency; and recycling etc.). Other priority areas with overlap include agriculture and tourism (aim for private-public partnerships).		Education in green economies.

Strategy/Programme [Incl. co-ordinating Dept. and relevant period. (Reference to document)]	Overlap with core functions of a Biosphere Reserve		
	Biodiversity Conservation	Sustainable Development	Logistics: research and education (in context of Biosphere Reserve)
DEA: MINTECH Working Group 6 - ToR 2015 (DEA, 2015b)	Concern for biodiversity and natural resources but not main focus.	Job creation in the environmental sector through ecologically sustainable development. Includes the green economy focus areas of the NGP's Green Economy Accord.	Education for Expanded Public Works Programmes (EPWP), and research in environmental management issues. Very limited reference.
Dept. of Rural Development and Land Reform (DRDLR) Strategic Plan 2015-2020 (DRDLR, 2015)	No mention of biodiversity, ecosystems or conservation.	Vision to achieve vibrant, sustainable and equitable rural communities. Strives for sustainable use of land especially for agriculture. Significant overlap but Biosphere Reserve not considered.	No reference.
Dept. of Social Development (DSD) Strategic Plan: 2010-2015 (DSD, 2010)	The plan makes no reference to biodiversity conservation, ecosystem services, or green economies.	Sustainable development is referred to in the mission statement, but for the most part the use of the word 'sustainable' has limited to no relevance in the context as used under the Biosphere Reserve Programme.	No reference.
Dept. of Agriculture, Forestry and Fisheries (DAFF) Strategic Plan: 2013/14-201/18 (DAFF, 2013)	Cognisant of biodiversity (indigenous and cultivated), sustained management of natural resources, and threats of climate change and environmental degradation. Notes value of healthy marine ecosystems' contribution to fisheries.	Focus on food security and job creation. Aims to achieve sustainable livelihoods and use of natural resources in all three sectors: agriculture, forestry and fisheries. Brief mention of Green Economy. No mention of Biosphere Reserve, but operates in same realms.	Research in context of improving sustainable development in fishery sector.
Dept. of Arts and Culture (DAC) Strategic Plan 2011 – 2016 (DAC, 2010)	No reference to biodiversity, ecosystems, ecosystem services, or natural heritage. Indigenous knowledge systems (IKS) are considered but with no elaboration.	Sustainability mentioned regarding job creation and with reference to the Strategic Government Outcomes, but nothing in the context of Biosphere Reserve Programme.	Nothing in context of Biosphere Reserve.
Dept. of Mineral Resources (DMR) Strategic Plan 2011-2014 (DMR, 2010)	No reference to biodiversity, ecosystem/ecosystem services, nature, or conservation.	Sustainable development is mentioned in the context of jobs and growth. One objective promoting sustainable resource use and improvement in management of the mine environment including rehabilitation – but limited.	Nothing in context of Biosphere Reserve.
Environmental, biodiversity and conservation related strategies/programmes (primary focus)			
Dept. of Environmental Affairs (DEA) Strategic Plans: 2014 – 2019 (DEA, 2014), and 2015/16 – 2019/20 (DEA, 2015c)	Emphasis is on biodiversity conservation and living in harmony with nature. However, the Biosphere Reserve Programme is not mentioned.	Green economies are noted as important towards achieving sustainable development, especially the EPWP, e.g. Working for Water and Working on Fire.	Environmental education a main focus, as is research in the context of achieving integrated management of ecosystems underpinning human wellbeing.

Strategy/Programme [Incl. co-ordinating Dept. and relevant period. (Reference to document)]	Overlap with core functions of a Biosphere Reserve		
	Biodiversity Conservation	Sustainable Development	Logistics: research and education (in context of Biosphere Reserve)
Dept. of Water Affairs (DWA) Strategic Plan: 2013/14 – 2017/18 (DWA, 2013)	Focus is on conservation of water, which is a main abiotic component of ecosystems. Significant reference to catchments (and therefore implied ecosystem approach).	Attention is on sustainable use of water (not on sustainable development). But the mission is to manage the nation's water resources to ensure equitable and sustainable socio-economic development and universal access to water.	Water Research Commission (WRC) has a mandate to research water related topics. Education regarding water conservation.
DEA/SANBI: National Biodiversity Strategy and Action Plan (NBSAP): 2015-2025 (DEA, 2015a)	Biodiversity conservation and management thereof is the main purpose.	Not a main focus but is considered. BRs have the potential to be significant role-players in the implementation of NBSAP, but are not recognised as a lead, support or implementing institution.	Includes environmental education.
RSA Government: National Protected Area² Expansion Strategy 2008 (RSA Gov., 2010b)	NPAES has identified focus areas in terrestrial, freshwater and marine (coastal and offshore) ecosystems to increase the area under protection. All BRs have a core zone consisting of a protected area (not under BR management).	Not a main focus but considered in context of bioregional planning and ecotourism, etc.	Related research, e.g. evaluating pilot projects in which biodiversity stewardship agreements are used; or testing the potential to include game farm areas.
SA Government Gazette: Biodiversity Policy and Strategy for South Africa: Strategy on Buffer Zones for National Parks: Notice 106 of 2012 (DEA, 2012)	The Buffer Zones (BZs) aim to minimise negative effects of activities taking place outside the parks on the National Park (NP). The objectives are to protect the role of the NP and protect biodiversity hotspots and associated ecosystem services beyond the boundary of the NP.	Not main focus but well considered, e.g. assist neighbouring and affected communities to secure appropriate and sustainable benefits (e.g. conservation and/or green economies including ecotourism) from the NP and buffer zone area itself.	Education well considered in context of Biosphere Reserve Programme.
SA Government: National Climate Change Response (NCCR) White Paper 2011 (RSA Gov., 2011)	Especially conservation of ecosystems and ecosystem services. The main focus is on climate change adaptation and mitigation. Whilst climate change is a strategic objective within the Biosphere Reserve Programme, the NCCR does not mention the Biosphere Reserve Programme.	Flagship programmes, job creation and climate resilient development – including green economies - are key features of the White Paper.	Both education and research feature in the context of climate change.

Sixteen different strategies/programmes were reviewed for their potential and existing relevance to the Biosphere Reserve Programme and vice versa. The selection of these sixteen was guided predominantly by the recommendations of the participants of the Strategy Workshop in May 2015. With reference to Table 2 (and Appendix 2), there is clear evidence for the relevance of the Biosphere Reserve Programme in contributing to the key functions and objectives of those strategies and programmes. This concerns both the socio-economic and environmental, biodiversity, and conservation related strategies and programmes. All but one show at least cognisance of key Biosphere Reserve concepts to be followed from one of the core Biosphere Reserve functions. In considering the correlation between all the strategies/programmes and the three Biosphere Reserve core functions, 75% take cognisance, show some overlap or show significant overlap. For the socio-economic strategies and programmes, this overlap is still 60%, while for the environmental, biodiversity, and conservation related strategies and programmes it is, not surprisingly, 100%. Furthermore,

across all three core functions of Biosphere Reserve, for both main groups of strategies and programmes, almost 60% demonstrate overlap at levels 1 and 2. **Even for the sustainable development function, the strategies / programmes have a 50% overlap with the Biosphere Reserve Programme.** While the main emphasis of the socio-economic strategies is job creation, the majority of these focus on green economies, which is aligned with the Biosphere Reserve Programme objectives. Of the three Biosphere Reserve functions, the logistics function of the Biosphere Reserve Programme is the function that has the least amount of overlap with the national priorities reviewed and analysed.

In fact, of the sixteen national strategies/programmes (ten socio-economic and six environment/biodiversity) reviewed, only one (NBSAP) makes direct reference to the Biosphere Reserve Programme. Considering the substantial overlap and compatibility that these national programmes have with the Biosphere Reserve Programme (and that the Biosphere Reserve strategic objectives have similar aspirations), BRs have the opportunity to contribute more significantly in the future to the implementation of national priorities. This will require collaboration between the Biosphere Reserve Programme and other government departments to use the BRs as mechanisms to help with the implementation and the demonstration of these other departments' programmes in order to achieve their common goals. Current instruments in place to support such an approach are the MINMEC (political) and MINTECH (technical) structures (with the associated Working Groups), which have technical specialists and high level representation in the South African National Departments including the DEA. These structures meet and interact several times a year, which allows for the opportunity for effective inter-departmental collaboration. The value of these interactions should not be underestimated, especially in the context of promoting the Biosphere Reserve Programme and the role it can play in supporting and advancing national priorities and international commitments. BRs are a standing agenda item for the WG1 (the technical committee on biodiversity conservation reporting to MINTECH). BRs are in WG1 work plan priority for 2015/16 and going forward. It is thus critical to optimise these opportunities for cross-departmental collaboration and to disseminate the information, discussions and decisions down through the respective levels to ensure that no department is working in isolation and that collaboration takes place on all levels and in all spheres.

1.3 The Biosphere Reserve Programme in South Africa and its Biosphere Reserves

South Africa initiated its participation in the UNESCO Biosphere Reserve Programme in 1995 and entered into a Memorandum of Understanding (MoU) with UNESCO in 1998. The Department of Environmental Affairs (DEA, at that time the Department of Environmental Affairs and Tourism) was given the responsibility of line managing this programme. After the first designation of a Biosphere Reserve in South Africa in 1998 (Kogelberg BR), seven more were designated (Cape West Coast, 2000; Kruger to Canyons, 2001; Waterberg, 2001; Cape Winelands, 2007; Vhembe, 2009; Gouritz Cluster BR, 2015; and, Magaliesberg BR, 2015). Since the inception of the Biosphere Reserve Programme in South Africa the role of volunteers has been a crucial contributor to the effective functioning of the Biosphere Reserve Programme particularly regarding the initiation of BRs and their efficient management. The relationship between DEA and the BRs is formalised through MoU. Table 3 provides an overview of several key characteristics of each of the designated BRs in South Africa. For an overview of the key Biosphere Reserve Programme entities in South Africa and how they relate to each other see Figure 1.

Until recently, and in line with the location of these BRs, the Programme initially collaborated in particular with the Western Cape, Limpopo and Mpumalanga Provinces.⁶ Limpopo and Western Cape established their own Provincial BR Forums. Due to the recent designation of the Magaliesberg and Gouritz Cluster BRs, more significant involvement with North West, Gauteng and Eastern Cape Provinces is now expected. Several further sites are considering pursuing being nominated as a BR. Collaboration with provincial government entities concerns both the provincial conservation agencies and municipalities. To ensure coherence regarding South Africa's relationship with UNESCO, the Programme collaborates with the South African National Commission (SANC) for UNESCO, which comprises representation from all of the South African government departments with an official link to UNESCO.

The *South African Biosphere Reserve Manual* (UNESCO Biosphere Reserve, 2004) is meant as a guide regarding the value BRs may have to offer and provides insights into practical matters of BR establishment and management within South Africa.

In South Africa, the terms Biosphere Reserve and Biosphere Region (in the case of the Kruger to Canyons) both apply. In line with the decision taken at the 27th ICC in June 2015, the abbreviation BR and term Biosphere Reserve are used in this Strategy to refer to both Biosphere Reserve and Biosphere Region. The Council concluded that there was no consensus on changing the name of biosphere reserves, but that individual countries should be able to use appropriate terms at the national level (UNESCO MAB ICC, 2015).

⁶ For a more comprehensive overview, please read Pool-Stanvliet, 2013.

Table 3: An overview of the UNESCO Biosphere Reserve designated Biosphere Reserves in South Africa (adapted from Pool-Stanvliet, 2013).

Biosphere Reserves	Province(s)	Year of Official Designation	Total Size (ha)	Initiated		Management Entity
				by whom (lead organisation/s)	reasoning	
Kogelberg	Western Cape	December 1998	100 000	Residents and Western Cape Nature Conservation	Initiated as a bottom-up conservation approach to address the threat of building a dam in the Kogelberg Valley	Non-profit organisation
Cape West Coast	Western Cape	November 2000	378 000	West Coast District Municipality	Driven by spatial planning and district municipality	Non-profit organisation
Waterberg	Limpopo	March 2001	417 000	Private landowners with provincial government	Conservation (Sparsely populated area; boundary considered to be extended)	Non-profit organisation
Kruger to Canyons	Limpopo and Mpumalanga	September 2001	2 474 700	Landowners	Community-driven initiative (about 1.5 million people living on communal land in transition zone)	Non-profit organisation
Cape Winelands	Western Cape	September 2007	322 000	Cape Winelands District Municipality	Motivated through the Integrated Development Plans of relevant municipalities	Non-profit organisation
Vhembe	Limpopo	May 2009	3 070 000	Individual landowners	Conservation but recognising the needs for benefits for the local people (About 1.5 million people dispersed over reserve.)	Non-profit organisation
Gouritz Cluster	Western and Eastern Cape	June 2015	3 187 893	Cape Action for People and the Environment (CAPE) Programme with Gouritz landscape as one initiative within the programme	Uniqueness of the area as only place in the world where three recognised biodiversity hotspots (Fynbos, Succulent Karoo and Maputoland-Tongoland-Albany) converge	Non-profit organisation
Magaliesberg	North West and Gauteng	June 2015	357 870	Landowners and NW Province	Rich biodiversity, scenic beauty, rich cultural heritage and World Heritage Site.	Non-profit organisation

A National Biosphere Reserve Workshop held in Bela Bela, Limpopo Province, in 2008, resulted in a Position Paper for Biosphere Reserves (South African Biosphere Reserve Working Group, 2008). The paper states that the Biosphere Reserve

Programme could play a more prominent role in current government strategies related to poverty alleviation, environmental sustainability, social upliftment, transformation and economic development (South African Biosphere Reserve Working Group, 2008). As demonstrated in section 1.2 above, in light of the significant contributions the Biosphere Reserve Programme has to offer towards delivering on the international commitments South Africa holds and its national government priorities, this statement still very much holds true. The paper provided five main challenges to BRs in South Africa and included five recommendations and a detailed list of specific actions to implement the Madrid Action Plan in a South African context (South African Biosphere Reserve Working Group, 2008). One recommendation implemented was the establishment of a South African National Biosphere Reserve Committee in 2010. This Committee coordinates and guides the work across the Biosphere Reserve Programme and holds regular bi-annual meetings and workshops (see section 2.6.2: Governance and management structures). This Strategy aims to address most of the challenges and recommendations remaining from the 2008 position paper, as well as others identified during the situational analysis.

It is important to note the substantial differences between the designated BRs in South Africa (see Table 3 above), ranging from the reasons and drivers for their nomination, to the distinct physical and logistical complexities post nomination. Such differences include the great variations in size (100,000 ha. to over 3 million ha.) and, in consequence, the number of different jurisdictions involved; the complexity of coordination; the number of people living within the BR's boundaries (ranging from sparsely populated to over 1.5 million people); the level of engagement with government entities concerned; and their capacity and level of funding. While such differences require flexibility regarding approaches and priority setting, they also indicate the need for a more streamlined process and approach to optimise the effectiveness and impact of the overall Biosphere Reserve Programme in South Africa. Hence the need for the development of this first South African National Biosphere Reserve Strategy.

1.4 Towards a South African Biosphere Reserve Strategy

The Biosphere Reserve Programme and its BRs provide an important practical means by which South Africa can achieve a number of its critical national priorities and meet numerous international commitments, as indicated in section 1.2 above. However, due to a variety and combination of reasons, the Biosphere Reserve Programme has not yet been able to deliver to its full potential, nor is its role yet sufficiently recognised by key decision-makers across government departments and spheres, and other key stakeholders across different levels (Situational analysis, Emross Consulting, 2015).

The Department of Environmental Affairs (DEA), mandated as lead department⁷ for the Biosphere Reserve Programme in South Africa and recognising the need for further support for this Programme in South Africa, therefore commissioned the development of a first national strategy for the Biosphere Reserve Programme. The Strategy covers the 2016-2020 time frame and has been developed through a consultative process with key role-players and stakeholders in the Biosphere Reserve Programme. The aim of the Strategy is to support the positioning of BRs as the actual practical implementation components of the Biosphere Reserve Programme; as critical sites for promoting, jointly, conservation and sustainable socio-economic development, climate change mitigation and adaptation, and improving resilience; and as sites for demonstrating the importance of ecosystem services, environmental education and trans-boundary collaboration. The National Strategy for the Biosphere Reserve Programme is aligned with the UNESCO Biosphere Reserve Strategy for 2015-2025 (UNESCO Biosphere Reserve, 2015), but has been adapted to accommodate South Africa's conditions and priorities.

⁷ Currently the Biosphere Reserve Programme is administered through the Directorate Protected Areas Governance, Sub-Directorate Protected Areas International Governance Support. However, whilst not planned, internal restructuring and name changes could occur and thus the entity is referred to as DEA Biosphere Reserve in this document.

2. SOUTH AFRICAN BIOSPHERE RESERVE STRATEGY

This is the first national strategy for the Biosphere Reserve Programme in South Africa. It builds on the work undertaken under the auspices of, and the lessons learnt from the Biosphere Reserve Programme since South Africa became a signatory in 1995, i.e. 20 years ago. Its main purpose is to provide a shared strategic direction to the different components of the Biosphere Reserve Programme regarding the interlinked objectives of biodiversity conservation and sustainable socio-economic development, and, in so doing, support the achieving of national priorities and meeting of international obligations. It recognises the relevance of terrestrial, freshwater, coastal and marine ecosystems and the ecosystem services they provide in supporting the wellbeing and livelihood of the South African people. This Strategy provides the overall direction for the Biosphere Reserve Programme in South Africa for 2016 to 2020.

The Strategy is based on the premise of the potential for *the whole to be greater than the sum of its parts* in respect of the key entities of the Biosphere Reserve Programme, given the involvement of different spheres of government and multiple entities across various levels. Whilst each of the entities involved holds different mandates, the Strategy addresses the need for pro-active, integrated spatial approaches, clarity regarding the different roles and responsibilities ranging from local, up to provincial and national levels, and the need for interdisciplinary approaches.

The Strategy has been developed through a consultative process and a situational analysis review of the implementation of the Biosphere Reserve Programme up till early 2015, which resulted in a Situational Analysis Report (Emross Consulting, 2015). Key aspects were subsequently discussed and agreed upon during a Strategic Workshop with the SA National Biosphere Reserve Committee. The Strategy thus incorporates the vision, mission and goal, as agreed upon, which are supported by three strategic objectives. These are complemented by a number of critical cross-cutting issues and several aspects relevant to providing an enabling environment for implementation of the Biosphere Reserve Programme and optimisation of the Biosphere Reserves. Strategic direction for each of these cross-cutting and enabling environment aspects (across all three strategic objectives) is provided in broad terms, as well as the expected results. The Strategy further provides a framework for the nomination of new Biosphere Reserves before the conclusion.

The Strategy is supported by a comprehensive Implementation Plan, which sets priorities where needed, staged across the five-year time frame, and a related Monitoring and Evaluation Framework. The Implementation Plan breaks down the broader high level strategies into practical interventions or actions with a defined implementation agent, and indicators. The overall intent of this approach is to lift the Biosphere Reserve Programme in South Africa to its next level of development.

2.1 Vision

The vision of the South African Biosphere Reserve Programme, representing its envisioned longer-term general future, is:

South African Biosphere Reserves are recognised as special landscapes where socio-ecological land management is practised towards a more sustainable future for all.

Based on the definition agreed upon during the 2008 South African Biosphere Reserve Workshop, the vision is to inspire a sustainable future for both humans and nature. The term Biosphere Reserves covers Biosphere Reserves and Biosphere Regions, as both terms are used in South Africa. This vision is to be achieved by obtaining recognition for the critical role BRs play in offering integrated and longer-term sustainability for all (to be) engaged in the Biosphere Reserve Programme, in prioritised and clearly defined geographical areas. Socio-ecological land management provides an integrated model for resilient and sustainable natural resource management and sustainable socio-economic development towards a productive and long-term sustainable future.

2.2 Mission

The mission of the South African Biosphere Reserve Programme, representing the longer-term internal contributions to a positive future, is:

To assist South Africa to reach sustainable development by supporting model Biosphere Reserves which integrate and balance conservation, natural resource management and socio-economic development needs, while addressing climate change considerations.

The mission is to support South Africa in its ambition to achieve longer-term sustainable development, which is understood to mean ensuring the integration of ecological, economic, and social (including cultural and spiritual) sustainability. This would contribute significantly to South Africa's commitments to the Sustainable Development Goals (SDGs; to be agreed upon in September 2015). This mission is to be undertaken in prioritised model sites, i.e. the Biosphere Reserves, by balancing the interlinked longer-term sustainability needs of nature, natural resource management and people's livelihoods. As climatic changes are expected to have significant impact on all three over time, the changes anticipated should be understood and planned for to ensure a more resilient future for all.

2.3 Goal

The goal of the South African Biosphere Reserve Programme, representing an overarching objective for the five-year time frame of this Strategy, is:

To support, promote and demonstrate within Biosphere Reserves a balanced and sustainable relationship between socio-economic development, the conservation of biodiversity and the sustainable use of natural resources on which people's livelihoods depend.⁸

Over the next five years, the South African Biosphere Reserve Programme will focus on supporting, exploring, promoting and demonstrating a balanced and sustainable relationship in model BRs based on the critical inter-linkages and dependencies between (i) nature and the ecosystem services it provides (including climate), (ii) the sustainable use and management of natural resources, and (iii) the socio-economic development of the areas concerned. The latter will focus in particular on resilient and productive landscapes, and ecosystem services, taking into account the impacts of climate change.

2.4 Strategic Objectives

This National Biosphere Reserve Strategy will be guided by three main strategic objectives which are to be achieved within the 2016-2020 time frame.

1. To enhance the conservation of biodiversity and cultural heritage, maintain ecosystem services and foster the sustainable and equitable use of natural resources.
2. To explore, develop, support, and study thriving sustainable societies, economies, and human settlements respecting the web of life on which they depend.
3. To promote the understanding of the impact of environmental changes, including climate change, and develop and support mitigation and adaptation actions.

These are derived from two of the functions of Biosphere Reserves as identified in the *Statutory Framework for the WNBR* (UNESCO, 1996) and the [UNESCO Biosphere Reserve Strategy 2015-2025 \(UNESCO Biosphere Reserve, 2015\)](#), and the key global challenges of climate change as identified in the *Madrid Action Plan for Biosphere Reserves* (UNESCO Biosphere Reserve, 2008a) and the *Dresden Declaration on Biosphere Reserves and Climate Change* (UNESCO, 2011).

The UNESCO Biosphere Reserve's focus on logistical support is seen as an important *strategy and tool* in support of all three strategic objectives, instead of a *stand-alone strategic objective per se*. Also, it is partly integrated into the second strategic objective. The main South African Biosphere Reserve stakeholders and role-players concluded that, given the current levels of development of the BRs in South Africa, it would be critical to put emphasis on achieving the above-listed three strategic objectives during the next five years. The importance of the logistical support function is therefore addressed in relation to several cross-cutting issues, including the expected results for each, and will be an integral part of the related Implementation Plan and the Monitoring and Evaluation Framework. Similarly, in this first South Africa National Biosphere Reserve Strategy, the Strategic Action Areas of the UNESCO Biosphere Reserve Strategy 2015-2025 are covered in relation to the cross-cutting (see section 2.5) and enabling environment (see section 2.6) issues.

These three strategic objectives will be achieved mainly within the BRs but actually achieving them will not be possible without an appropriate enabling environment and support system. Achieving these strategic objectives will therefore require an integrated approach with collaboration from the major role-players and stakeholders across the spheres of government, government departments, and different levels, local and provincial (see sections 2.5 and 2.6). For this reason, the expected results under the three strategic objectives are often linked to the expected results included under the cross-cutting and enabling environment issues. Keeping in mind the different circumstances and levels of development among the BRs, it is also anticipated that different BRs may put different emphasis across these three strategic objectives.

Strategic Objective 1: To enhance the conservation of biodiversity and cultural heritage, maintain ecosystem services and foster the sustainable and equitable use of natural resources.

The conservation of biodiversity and cultural heritage is critically important to achieving longer-term sustainability, even more so in a world undergoing serious climatic changes. Both have their own intrinsic value, but, given competing interests for space and the use of natural resources, it is fundamental to understand the insurance and support they provide to human wellbeing through a range of ecosystem services and direct economic opportunities, such as

⁸ This is shortened slightly from the definition agreed upon during the strategic workshop. The terms "resilient and productive landscapes" and "ecosystem services (including climate change)" were taken out and explained in the text below it.

tourism. Hence, the importance for South Africa of protecting its biodiversity and cultural heritage. The conservation of biodiversity concerns the conservation of landscapes, ecosystems, species, and genetic variation. On the one hand, unsustainable and unplanned human development and consumption and production on an ever increasing scale lead to habitat loss and fragmentation. On the other, the lack of prioritisation and the associated limited provision of finances lead to the poor management of critical core areas. Collectively and cumulatively, this results in the reduction of essential ecosystem services, a reduction in the equitable use of natural resources and, ultimately, to a net loss of sustainability.

This strategic objective is to be achieved through participatory planning, applying the ecosystem approach⁹ and the provision of support to BRs by national, provincial and local government, international organisations, and the private sector. The MINMEC (political) and MINTECH (technical) structures (with the associated Working Groups) would, through their meeting and interactions several times a year, provide much needed opportunities for effective inter-departmental collaboration. The achievement of this objective will, *inter alia*, contribute to the achievement of the Aichi Biodiversity Targets of the CBD and several SDGs.

Expected Results:

1. The South African government actively supported its BRs as model landscapes in contributing to the implementation of national priorities and international commitments relating to the conservation of biodiversity and cultural heritage, and enhancement of ecosystem services.
2. The Biosphere Reserve Programme fostered the sustainable and equitable use of natural resources.

Strategic Objective 2: To explore, develop, support, and study thriving sustainable societies, economies¹⁰, and human settlements respecting the web of life on which they depend.

Sustainable socio-economic development would, in most cases, be possible within the boundaries set by nature. However, limited understanding about or disrespect for nature's limitations, assuming ecosystem services are "free" and infinite, *ad hoc* planning, and an ever increasing population have resulted in the overexploitation and unsustainable use of limited natural resources, accelerating pollution and environmental degradation - with significant impacts on human wellbeing and health. It is therefore critical to foster economic development which is ecologically and culturally sustainable. Equally critical is the provision for people to derive sustainable and equitable benefits from the natural resource base they depend on for their livelihoods. The Biosphere Reserves are uniquely placed as ideal environments in which to explore, develop, support, and study long-term sustainable socio-economic development which respects the natural systems it depends on.

This strategic outcome is to be achieved through BRs fostering the resilience of communities (see also expected result 6) and systems in support of advancing the implementation of the SDGs relating to equitable and healthy societies and settlements, whilst positively affecting the conservation of biodiversity and its sustainable use, through livelihood diversification, green businesses and social enterprises, including responsible tourism and quality economies. Government support for this approach could be mobilised by engaging the MINMEC (political) and MINTECH (technical) structures (with the associated Working Groups) – for example - as a means of ensuring effective inter-departmental collaboration.

Expected Results:

3. The BRs acted, while recognised and supported by all spheres of government, as model landscapes exploring, establishing and demonstrating sustainable economic development and innovative approaches.
4. Functional mechanisms have been established to ensure that those who facilitate the provision of ecosystem services from BRs are equitably compensated and supported by those who utilise and benefit from these ecosystem services.

Strategic Objective 3: To promote the understanding of the impact of environmental changes, including climate change, and develop and support mitigation and adaptation actions.

Our knowledge about climate change and its impact on biodiversity and people's livelihoods continues to grow and should be of major concern when addressing longer-term sustainability. Addressing climate change should be seen not as a stand-alone topic, but as an integral requirement for achieving biodiversity conservation and improving people's livelihoods. The specific value of, and opportunities for, BRs in relation to climate change were recognised in the *Madrid Action Plan for Biosphere Reserves* (UNESCO Biosphere Reserve, 2008). The *International Conference For life, for the future: Biosphere Reserves and Climate Change* was held subsequently in 2011 and resulted in the *Dresden*

⁹ The Convention on Biological Diversity (CBD) defines the ecosystem approach as "a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way".

¹⁰ Including green economies

Declaration on Biosphere Reserves and Climate Change (UNESCO, 2011). The Dresden Declaration calls on the States represented in the Biosphere Reserve Programme to give greater weight to biosphere reserves in their strategies on climate change mitigation and adaptation, and to transfer approaches developed in BRs to other regions, and to provide adequate financial, organisational and staff capacities to implement its recommendations. This has become ever more urgent given the *Fifth Assessment Report (AR5)* of the Intergovernmental Panel on Climate Change (IPCC, 2014), which states that *the warming of the climate system is unequivocal and that many of the observed changes since the 1950s have been unprecedented over decades to millennia*.

Achieving this strategic objective requires simultaneously addressing the complex interactions between climate change and other aspects of global environmental change, such as loss of biodiversity, desertification, and the degradation of land and water resources - to ensure the provision of critical ecosystem services - and addressing the threats to food production, the provision of sufficient clean water, disaster risk reduction, risks to people's health, and poverty.

Regarding poverty, it should be noted that, unchecked, climate change could draw up to 720 million people back into extreme poverty by 2030 - the date by when the SDGs are to approach the zero poverty goal. Furthermore, low emissions development is both necessary for, and compatible with, poverty eradication (Granoff, Eis, McFarland and Hoy, 2015). Again, effective inter-departmental collaboration will be critical in achieving this strategic objective, *inter alia*, and this collaboration could most effectively be achieved through engaging the MINMEC (political) and MINTECH (technical) structures (with its associated Working Groups).

Expected Results:

5. Climate change risk and vulnerability assessments have been undertaken in the BRs, covering critical biodiversity, natural resource uses, ecosystem services, and socio-economic (including the resilience of production landscapes) aspects.

6. The government and other decision makers recognised and promoted the BRs as priority landscapes in developing and implementing strategies on climate change mitigation and adaptation and to enhance their resilience¹¹.

2.5 Cross-cutting Issues

Cross-cutting issues cover the range of activities considered under the UNESCO Biosphere Reserve Strategy's fourth objective, as well as additional components that are important in the South African landscape. These include zonation, partnerships, communication, capacity building, Indigenous Knowledge Systems (IKS) and research. They are (partly) related to the strategic objectives and overlap to some extent with each other. In considering each activity or component, one needs to recognise this overlap, and that implementing a strategy in respect of one component may well help achieve the expected results of another.

These cross-cutting issues are critical in achieving the three main strategic objectives above. However, the Strategy needs to accommodate both new and well-established BRs. Thus a certain level of flexibility in the expected results is anticipated.

2.5.1 Integrated landscape zoning and planning

According to UNESCO's Statutory Framework, Biosphere Reserves should consist of three zones, namely: the core areas, buffer zones and transition area. The MAP identified the need for a more integrated approach and that, within these zones, there is a need for a more inclusive approach to conservation, sustainable use of resources and collaborative management. The BR's integrated spatial plan provides the spatial context and vision of the BR. It is therefore critical that the integrated spatial plan addresses all spatial issues identified within the strategic objectives of the Biosphere Reserve Programme. Currently, all the BRs have a broad zonation plan, while only a few have detailed integrated spatial plans. The major constraint to establishing the detailed integrated spatial plans has been identified as a lack of funding.

BRs within South Africa are fortunate to have access to numerous sources of accurate and useful spatial data related to, amongst others, land use and biodiversity. These datasets can provide the basis on which to start building a more detailed integrated spatial plan. The integrated spatial plans can therefore be developed in stages and to various levels of detail over the next five years, depending on available budgets and spatial data. Ultimately, it is envisioned that they will include critical biodiversity areas, threatened ecosystems, ecosystem services, climate change mitigation and adaptation measures, ecological corridors, sustainable land use zoning for agriculture, and social and economic development. All broad zonation plans and detailed integrated spatial plans need to be made available to the public in GIS format to ensure the integration of these plans into municipal spatial planning and other spatial planning initiatives.

¹¹ This is an approach to meeting the national priorities and international commitments the government holds in this respect such as the UN Framework Convention on Climate Change (UNFCCC), the United Nations Convention to Combat Desertification (UNCCD) and the Global Framework for Climate Services (GFCSS).

These BR integrated spatial plans would need to take cognisance of other spatial plans to ensure that they are ultimately integrated into the local and district municipalities' Spatial Development Frameworks, Environmental Management Frameworks, Integrated Development Plans, Bioregional Plans and into other departmental spatial plans. The mapped detailed integrated spatial plans are to be made available in *Geographic Information System (GIS)*¹² format and supplied to local and district municipalities and departments involved in sector planning, and support provided towards their usage.

Within the next five years each BR is to have:

a. developed its respective detailed integrated spatial plan that provides the spatial vision of the BR to provide guidance regarding areas that need to be protected from a biodiversity and ecosystem services perspective, important buffer areas, ecological corridors linking areas together, areas important for climate change adaptation and mitigation and other environmental changes, and areas for agricultural, social and economic development and for addressing population dynamics.

Expected results:

7. BRs have made mapped broad zonation plans, including zone descriptions, publicly available online in GIS format.

8. The BRs' zonation plans (broad and ultimately detailed) have been integrated into municipal spatial planning and other spatial planning initiatives.

9. BRs developed detailed integrated spatial plans.

2.5.2 Collaboration and partnerships

A partnership is an arrangement where parties agree to cooperate to advance their mutual interests. Partners are more than stakeholders in that they share benefits, risk and responsibility and may be so positioned that they can perform activities that a BR cannot, or that they are better positioned to undertake. Partnerships can be established at different levels and can have different footprints. The essential partnerships within the Biosphere Reserve Programme are between the functional entities of the Programme, (i) at the highest level between UNESCO and the DEA, (ii) at a national level between the DEA and the BRs, (iii) at a provincial level between provincial and national government and the BR, and (iv) at the BR level between municipalities, the BR, and other stakeholders, such as communities and private sector partners. An additional layer of collaboration is between the DEA, the South African BRs and the other African BRs through AfriMAB, which collaboration focuses in particular on sharing information and joint learning. Partnerships between the DEA and other national and provincial government departments and between the BRs and national, provincial and local government departments, non-governmental organisations (NGOs), local communities and private landowners, are critical for the functioning of the BRs and are identified, in particular, as needing further strengthening.

The main reasons for the constrained development of partnerships and collaboration were found to be manpower (time), finance, complexity of operations and challenges in communicating BR objectives.

Developing partnerships within these constraints requires prioritisation in relationship to the requirements of the BR concerned. Partnerships are critical to the functioning and objectives of the BRs, as is the co-ordinating role of the DEA. Furthermore, partnerships are essential for the Biosphere Reserve Programme to be seen as a useful implementing or demonstration agent and for it to contribute to commitments under the various international agreements and national strategies and policies.

Partnerships and collaboration should be integrated interdisciplinary activities and may have both horizontal (between departments) and vertical (across organisational levels) linkages. Often successful partnerships can be created around mutual and tangible benefits, such as projects or particular activities. The Strategy will roll the developing of partnerships out over the whole five-year period with particular emphasis in the initial years. The focus will be on the following particular components:

a. identification of important partners and the prioritisation of these;

b. development of knowledge of partners and an understanding of their needs and goals, and demonstration of benefit in partnering with a BR;

c. development of clear messages, considering language and content, to potential partners to achieve buy-in; and

d. strengthening of partnerships with agreements or memorandums of understanding (MoUs) which outline each party's commitments and responsibilities.

¹² A geographic information system (GIS) is a system designed to capture, store, manipulate, analyse, manage, and present all types of spatial or geographical data.

Expected results:

10. A list of current and potential strategic partnerships across sectors and levels relevant to the different Biosphere Reserve Programme entities has been developed and prioritised.

11. Partnerships have been developed and endorsed with key state departments, parastatal entities and other key role-players.

12. The implementation of national priorities and international agreements, strategies, policies and programmes has been improved.

2.5.3 Communication and awareness raising

In alignment with the MAP, and the Implementation and Strategic Action Area D¹³ in the *UNESCO Biosphere Reserve Strategy* (UNESCO, 2015d), South African BRs are expected to develop a comprehensive communication strategy and action plan. The BRs were requested during the 7th and 8th SA National Biosphere Reserve Committee meetings to develop a communication strategy. By May 2015, only three of the BRs had communication strategies in place, with the failure of the others attributed, in part, to limited capacity.

Much of the success of the Biosphere Reserve Programme, and individual BRs, in achieving the strategic objectives initially depends on communication. In order to achieve the strategic objectives (as per section 2.4) there needs to be stakeholder buy-in, partnerships created and awareness generated amongst the general public, role-players and stakeholders of the respective BRs. Communication, in all its forms, is the keystone to getting the BR messages into the public domain and raising the profile of the BR concept, as well as for internal liaison within the Biosphere Reserve Programme and its partners.

Communication is a cross-cutting issue and therefore everyone involved in implementing the Biosphere Reserve Programme is obligated to communicate effectively. It is a two-way process, both vertically and horizontally, across all audiences, levels and spheres, internally and externally, which includes communication within the DEA and with its reporting structure in national government and with other national departments. It is the responsibility of all to ensure transparent, continuous and timeous communication flow between the different bodies and stakeholders.

The Strategy requires that the SA National Biosphere Reserve Committee must compile a basic communication strategy for the Biosphere Reserve Programme as a whole. This will be the responsibility of a task team that is formed to deal specifically with communications and marketing in the Biosphere Reserve Programme. Over the five year period the initial communication strategy can be further developed. The information in the SA National Biosphere Reserve Committee communication strategy can subsequently be used to guide individual BRs with the development of their own more specific communication strategies. The minimum elements that a communication strategy should include are the following: (i) the reason for communicating; (ii) definition of the different target audiences (including internal and external audiences); (iii) description of the key messages the Biosphere Reserve Programme and individual BRs wish to convey; and (iv) explanation on how the desired messages will be delivered/communicated to the identified target audiences.

Expected results:

13. The SA National Biosphere Reserve Committee's Communication and Marketing Task Team developed and implemented a basic communication strategy for the Biosphere Reserve Programme as a whole, in a phased approach over the five-year period.

2.5.4 Capacity building

Capacity building of stakeholders within the Biosphere Reserve Programme with regard to achieving the objectives of the MAB Programme and sustainable livelihoods is an important aspect in ensuring the success of the Programme. The MAP and the [Final Draft Global Biosphere Reserve Strategy 2015-2025](#) identify the role the Biosphere Reserve Programme plays in enhancing and strengthening the communities' and stakeholders' capacity in and knowledge of managing biodiversity and conservation and ensuring sustainable livelihoods. Capacity building of communities and stakeholders is required at all levels within the Biosphere Reserve Programme. Capacity building for the development of zonation plans, which include biodiversity conservation, anticipated impact of climate change, population growth and distribution, and the need for sustainable living aspects, is vital to ensure the sustainability of the BRs.

Capacity building is, however, not restricted to "outside" stakeholders. Capacity building within the Biosphere Reserve Programme is also important. This will be achieved by initially giving priority to enhancing the capacity of key individuals within Biosphere Reserve Programme entities, after which the focus will shift more to external partners. The en-

¹³ Strategic Action Area D: Comprehensive, modern, open and transparent communication, information and data sharing.

hanced internal capacity is critical for the achievement of targets under cross-cutting and enabling environment sections, particularly collaboration and partnerships, budgeting and funding, governance and management structures, and communication and awareness raising. The roles and responsibilities discussed in the later section on governance (2.6.4) may well require some capacity building to ensure that the identified responsibilities are properly fulfilled.

Within the next five years the Biosphere Reserve Programme will have:

- a. undertaken an assessment of training needs of individuals and organisations within the Biosphere Reserve Programme and undertaken training where required to ensure capacity is available to fulfil the identified roles and responsibilities.
- b. developed and implemented a capacity building programme. The programme will be aimed at educating, training and empowering prioritised communities and stakeholders at all levels of the Biosphere Reserve Programme on the objectives of the Biosphere Reserve Programme and in managing biodiversity and conservation and living sustainably.

Expected results:

14. *The capacity of individuals and organisations has been enhanced to meet respective roles and responsibilities.*
15. *Prioritised role-players and stakeholders have an enhanced understanding of, acceptance of and capacity for biodiversity conservation and sustainable livelihoods.*
16. *Biodiversity and sustainable livelihoods are mainstreamed in planning and decision-making processes.*

2.5.5 Learning, monitoring and knowledge sharing

Learning, monitoring and knowledge sharing is identified within the MAP and the Final Draft Global Biosphere Reserve Strategy 2015-2025 as an important component of the Biosphere Reserve Programme. Through this component, the knowledge and lessons learnt can be shared amongst the BRs and partners and people outside of the BRs. This is the essence of BRs being demonstration sites for areas outside of the BRs.

Learning comes from observing, researching and monitoring the implementation and impact of the various aspects and projects of the Biosphere Reserve Programme. Monitoring and evaluation should be aimed at addressing the BRs' progress towards achieving the Biosphere Reserve Programme's three strategic objectives and the Programme's ability to assist the government in reaching its objectives.

Acting proactively by incorporating planning for the capture of data in the annual work plan assists in ensuring that management receives the information timeously, allowing management to make faster and more informed decisions.

Monitoring can become an expensive and time-consuming task. It is therefore important to prioritise the most relevant aspects which require monitoring and the most cost effective means. BRs need to create partnerships with academic institutions, government bodies and NGOs to assist the BRs in monitoring, particularly complex components.

Within the next five years the BRs will be required to:

- a. develop and implement a cost-effective monitoring and evaluation programme. This will be achieved partly through the development of partnerships to assist in the monitoring and evaluation of key aspects (as stipulated under each of the strategic objectives) of the BR.
- b. develop a monitoring and evaluation database to capture the results of the monitoring and evaluation programme. Where possible these results should be linked spatially within a spatial database.
- c. share and make available to other BRs and the public via an online data sharing system, knowledge, results and lessons learnt.

Expected results:

17. *The Biosphere Reserve Programme developed and implemented a cost-effective monitoring and evaluation system.*
18. *Two SA National Biosphere Reserve meetings were designated, one towards mid-term and another for final review of the Strategy implementation.*
19. *The Biosphere Reserve Programme developed an online system to share lessons learnt, knowledge and monitoring and evaluation results with other BRs and the public.*

2.5.6 Applied sustainable development science

Some BRs have developed partnerships with research institutions such as universities, agricultural institutes or conservation organisations, and have helped in identifying particular research needs and assisted in the facilitation of the

research. In some instances, BRs have requested particular studies to be undertaken to assist with the management of the respective BR. However, few of the studies are long-term research programmes or programmes developed specifically to inform Biosphere Reserve management, zoning, management of ecosystem services, or promoting learning from sustainable development.

The UNESCO Strategy refers to 'Sustainability Science' (UNESCO Biosphere Reserve, 2015). However, within the South African context it may be more appropriate to approach it from an 'Applied sustainable development science' perspective. This is an integrated, problem-solving approach that draws on the full range of scientific, traditional and indigenous knowledge in a trans-disciplinary way in order to identify, understand and address present and future economic, environmental, ethical and societal challenges related to sustainable development, such as climate change, and which, ultimately, serves the needs of the BR. Applied sustainable development science promotes the inclusion of key sustainable development issues in teaching and learning (section 2.5.5), to motivate and empower learners to change their behaviour through acquiring new skills, competencies and values, and to take action for sustainable development. BRs, as centres of learning, have a key role to play in facilitating, mainstreaming and co-ordinating science activities (natural, formal, social or applied) undertaken within the Biosphere Reserve. Such activities must be communicated and coordinated so that various programmes can collaborate and link with one another and build on existing knowledge bases, thereby strengthening and informing communities and sustainable development options.

Research programmes within a BR have the potential to assist the BR greatly by providing sound information for management approaches and decisions. Long-term research can help to evaluate the success of management decisions and provide information regarding indices that are often difficult to measure (such as those of climate change). Research can also be used to identify easy-to-measure parameters for often complex systems, which is important in monitoring and evaluating the BR. This component is obviously closely linked to the previous section regarding the sharing of knowledge.

Over the five-year period the BRs need to address the following key components:

- a. The formation of partnerships with research organisations
- b. Promotion of applied sustainable development science that is relevant to the BR
- c. Sharing applied sustainable development science outputs
- d. The involvement of researchers and science to assist the BR in decision support.

Expected results:

20. *The Biosphere Reserve Programme developed sound partnerships with research organisations.*

21. The research undertaken delivered sound long-term measurement, providing an improved information base for relevant BR management decisions and direction.

22. Results and outputs from applied sustainable development science are shared.

2.5.7 Indigenous knowledge systems

The investigation of indigenous knowledge systems (IKS) provides the BR with the opportunity to record and implement IKS that may assist the BR in achieving its strategic goals. IKS have been recognised at the national sphere within the Department of Science and Technology (DST) since 2002, as being important for both the economy and the participation of communities in knowledge production and utilisation. IKS are recognised, in conjunction with science, within the MAP and the Final Draft Global Biosphere Reserve Strategy 2015-2025 as an important component of adapting to change and building resilience. IKS may include knowledge systems that have been brought in from neighbouring regions and countries and are now being utilised within the BRs. They may also include recently developed practices. The knowledge contained in IKS may vary from the utilisation of various plants or animal species for food, medicine, beverages, fibres, building material or other uses, to farming, building or cultural practices that may provide sustainable means of utilising the environment. Research into IKS may also lead to the discovery of an important use of a species or parts thereof, which may have relevance in bioprospecting.

Research into IKS is also important for the recognition and preservation of cultural knowledge and practices, which may otherwise be lost due to the pressures of an ever-developing world, industrialisation and the migration of people from rural areas into towns. It is important that these knowledge systems are captured and their possibilities for future application be researched.

Within the next five years BRs must:

- a. work alongside the DST in developing a programme that investigates IKS as sources for means to adapt to change

and build resilience within the BRs. The IKS programme should investigate IKS and their related cultural practices and their sustainability within the context of growing populations, current pressures and changes as a result of climatic, environmental, political and social changes.

Expected results:

23. The Biosphere Reserve Programme developed partnerships with the DST, local communities and academic institutions to identify and investigate IKS of relevance to biodiversity conservation and sustainable livelihoods.

24. The Biosphere Reserve Programme, through its partnerships with the DST, academic institutions and communities, listed, prioritised, and investigated IKS of relevance to biodiversity conservation and sustainable livelihoods.

2.6 Enabling Environment

This section includes aspects that are not necessarily directly involved in the implementation of the strategic objectives, but are required in order for the Biosphere Reserve Programme to function in a manner that facilitates the achievement of the strategic objectives. The enabling environment covers the legislative context, governance, budgeting and funding, and marketing. These are critical functions for the operation of a BR and the Biosphere Reserve Programme and, to a great extent, provide the means to implement the other components of the Strategy.

2.6.1 Legal context of the Biosphere Reserve Programme

The legal context of the Biosphere Reserve Programme in South Africa is important, not only for its implementation, but also to ensure sound governance and to assist the Programme in enhancing its credibility, particularly with organs of state. In the Western Cape, there is specific provincial legislation that provides guidance and addresses some requirements of the Biosphere Reserve Programme in that province, particularly in terms of land use management. However this particular legislation is likely to require significant amendments to remove land use planning aspects once the Spatial Planning and Land Use Management Act (SPLUMA) regulations are in place.

BRs can be seen as informal institutions because their management plans are not necessarily legally binding. The question of providing BRs legal recognition in national legislation has been a recurring subject of discussions within the UNESCO Biosphere Reserve Programme and regional BR networks. During these discussions, difficulties in management of the transition zone, establishment of dedicated authorities for BRs, and creation of a framework for cooperation among stakeholders were considered the main challenges (Bonnin and Jardin, 2009). Additionally, in SA, financial support is a significant challenge. The Madrid Action Plan recommended that “Biosphere Reserves receive a reinforced legal recognition, and that Member States are encouraged to include BRs in their legislation” (Target 11). Bonnin and Jardin (2009) looked at the legal definitions of a BR in their study for UNESCO in order to provide a ‘model law’ as a blue-print for states wishing to elaborate a specific legal category for BRs.

In a more recent study of BRs developed with and without national legal frameworks in the Ukraine and Sweden, Elbakidze *et al* (2013) concluded “that a stronger legal support might not be needed for BRs, rather sustainable development needs to be recognized as an integrated place-based process at multiple levels”. It was shown that the three core functions (conservation, sustainable development and logistic support) of a BR can be reflected in legislation, without legislating the BR programme itself. Taking this approach would also support the achievement of the SDGs.

In the South African context, BRs are all independent, apolitical, not-for-profit bodies. This is recognised as a strength of the Biosphere Reserve Programme where each BR is autonomous, allowing it to collaborate equally with government and non-government entities, as well as effectively between government entities at different levels. Increased legislation could lead to an increase in state-required interventions in the Biosphere Reserve Programme and a loss of autonomy and flexibility. Coupled with this is the requirement of some enforcement of any legislation, which can be costly and difficult, especially whilst simultaneously developing partnerships and trust with stakeholders. Furthermore, specific BR legislation will undermine their role as demonstration sites for sustainable development, with the argument that it can only be achieved with the BR specific legal protection. Also, new legislation takes time to formulate and gain approval before enactment, and once approved is slow to react to changing circumstances. Developing specific BR legislation is thus not suggested.

The Strategy therefore focuses on the inclusion of BRs in strategies and policies. Many government priority programmes as well as the implementation of international agreements is often through the development of policies and strategies. These policies and strategies usually have avenues for stakeholder comment. These are ideal areas for the Biosphere Reserve Programme to seek recognition as well as positioning as implementation partners and demonstration sites.

The legislative context of the Biosphere Reserve Programme is still important and should be achieved through the recognition (and not the regulation) of BRs and the Biosphere Reserve Programme in legislation (much of it existing) that

support the core functions of BRs. This environmental, conservation, sustainable development, IKS and other relevant legislation and the related regulations are useful areas to engage in in the five-year roll out of the Strategy. Acts are generally implemented through regulations. These regulations tend to change or are updated more frequently than the associated Act. Regulations do not extend the scope of an Act - they merely serve to add specificity to what is covered by an Act to ease the Act's implementation. For example, the Environmental Impact Assessment regulations under the National Environmental Management Act already specifically include BRs' core areas as activity triggers.

As it will be challenging to plan for the development, updating or changing of relevant strategies, policies or legislation in advance and opportunities may arise *ad hoc*, the attention of the whole Biosphere Reserve network will be required in the identification of which policies, strategies and legislation to consider.

The Strategy therefore focuses on elevating the recognition of the Biosphere Reserve Programme, over the next five years, through the inclusion or recognition of the Biosphere Reserve Programme, or components thereof, in relevant national policies, strategies or legislation. This is to be achieved through:

- a. active participation in the drafting or revision of any relevant strategies and policies, and where appropriate relevant legislation through providing comments from all levels of the Biosphere Reserve Programme.
- b. coordination and communication through the leadership of the DEA and the SA National Biosphere Reserve Committee, while engaging all other Biosphere Reserve Programme entities. This is best achieved through the establishment of a task team.

Expected results:

25. *Recognition of the Biosphere Reserve Programme has increased through its inclusion in relevant policies, strategies and legislation.*

2.6.2 Governance and management structures

The Biosphere Reserve Programme in South Africa is line managed by the Department of Environmental Affairs (DEA). The DEA therefore holds a critical coordinating role in respect of UNESCO, the BRs, provinces, and AfrimAB.

The BRs are registered as non-profit organisations and each has a governing board. The BRs have, thus far, in most cases been run by volunteers and staff employed in a part-time capacity or on a specific project basis, rather than by staff employed on a full-time basis. This raises the question of what the minimal core operational needs for a BR are in order to achieve the roll-out of this Strategy. Provincial engagement is often limited to conservation entities, which fulfil critical coordinating and supporting roles, while collaboration with municipalities has been limited.

The relationship between DEA and the BRs is formalized through a MoU. Whilst the BRs are non-government entities, they do assist government in meeting many environmental and social priorities and commitments. In order to strengthen the cooperation, facilitate the provision of support and assist in funding key projects and programmes the DEA has established a MOU with the BRs. This is a significant step in ensuring improved co-operation between the three spheres of government in support of the BRs and provides the potential to jointly develop, fund and implement key projects and programmes.

The SA National Biosphere Reserve Committee was established in 2010, is chaired by the DEA's Deputy Director-General: Biodiversity and Conservation, and operates in accordance with an approved Terms of Reference. The Committee is composed of at least (i) one representative from the South African National Commission to UNESCO, (ii) two representatives of the DEA, (iii) a representative of each institution responsible for the management of the Programme in the provinces, (iv) one representative of each provincial BR forum, (v) one representative of the management structure of each BR, (vi) one representative of the South African Local Government Association (SALGA), and (vii) one representative of the Department of Cooperative Governance and Traditional Affairs. Committee meetings may be attended by other people on an *ad hoc* basis by invitation and at the discretion of the Chair (DEA Biosphere Reserve Programme, 2010). The establishment of this Committee has improved the collaboration amongst key Biosphere Reserve Programme entities and, over time, the quality of the meetings has improved. However, the SA National Biosphere Reserve Committee has thus far provided limited support in the overall strategic direction of the Biosphere Reserve Programme, providing, instead, more of a coordinating and exchange of information function, which has been perceived as being very repetitive. It is acknowledged, therefore, that there is potential, and it would be preferable, for the Committee to grow and improve its overall strategic function and operations, rather than to establish and develop a new institution.

Recently a decision was taken by the SA National Biosphere Reserve Committee to establish a small Management Committee (ManCo) in order to expedite the implementation of resolutions arising from SA National Biosphere Reserve Committee meetings and to guide decisions made in the interim between the meetings of the Committee.

To strengthen the overall governance and management of the Biosphere Reserve Programme, and in light of the anticipated increase in the number of BRs, the following priorities are to be implemented under this five-year Strategy:

- a. development and agreement on roles and responsibilities of key Biosphere Reserve Programme entities. Roles and responsibilities were partly discussed and agreed upon during the Strategic Workshop recently held in support of the development of this National Biosphere Reserve Strategy. (While not normally included in a strategy document, given their relevance, the roles and responsibilities are included as Appendix 3. They may require review and further refinement.)
- b. optimising the strategic function and operations of the SA National Biosphere Reserve Committee, including its ManCo.
- c. strengthening the management of the Biosphere Reserve Programme across critical entities, from local to national spheres and levels, in particular regarding management's role in guiding overall strategic direction and priorities, in coordination, facilitation and communication, and in engaging critical partners across the strategic objectives. (Linked to 2.5.2, 2.5.3, and 2.5.4.)
- d. enhancing the BRs' governance structures.

Expected results:

26. *The overall strategic direction of the Biosphere Reserve Programme in South Africa improved.*
27. The capacity for roll-out of the Strategy has been enhanced.
28. *Collaboration with other departments critical to the Biosphere Reserve Programme at national, provincial and local spheres improved.*

2.6.3 Budgeting and funding

Budgets and funds for the Biosphere Reserve Programme are critical for the implementation of this Strategy and to support BRs in becoming functional and effective across all the Programme's objectives and priorities. Current budget and funding levels are, however, in most cases, too limited, particularly in respect of BRs being able to fulfil their potential role as key mechanisms for delivering integrated, sustainable economic development and conservation at a relevant scale. This lack of adequate funding is due to a variety of reasons, such as limited awareness and knowledge about the Biosphere Reserve Programme amongst potential partners and budget and funding entities; limited understanding and clarity among Biosphere Reserve stakeholders regarding which entities could potentially support the BRs and in what way; and, at best, mainly re-active approach to budget and funding opportunities due to lack of staff and proficiency in planning and budgeting; dependency on mainly project funding, with insufficient support towards core operations; and, until recently, the lack of a coordinating body. These limitations are to be addressed by DEA Biosphere Reserve and the SA BR Trust as a priority over the next five years under this Strategy by (i) securing sufficient budgets from different government sources across spheres to ensure, at minimum, a core operational budget for the Biosphere Reserve Programme and its BRs; and (ii) the development and implementation of a fundraising strategy, partly building on work undertaken by cross-cutting and other enabling environment items. The five-year MoU signed between DEA and the BRs provides further support towards addressing these funding limitations.

In order to ensure at least the minimum core operational capacity for the Biosphere Reserve Programme and its BRs, and to meet commitments made in this respect in terms of the Dresden Declaration (UNESCO, 2011), it will be critical to secure budgets for the Strategy. In light of the international commitments and the South African government's national priorities (as indicated in section 1.2 above), to which the Biosphere Reserve Programme is well positioned to make significant contributions, ensuring a core operational budget should involve financial support from across the relevant departments and spheres of government., Securing these funds will require a pro-active role and approach by the DEA, in particular. Securing such budget would be rolled out in stages, with clear targets each year. It would focus in particular on the following three inter-linked components:

- a. developing and strengthening the operational capacity of the unit responsible for the Biosphere Reserve Programme within the DEA;
- b. developing a pro-active, strategic and staged budgeting approach to obtain budgets across departments and from different spheres of government; and
- c. strengthening the coordination of budgeting efforts across all critical Biosphere Reserve entities in support of *the whole becoming more than the sum of its parts*, and to avoid conflict and contra-productive competition.

The second facet to securing sufficient funding, i.e. fundraising, is, on its own, challenging enough and, in order to be effective, should not be done in isolation but should build on work undertaken in relation to several cross-cutting and

other enabling environment issues which are an integral part of this National Biosphere Reserve Programme Strategy. Hence, in addressing these cross-cutting and other enabling environment issues, the various stakeholders should, in addition to the focus of the issue, also consider aspects in support of fundraising efforts. This concerns in particular:

- developing clear, integrated BR spatial plans which define priorities and expected outcomes (see 2.5.1), and ensure collaboration and partnerships (2.5.2 and 2.5.7) and clearly defined roles (2.6.2). Such plans are critical *building blocks* towards formulating sound and effective fundraising proposals, the success of which, in turn, would support implementation of the plans and approaches proposed.
- raising awareness through communication (2.5.3) and marketing the approach (2.6.4). Funding will always be a constraint. Fundraising is competitive and donors often fund entities known to them. It will also, therefore, be critical to ensure that government entities are made aware of the role BRs can play in achieving government priorities and commitments. In order to raise awareness and market this role, it will be critical to document and showcase the BRs' concrete deliverables across the three core functions and their impact (see also next point).
- sharing lessons learnt (2.5.3) and documenting results (2.5.5 and 2.5.6). Donors are responsible to their actual source to justify whether the funds have been well spent. They would need to be able to document the effectiveness of the work supported - data and information in respect of which they would request from the entity supported.

The above three points of consideration, while related, are non-consecutive. They will require clarification and detailing over time.

The process of fundraising will require ongoing work across the five-year time frame of this Strategy, with the emphasis initially on the first two items listed, and the balance tipping more towards the last two items later on. While the fundraising is mainly in support of concrete work at BR level, it will require the involvement of all Biosphere Reserve entities, from local to national spheres and levels, in one form or another, in order to be successful in the fundraising efforts.

Given the critical role of funding for the roll-out of this National Biosphere Reserve Strategy and for the implementation of concrete work on the ground and achieving impact, the development of a sound fundraising approach must be given priority. This approach will be rolled out in stages with clear targets each year, and will focus in particular on the following three inter-linked components:

- a. developing and strengthening the operation of the SA BR Trust (as an independent entity).
- b. developing a pro-active, strategic and staged fundraising approach in support of different spheres and levels, i.e. individual BRs, provincial BR groupings (BR Forums), and nationally (all BRs). The aim is to achieve (i) diversification in funding from government and non-government sources, (ii) further support (above budgets obtained) towards core operation and specific interventions, and (iii) support across the strategic objectives, and cross-cutting and enabling environment items of this Strategy.
- c. strengthening the coordination of fundraising efforts across all critical Biosphere Reserve entities in support of *the whole becoming more than the sum of its parts*, and to avoid conflict and contra-productive competition.

Expected results:

29. Operational budgets secured for the Biosphere Reserve Programme and BRs from a diversified set of sources across spheres of the RSA government over the five-year time frame of this Strategy.

30. Levels of funding for the Biosphere Reserve Programme and BRs from a diversified set of non-RSA government sources across the strategic objectives over the five-year time frame of this Strategy have increased.

31. Increased levels of funding for the Biosphere Reserve Programme are allocated through the SA BR Trust.

32. The Biosphere Reserve Programme has explored and investigated approaches to obtain funding through innovative mechanisms such as an endowment fund and biodiversity off-sets.

2.6.4 Marketing

Marketing is a valuable instrument in creating an environment that will enable South African BRs to function effectively, as well as for making the BRs better known. Although a component of communication, marketing has more specific objectives. There are several reasons for marketing BRs. These include, but are not limited to: raising the profile of the Biosphere Reserve Programme, individual BRs and, more specifically, the BR concept, which in turn could help attract funding for the BR as a whole or for specific projects; raising awareness about the ecological and cultural importance of the biodiversity and associated ecosystem services encompassed by the BR, including the tourism/recreational potential; and showcasing projects within the BR, e.g. sustainable development related pilot projects illustrating the values and functions of a BR.

Marketing is defined as: "*the process of planning and executing conception, pricing, promotion and distribution of ideas, goods and services to create exchanges that satisfy individual and organizational goals*" (Bennett, 1995).

Marketing the Biosphere Reserve Programme and the BR concept is the responsibility of all role-players in the Biosphere Reserve Programme. This includes the DEA, under whom the Programme falls, the provinces in which the BRs are located, the municipalities situated in the respective BRs and the individual BR entities, as well as the SA National Biosphere Reserve Committee. While it is the prerogative of the different spheres of government to determine how they will assist with marketing efforts, marketing is more effective when similar or layered and compatible messages are communicated from different levels, as this reinforces and enhances their effects. Therefore, and to ensure integration between the different spheres, marketing should be a collaborative effort undertaken between and by all the entities.

For the purposes of this Strategy the minimum requirements are:

a. that the SA National Biosphere Reserve Committee's Communication and Marketing Task Team develops a Marketing Plan (i) to promote the Biosphere Reserve Programme in general and as a whole, and (ii) which considers the specific Biosphere Reserve Programme needs to be budgeted for and how to raise the funds accordingly. This Marketing Plan should be linked with national and provincial marketing plans and could be very basic at its onset, to be refined over the five years of this Strategy.

b. that once the SA National Biosphere Reserve Committee has developed a marketing plan for the whole Biosphere Reserve Programme, the BRs compile a simple marketing plan which is more specific to their individual BRs, but guided by the National Marketing Plan. The BR marketing plans can be done when they are ready to undertake the task, and it could be done in partnership with the province or other entities.

The Marketing Plan should, at the very least, incorporate the following basic elements: (i) 'product' description (where product could be the BR); (ii) place/location description; (iii) description of the methods of promotion; (iv) price details where applicable; (v) people to be targeted; and (vi) a budget – including in-kind contributions. Developing and implementing a Marketing Plan can be a very costly undertaking. Currently most BRs do not have the desired budget to allocate to marketing. It is therefore essential that there is collaboration through partnerships, and that the SA National Biosphere Reserve Committee and BRs are innovative and cost effective when implementing the Marketing Plan.

Expected Results:

33. *The SA National Biosphere Reserve Committee's Communication and Marketing Task Team developed and implemented an innovative, integrated and collaborative marketing plan for the general promotion of the Biosphere Reserve Programme as a whole (which encompasses all the BRs) and in support of budgeting and fundraising purposes.*

34. When ready, in the five-year period, each BR developed and implemented an innovative, integrated and collaborative marketing plan.

2.7 Framework for Nomination of new Biosphere Reserves

The UNESCO Biosphere Reserve Programme is implemented worldwide under a variety of management entities. The basic UNESCO nomination criteria are, therefore, formulated to be reasonably broad. Within the South African context, where there is good protected area and environmental legislation and where the various BRs are not government run, the nomination criteria need to be strengthened to ensure that BRs which achieve nomination will be effectively and efficiently managed, sustainable, well-structured and supported.

In the past, the South African BR nomination process has suffered from a variety of challenges which have frustrated and delayed the process. These include: incomplete documentation in the submission to UNESCO; late submissions; and a lack of detail on the UNESCO submission requirements, including listing of activities (e.g. nuclear) within the BRs. These challenges have resulted in nomination processes taking up to seven years.

Compounded with these avoidable delays, is the sad reality that some BRs, having achieved nomination, then lack the planning and resources to fulfil their function and become dormant to various extents. To address this, the nomination process needs to include planning that will assist in the sustainability and functioning of the BR once nominated.

The Biosphere Reserve Programme would thus benefit substantially from a nomination process that is robust and has clear criteria and process steps beyond those of the UNESCO Biosphere Reserve nomination procedure. Important criteria that need to be considered and achieved in the nomination process are broadly grouped into the following:

- General (meeting the UNESCO and RSA requirements)
- Conservation (biological significance, core areas and uniqueness)
- Sustainable Development (zonation, management, funding, promotion)
- Logistic Support (stakeholder support, collaboration, partnerships, learning)

To achieve these, the Strategy focuses on the following:

- a. the establishment of new BRs around an existing core protected area which contains particular biodiversity (uniqueness and biodiversity hotspots) and is recognised by the South African National Biodiversity Institute (SANBI);
- b. ensuring the capacity of the new BR sites to address the management of biodiversity and ecosystem services on a broader scale, and to inform sustainable development (including spatial planning) across a diversity of boundaries (ranging from ecological to political). This entails ensuring, amongst others, staff capacity and skills, as well as funding availability;
- c. the inclusion of factors such as climate change impact and freshwater ecosystems (lentic, lotic and wetlands) and the associated catchments of these systems;
- d. the functioning and sustainability of the new BR. This is critical and, as such, a preliminary management plan and a proposed financing approach must be developed prior to nomination;
- e. a demonstration by the new BRs on how they contribute to the commitments made under some or all of the international conventions to which the RSA has signed on to;
- f. the screening of new applications and nomination of new BRs to UNESCO by the DEA, with support from the SA National Biosphere Reserve committee, once all the UNESCO and South African criteria have been met; and
- g. implementation of a path by the DEA, with support from the SA National Biosphere Reserve Committee, to promote new biogeographically representative BRs, which may encompass, and could make special effort to include, critical areas such as World Heritage, Ramsar and migratory species' habitat sites.

The Implementation Plan provides detailed criteria and a decision support flow diagram to assist in these action points.

Expected results:

- 35. A streamlined and clear nomination process with a sound application screening process is implemented prior to submission to UNESCO.
- 36. New BRs are effective, sustainable, well-structured and supported at the time of nomination.

3. CONCLUSION

This Strategy has been developed through the analysis and understanding of the strengths and weaknesses of the Biosphere Reserve Programme. It builds on the strengths and furnishes practical steps to address the weaknesses, thereby providing a sound basis for a more sustainable and inclusive Biosphere Reserve Programme.

The value of the Biosphere Reserve Programme is reflected in the valuable contributions it will make towards achieving the Sustainable Development Goals and towards meeting international commitments and national priorities by conserving biodiversity and ecosystem services which will support community development and upliftment through enabling sustainable livelihoods, and addressing climatic changes. The Biosphere Reserve Programme has the potential to be an important implementation and demonstration tool of these interventions in prioritised landscapes.

Whilst the Strategy is ambitious, it draws on the existing strengths of the Biosphere Reserve Programme and aims to uplift the whole Programme to a position where it is achieving its potential and meeting the needs of the nation. It does constitute a departure from the past operational processes, but through the separate step-by-step practical Implementation Plan and the Monitoring and Evaluation Framework, this Strategy provides clear guidance for the success of the whole Biosphere Reserve Programme.

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Socio-economic related programmes

1. UN: Rio+20 Conference Outcomes (ESDN, 2012): Rio+20 Conference refers to the UN Sustainable Development Conference (UNCSD) held in Rio in June 2012 - 20 years on since the first conference held in Rio. The 1992 Rio Conference, also known as the UN Conference on Environment and Development (UNCED), or the Earth Summit, was a defining conference for sustainable development. Several important documents were derived from Rio: Three conventions¹⁴, the Rio declaration (with 27 principles) and Agenda 21 (the Rio Action Plan). Evidently funding was an issue and, as a result, by 2002, 90% of Agenda 21 items had not been implemented. In 2002, the Johannesburg Summit (World Summit on Sustainable Development) was held to evaluate progress and to revive action. There were three main outcomes: a political declaration, the Johannesburg Plan of Implementation (JPOI) and Type II Partnerships¹⁵. Rio+20's purpose was to be "a conference of action". There were several prominent heads of state from countries such as Germany and the USA. Despite some criticism of Rio+20 as being disappointing, the outcomes were: three objectives, a focus on two themes (of which green economies is one), and recognition of seven critical issues: jobs; energy; cities; food; water; oceans; and disasters. The final outcome document has six sections¹⁶ and was substantially more detailed than the zero draft. In the framework for action and follow-up there are twenty-six actions identified. These include: poverty eradication, sustainable tourism, sustainable transport, sustainable cities, food security, biodiversity, climate change and education.

2. United Nations: Sustainable Development Goals (SDG) (UN, 2015): The SDGs are a component of the New Agenda for Global Action. They are a follow-on from the Millennium Development Goals (MDG) and are also known as the Global Goals. Seventeen goals have been identified and 169 associated targets provided. On the 25th September 2015, world leaders met in New York to adopt the 2030 Agenda for Sustainable Development, i.e. the SDGs. It is considered an unprecedented document which requires commitment and collaboration. The main purposes of the New Agenda are to rid the world of poverty and to heal and secure the planet for present and future generations. The SDGs will guide policy and funding for the next 15 years. For the most part, the goals relate to development. Goals 14 and 15, however, pertain to conservation of ecosystems, goal 13 is dedicated to addressing climate action, and goal 7 is to achieve affordable and clean energy. There is no specific reference to developing a green economy: As the name implies, sustainability is a key focus in achieving the goals.

With regard to the ODI projection that the SDGs are not likely be met by 2030, as per the current global trends (Nicolai *et al*, 2015), there are five SDGs that require a total change of direction in order to meet the 2030 targets. These include goals particularly pertinent to the Biosphere Reserve Programme: goal 10: reduce income inequality; goal 12: reduce waste; goal 13: combat climate change and goal 14: protect marine environments (Nicolai *et al*, 2015). These emphasise the valuable role that the Biosphere Reserve Programme can play in contributing towards meeting the SDGs in the South African context and highlight the need for early planning and collaboration at a national level.

Biodiversity/Conservation related conventions

3. Convention of Biological Diversity (CBD) and the Aichi Targets – 1993/1995 (UN, 1992; CBD, 2011): The United Nations developed the convention with the purposes of conserving biological diversity, encouraging sustainable use of natural resources and the fair and equitable sharing of benefits. It recognises the value of biodiversity on a variety of levels, the threats to biodiversity and the need for conserving it for future generations. South Africa became a signatory of the convention in 1993 and it was ratified in 1995. It is the CBD that informs the NBSAP (see 1.2.2). The Strategic Plan for Biodiversity 2011–2020 and the Aichi Targets is the most recent plan that succinctly states what the biodiversity targets are for the next decade. There are twenty targets divided between five strategic goals. Aichi Targets 3 and 18 refer specifically to sustainable use, as does the strategic goal B (and targets 5-10): *Reduce the direct pressures on biodiversity and promote sustainable use*. Aichi Target 20 requires parties to mobilise the necessary financing for the implementation of the strategic plan. Aichi Target 11 links to PAES etc.

4. UNESCO: World Heritage Convention – 1972 (UNESCO, 1972): This convention is significant because it links conservation of biodiversity/natural heritage and cultural heritage in the same document. The origins of the convention are post-World War I, and it reflects the desire to conserve world culture and protect Natural Heritage, thus merging the two. In 1959, the construction of the Aswan Dam threatened the existence of the Abu Simbel Temples, in Egypt. This raised a concern about the loss of cultural heritage, and prompted UNESCO to take a stand towards safeguarding the temples (which were ultimately moved to higher ground). A White House conference in 1965 called for the inclusion of nature, so that the World Heritage Convention could be established. In 1968, the International Union for Conservation of Nature (IUCN) made several similar proposals. In 1972, the text for the convention: *Protecting World Culture and*

14 CBD, UNFCCC and Principles for the sustainable management of forests.

15 Type II Partnerships: voluntary transnational multi-stakeholder agreements between government and non-state actors allowing civil society to contribute to the implementation of sustainable development.

16 I. Our common vision, II. Renewing political commitment, III. Green economy in the context of sustainable development and poverty eradication, IV. Institutional framework for sustainable development, V. Framework for action and follow-up, and VI. Means of implementation.

Natural Heritage was adopted by UNESCO. There are several benefits to ratifying the convention, such as access to the World Heritage fund, public awareness, improved tourism value and technical training to site management teams. The Convention makes no reference to sustainable development or green economy.

5. United Nations Framework Convention on Climate Change (UNFCCC) – 1993/1997 (UNFCCC, 2006): It is recognised that climate has changed over the millennia, but the concern is that the current changes are predominantly anthropologically induced, resulting in the major threat to biodiversity and livelihoods. This convention was established to provide guidance on an international level on mitigating and adapting to the impacts of climate change. The RSA was a signatory to the UNFCCC in 1993, which was ratified in 1997. In 2002, the RSA became a signatory to the Kyoto Protocol¹⁷. The RSA is registered as a Non-Annex 1¹⁸ country. The Convention comprises principles based on the 1992 Rio Declaration.

6. United Nations Convention to Combat Desertification (UNCCD) - 1997 (UN, 1994): The UNCCD was established for those countries experiencing serious drought and/or desertification, especially in Africa. It recognises that developing countries are most vulnerable to the impacts of drought and desertification, and that it is a global issue. It also notes that sustainable development is affected by drought and desertification, and that desertification is caused by complex interrelationships between biological, physical, social, political, cultural and economic factors. UNCCD acknowledges that combatting desertification contributes to achieving the objectives of the UNFCCC and CBD, amongst others. The aims are to combat desertification and mitigate the effects of drought; and to implement long-term strategic objectives to achieve improved productivity of land, rehabilitation, conservation and sustainable management of water and land resources. The UNCCD provides guidelines to contracting parties to achieve the objectives.

7. UNESCO: Convention on Wetlands (Ramsar) - 1975 (UNESCO, 1994): The Convention on Wetlands of International Importance, especially for Waterfowl Habitat (simply known as The Convention on Wetlands or the Ramsar Convention) was first established in 1971 in Ramsar, Iran, but was amended in 1982 and again in 1987. South Africa ratified the agreement in 1997. The main focus is on conserving wetlands, their ecological functioning (especially as regulating water regimes) and associated biodiversity. It notes that wetlands constitute a resource of great economic, cultural, scientific, and recreational value, the loss of which would be irreparable. On signing the Convention, contracting parties are required to designate at least one wetland to be included in the List (of designated convention wetlands). The Convention is divided into twelve articles to guide contracting parties on their duties and responsibilities. BRs are briefly recognised as partners of the Convention's endeavours.

8. Convention on International Trade in Endangered Species (CITES) - 1975 (CITES, 1973): CITES recognises the ecological and economic value of biodiversity, especially with regard to those species that are subject to trade and that are endangered. The Convention is committed to protecting these species, and acknowledges that international cooperation is critically important for achieving this. It aims to regulate and/or control the trade in the threatened species (or parts thereof) of biodiversity. There are three appendices for categorising the lists of species: Appendix I¹⁹, II²⁰, and III²¹. Although the first text for the Convention was proposed in 1963, it was only agreed upon by governments in an IUCN resolution in 1973, and entered into force in 1975, which is when South Africa ratified the Convention. There are twenty-five articles to guide contracting parties in all aspects of the Convention

9. UNEP: Convention on Migratory Species (CMS) - (CMS, 1979): This Convention is also known as the Bonn Convention. Although the CMS was established in 1979, it only came into force in 1983. The CMS recognises the importance of protecting migratory wild fauna throughout their ranges, including cross-boundary migration, thus requiring international cooperation. The main purpose of the CMS is to protect and conserve migratory species for the good of mankind for current and future generations. The CMS has established two listing categories: Appendix I²², and II²³. The CMS is divided into twenty articles that guide contracting parties.

10. African Convention on the Conservation of Nature and Natural Resources - 2012 (IUCN, 2004): This convention was first formulated in Algiers in 1968 (the RSA was not a signatory to this version), but at the start of the 21st Century, for various reasons, it was deemed necessary to make it a more relevant and contemporary convention. As a result it was refurbished in Maputo in 2003. Through its adoption by the African Union, it seems the RSA is now a signatory to the Convention. This convention is relevant to the Biosphere Reserve Programme, as the African Continent is rich in biodiversity (containing six of the 25 globally recognised biodiversity hotspots) and the Convention aims to protect and conserve (including for sustainable use) nature and the natural resources of Africa. There are forty-three articles in the

17 In 1997, the Kyoto Protocol set individual, legally binding targets for industrialised countries prepared to take positive steps to curb emissions of carbon dioxide and other GHGs from sources within their remit.

18 Non-Annex 1 countries are made up mostly of developing countries vulnerable to the impacts of climate change and/or which are economically vulnerable because they are greatly dependent on income from fossil fuels.

19 CITES Appendix I lists species threatened with extinction, for which CITES allows trade only under stringent circumstances.

20 CITES Appendix II species are not necessarily threatened now with extinction, but may become so unless trade is closely controlled.

21 CITES Appendix III states that a party to the Convention can proactively place certain species in Appendix III and thereby request other parties for assistance in controlling their trade.

22 CMS Appendix I lists migratory species that are classified as endangered and where urgent international cooperation is necessary to address the issue.

23 CMS Appendix II lists other species that require or would benefit significantly from international agreements under the Convention.

Convention to guide parties. These articles make special reference to some aspects of the Convention including, but not limited to: land and soil; water; vegetation cover; species and genetic diversity; protected areas; conservation areas; trade; sustainable development; research; capacity building and traditional knowledge.

APPENDIX 2: NATIONAL PRIORITIES

Socio-Economic related strategies/programmes

1. National Development Plan (NDP): 2030 (NPC, 2011): The main focus of the NDP is for South Africa to eliminate poverty and reduce inequality by 2030. It provides a broad strategic framework aimed at all South Africans to facilitate the desired change towards this overarching goal.

2. National Strategy for Sustainable Development and Action Plan 1 (NSSD 1) 2011-2014 (DEA, 2011): This strategy is based on the National Framework for Sustainable Development (NFSD), but has been marginally adapted. In essence, it states that *South Africa aspires to be a sustainable and self-reliant nation for current and future generations*. The development of the NSSD 1 has been a three-phase process, which began with the development of the NFSD, which was adopted by Cabinet in June 2008. It will culminate in 2015, when the evaluation of the progress made in the implementation of the NSSD 1 will inform the NSSD 2 (2015–2020). This is not yet available in the public domain.

3. Strategic Government Outcomes (DPME, 2010): In 2010 the South African Cabinet adopted the twelve Government Outcomes. The purpose of the Outcomes is to guide South Africa towards measurable performance and accountable delivery in national development. Each outcome has several outputs and associated measures. The most relevant outcomes are: Outcome 8. Sustainable human settlements and improved quality of household life; and Outcome 10. Protection and enhancement of environmental assets and natural resources.

4. Framework of the New Economic Growth Path (NGP) (RSA Gov., 2010a): The NGP focuses solely on job creation for the country. The target is to create five million new jobs by 2020. The principal element of the NGP is an extensive investment in infrastructure as a critical driver of jobs across the economy. The NGP identifies five 'job drivers', the fields where the most employment can be created. There is no specific commitment to biodiversity conservation or sustainable development, but a green economy is identified as one of the job drivers. A Green Economy Accord is one of five accords under the NGP.

5. MINTECH Working Group 6 (WG6) (DEA, 2015b): The main focus is to address job creation in the environmental sector. The ToR of the WG6 are aligned with the national priorities, e.g. the NDP and the RSA Constitution, and the international sustainable development obligations, e.g. The Rio Declaration on Environment and Development principles (where humans have a right to a healthy and productive life in harmony with nature). WG6 interventions, in particular EPWPs, are aimed at addressing the RSA's high unemployment levels.

6. Rural Development and Land Reform (DRDLR) Strategic Plan 2015-2020 (DRDLR, 2015): Guided by the Medium Term Strategic Framework (MTSF), which is the first five-year cycle of the NDP, the vision for rural development is to have equitable, sustainable rural communities by achieving social cohesion and development. The focus is on agrarian transformation, in respect of patterns of ownership and control of land and associated activities. It is a key priority of government. The Biosphere Reserve Programme is not considered, despite most BRs comprising large tracts of rural communities, and being very much involved in these areas. The BRs are committed to working with the rural people. There are opportunities for future collaboration and partnerships.

7. Department of Social Development (DSD) Strategic Plan: 2010-2015 (DSD, 2010): The DSD Strategic Plan has a vision to establish a "*caring and integrated system of social services that facilitates human development and improves the quality of life*". It consists of five programmes, which focus on: administration; comprehensive social security; policy development, review and implementation support for welfare services; community development; and strategy and governance.

8. Department of Agriculture, Forestry and Fisheries (DAFF) Strategic Plan: 2013/14-2017/18 (DAFF, 2013): The DAFF Strategic Plan is aligned to the NDP and the Strategic Government Outcomes. The focus is on developing and sustaining economic growth (and development), job creation, rural development, sustainable use of natural resources and food security. There is consideration of the challenges faced by the agriculture, forestry and fisheries sectors, e.g. climate change and environmental degradation.

9. Department of Arts and Culture (DAC) Strategic Plan 2011–2016 (DAC, 2010): The vision for the DAC is *to develop and preserve South African culture to ensure social cohesion and nation building*. The plan is divided into programmes and sub-programmes. The programmes specifically focus on the performing arts, SA's official languages, cultural development, heritage promotion, and archives and library services. The plan is aligned with the Strategic Government Outcomes. Surprisingly, there is no reference made to natural heritage and the role biodiversity and ecosystems services play in culture and art.

10. Department of Mineral Resources Strategic Plan 2011–2014 (DMR, 2010): In this Strategic Plan, which is now outdated (but which was the most recent that could be sourced), the DMR *aims to be a leader in the transformation of South Africa through economic growth and sustainable development by 2025*. The mission for the DMR is to *promote and regulate the Minerals and Mining Sector for transformation, growth and development and to ensure that all South Africans derive sustainable benefit from the country's mineral wealth*. The plan has a strategic objective (under Programme 4) to promote sustainable resource use and management, with the objective of ensuring improvement in mine environmental management practices and rehabilitating ownerless and derelict mines. Naturally this overlaps with BRs, but there is insufficient explanation provided to properly understand it in the context of Biosphere Reserve Programme.

Environmental, Biodiversity and Conservation related strategies/programmes

11. Department of Environmental Affairs Strategic Plan 2015/16–2019/20 (DEA, 2015c): The Plan is also aligned with NDP and the Strategic Government Outcomes. It aims to achieve *'a prosperous and equitable society living in harmony with our natural resources'*, by *'providing leadership in environmental management, conservation and protection towards sustainability for the benefit of South Africans and the global community'*. The Plan takes cognisance of the threats to biodiversity. The DEA oversees all environmental programmes, including the Biosphere Reserve Initiative. The DEA Strategic Plan 2014-2019 (DEA, 2014) makes reference to the Biosphere Reserve Programme in several places but, surprisingly, in the DEA Strategic Plan 2015/16 – 2019/20 (DEA, 2015c) the Biosphere Reserve Programme does not feature anywhere in the document.

12. Department of Water Affairs (DWA) Strategic Plan: 2013/14–2017/18 (DWA, 2013): The DWA has a simple but effective vision: *Safe water for all forever*, and the mission is stated as: *Effectively manage the nation's water resources to ensure equitable and sustainable socio-economic development and universal access to water*. The Plan acknowledges that the RSA is a water-scarce country and that water needs to be conserved if the nation's developmental needs are to be met and the threats to quality water must be addressed. Several innovative programmes have been identified, e.g. Adopt a river.

13. National Biodiversity Strategy and Action Plan (NBSAP) 2015-2025 (DEA, 2015a): As a signatory of the Convention of Biodiversity (CBD), South Africa is obligated to develop a NBSAP. NBSAPs provide a platform for contracting parties to accomplish the objectives of the CBD (in particular the CBD Strategic Plan 2011-2020 and the Aichi Targets). The RSA NBSAP, currently in its final draft, has been revised for the period 2015–2025. The revised NBSAP has determined the priorities for biodiversity management in South Africa. These are aligned with the CBD, as well as to South Africa's development priorities (i.e. NDP and NGP). The vision is to *conserve, manage and sustainably use biodiversity to ensure equitable benefits to the people of South Africa, now and in the future*. The NBSAP makes reference to the Biosphere Reserve Programme.

14. National Protected Area Expansion Strategy (NPAES) (RSA Gov., 2010b): The NPAES was approved for implementation in 2009. This Strategy was developed because South Africa's protected area network was found to be significantly inadequate to sustain biodiversity and ecological processes. The main aim of the NPAES is to achieve cost-effective protected area expansion for ecological sustainability and increased resilience to climate change. The Strategy has established quantitative targets (ecosystem areas) for expansion, provides maps of the most important areas identified, and makes recommendations on how to achieve expansion. The NPAES informs the provincial PAESs. There is a variety of management frameworks for protected area expansion sites, e.g. co-management, contract and biodiversity stewardship agreements. This ensures that land remains in the hands of its owners rather than being transferred to a protected area agency. Priority areas for PAESs are determined according to importance, urgency, ability to meet biodiversity thresholds (for terrestrial or freshwater ecosystems), and maintaining ecological processes or climate change resilience.

15. Biodiversity Policy and Strategy for South Africa: Strategy on Buffer Zones for National Parks (DEA, 2012): In 2012, 3.8 million ha. of the 7.2 million ha. of protected area (terrestrial ecosystems) in the RSA were ascribed to National Parks. National Parks (NP) represent the highest status of protected area in South Africa. Their main functions are to protect biodiversity and ecosystem integrity, as well as to provide spiritual, scientific, educational, and tourism opportunities which are environmentally compatible. All National Parks are managed by South African National Parks (SANParks). South Africa's biodiversity is supported further by a provincial protected area system. In light of the threats and pressures (such as loss of biodiversity outside the NP, encroaching developments, and poaching), the concept of the Buffer Zone Strategy was developed. In the RSA Biosphere Reserve Programme, there are several BRs that have NPs as part of their core zone.

16. National Climate Change Response (NCCR) White Paper (RSA Gov., 2011): Climate change is a daunting actuality that threatens the livelihoods of all South Africans. It is in this context that this White Paper has been developed. The NCCR paper is based on several documents, including the UNFCCC. The National Objective informs the guiding principles, where the aim is for the RSA to build climate resilience and the economy, as well as manage the transition to a cli-

mate-resilient, equitable and internationally competitive lower-carbon economy and society. It has been formulated in the context of national priorities that relate to sustainable development, job creation, and improved environmental health in particular. The sections on adaption and mitigation measures are critical for success in addressing climate change.

APPENDIX 3: ROLES AND RESPONSIBILITIES

Entity	Roles and Responsibilities
Department of Environmental Affairs	<ul style="list-style-type: none"> • lead and coordinate interactions with the UNESCO Biosphere Reserve Programme. • liaise and facilitate links among the UNESCO Secretariat, all spheres of government across departments, and the BRs. • provide overall guidance and strategic direction in the RSA. • coordinate, provide support to, and chair the SA National Biosphere Reserve Committee. • guide, coordinate and oversee overall implementation of the Biosphere Reserve Programme, including the Strategy, and monitor progress. • collaborate in the investigation, facilitation, supporting and guiding of the mobilisation of core budgets and project funding. • mobilise, market, educate, engage and obtain commitments (e.g. MoUs) regarding the Biosphere Reserve Programme across departments critical for the Programme, including assistance in addressing complex threats. • collaborate in the mobilisation, marketing, education, engagement and obtaining of commitments (e.g. MoUs) regarding the Biosphere Reserve Programme from provinces and municipalities concerned. • coordinate and analyse reports from all spheres of government across departments and the UNESCO Biosphere Reserve Programme supplied to the provinces/BRs, and from the provinces/BRs, and feedback to those entities. • represent BRs' interests and needs at relevant national level working groups and forums. • guide, coordinate and support policy and legislation development. • provide guidance and support regarding the UNESCO Biosphere Reserve nomination process, including the provision of final endorsement. • ensure collaboration with other countries in case of a transboundary BR.
Provincial Administration	<ul style="list-style-type: none"> • provide overall guidance and strategic direction in province. • be an active member of the SA National Biosphere Reserve Committee. • actively participate in and support provincial forum. • facilitate, guide, coordinate and oversee overall implementation of the Programme within the respective province, and monitor progress. • collaborate in the investigation, facilitation, supporting and guiding of the mobilisation of core budgets and project funding. • mobilise, market, educate, engage and get commitments (e.g. MoUs) regarding the Biosphere Reserve Programme across provincial departments and municipalities (visibility, spatial planning, advocating best practices, tourism, cross- and potential conflicting interests). • promote the role of BRs in sustainable development and improving the livelihoods of people on the ground. • facilitate and coordinate reporting to and from BRs. • guide and support scoping for, and endorse the UNESCO Biosphere Reserve nomination process. • provide advice and technical support to the BR structures and attend meetings as and when appropriate. • represent BRs' interests and needs at relevant national and provincial level working groups and forums. • mainstream, promote and enhance the benefits and opportunities that BRs offer within the province (including tourism, economic development potential and social benefit programmes). • ensure collaboration across district municipalities in case of cross-DM BRs. • ensure collaboration with other provinces in case of cross-provincial BRs.

Entity	Roles and Responsibilities
Municipalities (District and Local)	<ul style="list-style-type: none"> • acknowledge value of BRs towards supporting municipal goals and objectives. • engage accordingly, and actively assist and support implementation (e.g. integrate BR within planning). • be an active member of the BR stakeholder group and/or Provincial Forum. • SALGA representation at SA National Biosphere Reserve Committee meetings. • mobilise, educate, engage and get commitments across departments. • network with BRs on mutual interests, identify and endorse projects, and advise and guide (e.g. planning, resilience and socio-economic development). • collaborate in the investigation, facilitation, supporting and guiding of the mobilisation of core budgets and project funding. • in co-ordination with province, assist in the education of town and district residents and decision makers regarding Biosphere Reserves. • ensure compliance of activities and developments in the Biosphere Reserves.
Biosphere Reserves	<ul style="list-style-type: none"> • ensure and support, within operational and financial means available, effective and efficient implementation of the Biosphere Reserve Programme, including sustainable development principles, on the ground. • implement an approved management plan in accordance with the Biosphere Reserve Programme. • partner with government agencies to promote compliance with environmental laws and regulations. • improve internal governance and management to ensure ongoing organisational development and alignment with UNESCO's Biosphere Reserve Framework. • promote appropriate and effective representation on its board. • develop and maintain a BR forum with inclusive stakeholder representation. • promote awareness of the Biosphere Reserve Programme and BR concept, actively engage a wide set of role-players and develop partnerships. • source project and operational funding. • be a "learning centre" – M&E, and sharing successes and lessons. • fulfil reporting requirements and attend Biosphere Reserve meetings.
Management Committee of the National Biosphere Reserve Committee	<ul style="list-style-type: none"> • expedite resolutions arising from the SA National Biosphere Reserve Committee in between meetings. • coordinate and guide decisions in between SA National Biosphere Reserve Committee meetings.
South African National Biosphere Reserve Committee	<ul style="list-style-type: none"> • provide overall guidance and strategic direction to BRs in the RSA. • guide, coordinate and oversee overall implementation of the BRs and monitor progress. • provide guidance and direction with regard to collaboration in the investigation, facilitation, supporting and guiding of the mobilisation of core and project funding. • provide guidance and direction with regard to the mobilisation, marketing, education, engagement and obtaining of commitments (e.g. MoUs) regarding the Biosphere Reserve Programme across departments critical for the Programme, including assistance in addressing complex threats. • provide guidance and direction with regard to the mobilisation, marketing, education, engagement and obtaining of commitments (e.g. MoUs) regarding the Biosphere Reserve Programme from provinces and municipalities concerned. • provide guidance and support regarding the UNESCO Biosphere Reserve nomination process.

Entity	Roles and Responsibilities
Provincial Forums	<ul style="list-style-type: none"> • guide, coordinate, support and oversee implementation of the BRs and monitor progress within the province concerned. • provide guidance, support and direction with regard to regional collaboration in the investigation and facilitation of the mobilisation of core and project funding. • provide guidance and direction with regard to the regional mobilisation, marketing, education, engagement and obtaining of commitments (e.g. MoUs) regarding the Biosphere Reserve Programme to national departments critical for the Programme, including assistance in addressing complex threats. • provide guidance and direction with regard to the regional mobilisation, marketing, education, engagement and obtaining of commitments (e.g. MoUs) regarding the Biosphere Reserve Programme from provinces and municipalities concerned. • provide regional guidance and support regarding the UNESCO Biosphere Reserve nomination process.
BR Boards	<ul style="list-style-type: none"> • guide, coordinate and oversee implementation and management of the BR and monitor progress. • provide strategic guidance and direction to the BR concerned. • investigate, facilitate, support and guide the mobilisation of core and project funding. • provide guidance and direction with regard to the BR mobilising, marketing, educating, engaging and obtaining commitments (e.g. MoUs) regarding the Biosphere Reserve Programme across departments critical for the Programme, including assistance in addressing complex threats. • provide guidance and direction with regard to the BR mobilising, marketing, educating, engaging and obtaining commitments (e.g. MoUs) regarding the Biosphere Reserve Programme from provinces and municipalities concerned.

(Footnotes)

1 The UNEP defines the green economy as a "system of economic activities related to the production, distribution and consumption of goods and services that result in improved human well-being over the long term, while not exposing future generations to significant environmental risks and ecological scarcities" (NPC, 2011).

2 There are several categories of protected areas (e.g. national parks and special nature reserves), all of which are protected by law. The difference between protected areas and conservation areas is that protected areas are all formally protected while conservation areas are not. Protected areas are imperative for ecological sustainability and adaptation to climate change.

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