



GEF-6 REQUEST FOR PROJECT ENDORSEMENT/APPROVAL

PROJECT TYPE: FULL-SIZED PROJECT

TYPE OF TRUST FUND: GEF TRUST FUND

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PART I: PROJECT INFORMATION

Project Title: Unlocking biodiversity benefits through development finance in critical catchments			
Country(ies):	South Africa	GEF Project ID: ¹	9073
GEF Agency(ies):	DBSA	GEF Agency Project ID:	
Other Executing Partner(s):	Departmental of Environmental Affairs, SANBI	Submission Date:	2016-12-04
GEF Focal Area (s):	Biodiversity	Project Duration (Months)	60
Integrated Approach Pilot	IAP-Cities <input type="checkbox"/> IAP-Commodities <input type="checkbox"/> IAP-Food Security <input type="checkbox"/>		Corporate Program: SGP <input type="checkbox"/>
Name of Parent Program	[if applicable]	Agency Fee (\$)	648 165

A. FOCAL AREA STRATEGY FRAMEWORK AND OTHER PROGRAM STRATEGIES²

Focal Area Objectives/Programs	Focal Area Outcomes	Trust Fund	(in \$)	
			GEF Project Financing	Co-financing
BD-4 Program 10	Outcome 10.1 Biodiversity values and ecosystem service values integrated into accounting systems and internalized in development and finance policy and land-use planning and decision-making.	GEFTF	7 201 835	48 694 677
Total project costs			7 201 835	48 694 677

B. PROJECT DESCRIPTION SUMMARY

Project Objective: To develop policy and capacity incentives for mainstreaming biodiversity and ecosystems values into national, regional and local development policy and finance: application demonstrated in two water catchments

Project Components/Programs	Financing Type ³	Project Outcomes	Project Outputs	Trust Fund	(in \$)	
					GEF Project Financing	Confirmed Co-financing
Component 1: Enabling environment is strengthened for improving water security through the integration of biodiversity and ecosystem services in the water value chain.	TA	Outcome 1.1 Natural capital accounts developed to enable policy, planning and decision-making in favour of ecological infrastructure	1.1.1 Natural capital accounts are developed at the national level and the catchment level, and tested for informing planning, management and monitoring of ecological infrastructure for water security 1.1.2 Capacity, institutional arrangements and time series data to enable regular production of relevant NC accounts are established or strengthened	GEFTF	987 638	882 858
	TA	1.2 Relevant policy frameworks, regulatory	1.2.1. National water policies, strategies and regulatory instruments applicable to	GEFTF	1 115 518	681 484

¹ Project ID number remains the same as the assigned PIF number.

² When completing Table A, refer to the excerpts on [GEF 6 Results Frameworks for GETF, LDCF and SCCF](#).

³ Financing type can be either investment or technical assistance.

		instruments and planning tools enable the integration of biodiversity and ecosystem services into water sector planning, finance and development	water, such as the National Water and Sanitation Strategy (3rd Edition NWRS) and the National Water Security Plan, reflect the importance of ecological infrastructure for water security 1.2.2. Planning applicable to water resource management and water resource development supported to integrate biodiversity and ecological infrastructure considerations for water security			
	TA	1.3 Mechanisms for rehabilitation and ongoing maintenance of ecological infrastructure are in place and operationalized	1.3.1. The management of water-related ecological infrastructure is progressively being incorporated into the cost of catchment management in line with the Water Pricing Strategy and other new and emerging policies and strategies 1.3.2. Method/tool is developed for the finance sector to integrate natural capital, particularly risks, impacts and dependencies on ecological infrastructure, into water infrastructure finance	GEFTF	418 311	8 444 254
Component 2: Application of policies and financial mechanisms in the water value chain improves water security in critical catchments.	TA	2.1 Enhanced organizational capacity and investment in ecological infrastructure in the Berg and Breede catchments have improved water resource management	2.1.1. Capacity within in the Breede & Riviersonderend catchments to identify, plan, budget for, assess benefits of and manage ecological infrastructure investments has been strengthened 2.1.2 Full costs of rehabilitation and maintenance of water-related ecological infrastructure and associated compliance monitoring and enforcement (CME) are determined in order to support the mainstreaming of ecological infrastructure into the financing of water resource management and development	GEFTF	1 046 148	14 394 119
	TA	2.2 Enhanced organizational capacity and investment in ecological infrastructure in the Greater uMngeni catchment have improved water resource management	2.2.1 Capacity within in the Greater uMngeni catchment to identify, plan, budget for, assess benefits of and manage ecological infrastructure investments has been strengthened 2.2.2 Full costs of rehabilitation and maintenance of water-related ecological infrastructure and	GEFTF	1 732 367	18 933 859

			<p>associated CME are determined in order to support the mainstreaming of ecological infrastructure into the financing of water resource management and development</p> <p>2.2.3. Planning, prefeasibility, and licensing for infrastructure development has addressed the management and mainstreaming of ecological infrastructure, using examples such as the uMkhomazi Smithfield Dam, Spring Grove, Kamberg and Hlatikulu</p>			
Component 3: Social learning, credible evidence, and knowledge management improves the integration of biodiversity and ecosystem services into the water value chain	TA	3.1. Project impact and sustainability is enhanced through targeted engagement with key stakeholders	3.1.1. Coordinated knowledge management and social learning for change enhances project impact and sustainability	GEFTF	1 243 521	2 415 081
	TA	3.2 Evidence of the value of ecological infrastructure for water security is credible, salient and relevant	<p>3.2.1. Co-generated evidence base and impact assessment of pilot project interventions is generated, packaged appropriately and shared</p> <p>3.2.2. Monitoring and evaluation information enhances project implementation, learning and evidence</p>	GEFTF	300 362	2 943 022
Subtotal					6 843 865	48 694 677
Project Management Cost (PMC) ⁴				(select)	357 970	
Total project costs					7 201 835	48 694 677

⁴ For GEF Project Financing up to \$2 million, PMC could be up to 10% of the subtotal; above \$2 million, PMC could be up to 5% of the subtotal. PMC should be charged proportionately to focal areas based on focal area project financing amount in Table D below.

C. CONFIRMED SOURCES OF CO-FINANCING FOR THE PROJECT BY NAME AND BY TYPE

Please include evidence for co-financing for the project with this form.

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Amount (\$)
Recipient government	Breede Gouritz CMA	In kind	75 645
CSO	CMRA	In kind	308 861
GEF Agency	DBSA	In kind	7 000 000
Recipient government	DEA NRM	In kind	28 636 948
Recipient government	eThekweni	In kind	4 615 384
Private Sector	NBI	In kind	731 088
Recipient government	SANBI	In kind	3 407 418
Recipient government	Stats SA	In kind	59 840
Other	UKZN (CWRR)	In kind	141 534
Other	UNEP	In kind	230 000
CSO	WESSA	In kind	122 937
CSO	WISA	In kind	37 942
Recipient government	WRC	In kind	2 261 538
CSO	WWF	In kind	1 065 540
TOTAL			48 694 677

D. TRUST FUND RESOURCES REQUESTED BY AGENCY(IES), COUNTRY(IES) AND THE PROGRAMMING OF FUNDS

GEF Agency	Trust Fund	Country Name/Global	Focal Area	Programming of Funds	(in \$)		
					GEF Project Financing (a)	Agency Fee ^{a)} (b) ²	Total (c)=a+b
DBSA	GEFTF	South Africa	Biodiversity	(select as applicable)	7 201 835	648 165	7 850 000
Total Grant Resources					7 201 835	648 165	7 850 000

a) Refer to the Fee Policy for GEF Partner Agencies

E. PROJECT'S TARGET CONTRIBUTIONS TO GLOBAL ENVIRONMENTAL BENEFITS⁵

Provide the expected project targets as appropriate.

Corporate Results	Replenishment Targets	Project Targets
1. Maintain globally significant biodiversity and the ecosystem goods and services that it provides to society	Improved management of landscapes and seascapes covering 300 million hectares	Water-related ecosystems services maintained in 200 000 hectares of riverine ecosystems
2. Sustainable land management in production systems (agriculture, rangelands, and forest landscapes)	120 million hectares under sustainable land management	<i>hectares</i>
3. Promotion of collective management of transboundary water systems and implementation of the full range of policy, legal, and institutional reforms and investments contributing to sustainable use and maintenance of ecosystem services	Water-food-ecosystems security and conjunctive management of surface and groundwater in at least 10 freshwater basins;	<i>Number of freshwater basins</i>
	20% of globally over-exploited fisheries (by volume) moved to more sustainable levels	<i>Percent of fisheries, by volume</i>
4. Support to transformational shifts towards a low-emission and resilient development path	750 million tons of CO _{2e} mitigated (include both direct and indirect)	metric tons
5. Increase in phase-out, disposal and reduction of releases of POPs, ODS, mercury and other chemicals of global concern	Disposal of 80,000 tons of POPs (PCB, obsolete pesticides)	<i>metric tons</i>
	Reduction of 1000 tons of Mercury	<i>metric tons</i>
	Phase-out of 303.44 tons of ODP (HCFC)	<i>ODP tons</i>
6. Enhance capacity of countries to implement MEAs (multilateral environmental agreements) and mainstream into national and sub-national policy, planning financial and legal frameworks	Development and sectoral planning frameworks integrate measurable targets drawn from the MEAs in at least 10 countries	<i>Number of Countries:</i>
	Functional environmental information systems are established to support decision-making in at least 10 countries	<i>Number of Countries:</i>

F. DOES THE PROJECT INCLUDE A “NON-GRANT” INSTRUMENT? NO

(If non-grant instruments are used, provide an indicative calendar of expected reflows to your Agency and to the GEF/LDCF/SCCF Trust Fund) in Annex D.

⁵ Update the applicable indicators provided at PIF stage. Progress in programming against these targets for the projects per the *Corporate Results Framework* in the [GEF-6 Programming Directions](#), will be aggregated and reported during mid-term and at the conclusion of the replenishment period.

PART II: PROJECT JUSTIFICATION

A. DESCRIBE ANY CHANGES IN ALIGNMENT WITH THE PROJECT DESIGN WITH THE ORIGINAL PIF⁶

Deviation from the PIF

The project objective remains as envisaged in the PIF, namely “to develop policy and capacity incentives for mainstreaming biodiversity and ecosystem values into national, regional and local development policy and finance in the water sector, demonstrated in two water catchments” (to result in what is referred to as the GEF alternative)⁷. The overarching goal that this project will contribute towards is that “integrating biodiversity and ecosystem services into planning, finance and development in the water sector improves water security”. The project target in the PIF was “Ecosystems services maintained in over 200,00* hectares [*assumed to be 200 000 ha] of riverine ecosystems by removal of alien invasive plants with heavy water use”. Following extensive stakeholder discussion, including with the Project Steering Committee, during the Project Preparation Grant (PPG), this target has been revised to “Water-related ecosystems services maintained in over 200 000 hectares of riverine ecosystems by removal of invasive alien plants, rehabilitation of riparian zones and dryland and wetland rehabilitation”. The revised target is more specific and better reflects the work needed to maintain ecosystem services over 200 000 hectares.

In seeking to unlock biodiversity benefits through development finance in critical catchments, this project still aims to develop policy and capacity incentives for mainstreaming biodiversity and ecosystems values into national, regional and local development policy and finance, with application demonstrated in two water catchments. There are however two core areas of deviation from the original PIF. Deviations from the PIF was substantially informed through stakeholder engagements undertaken during the design process as well as guided by the project steering committee and the PPG working group consisting of the DEA, DBSA and SANBI.

The first is a change to one of the project catchments proposed in the PIF. The PIF included the Kouga/Kromme and Berg River catchments which serve Port Elizabeth (Nelson Mandela Bay) and the City of Cape Town respectively. Following discussion in the DEA, DBSA, SANBI project design working group established to oversee the PPG phase, pursuant to a footnote in the PIF document which indicated that the selected catchments would be subject to finalization in the PPG and maybe substituted, it was agreed to revisit the selection of catchments for the project:

- **The criteria used for selection of project catchments in the PIF were expanded** from the following three in the PIF, (i) importance for water and estuarine biodiversity, (ii) economic importance and (iii) existence of fledging catchment forums, to include the following: (a) Importance for biodiversity and ecological infrastructure; (b) Water stressed catchment; (c) Infrastructure investments planned; (d) Linkages with national initiatives and ensuring opportunities for social justice and increased equity and addressing urgent needs of the poor; (e) Localised water resource management institutions (1) established & (2) have capacity; (f) Stakeholder engagement platforms; (g) Provincial and Municipal structures capacitated; (h) Potential for catalysing and leveraging in investors /funders in infrastructure investments across the infrastructure development value chain; (i) Financially supportive water use base; (j) Civic stability and regulatory compliance; (k) Alignment with ongoing or new studies and initiatives
- **Following a two stage analysis of South Africa’s water management areas and the tertiary catchments within those water management areas against these criteria, it was recommended that the Berg-Breede system in the Western Cape and the uMngeni-uMkhomazi (Greater uMngeni) system in KwaZulu-Natal be selected as the project focal areas** (Figure 1). This expands the focus in the PIF from the Berg catchment to the Berg-Breede system, and substitutes the uMngeni-uMkhomazi (Greater uMngeni) for the Kromme/Kouga catchments.

⁶ For questions A.1 –A.7 in Part II, if there are no changes since PIF, no need to respond, please enter “NA” after the respective question.

⁷ The project has interpreted “policy” as policies at all levels (including national, regional and local), “capacity” as institutions strengthened, individual capacity built, tools developed, etc. and “incentives” using a broad interpretation of incentives as interventions that encourage a shift or change towards the mainstreaming of biodiversity. “Mainstreaming” is understood in terms of the GEF definition of mainstreaming; biodiversity and ecosystems values as described above; “national, regional and local” includes all levels, including national, provincial, catchment, district and local. “Development policy and finance” is described as institutional mechanisms that impact on the management of water and land.

- **Berg-Breede:** There are clear biodiversity hotspots within the catchments including strategic water source areas. The Berg River Improvement Plan has been extended into the Breede system, and the augmentation of Voëlvelei Dam as well as the possibilities within the Riviersonderend (in the Breede River system) expand on opportunities to improve water-related ecosystem services through invasive alien tree species removal. Improved water availability in the greater Breede could support the inter-basin transfer via Mitchell's Pass. While the Berg-Olifants Catchment Management Agency (CMA) establishment processes are slightly delayed, the Breede Gouritz CMA is currently reviewing its CMS and is actively engaging stakeholders on this. The mix of water use from industrial to agricultural provides a useful basis for the implementation of the Waste Discharge Charge System. The WRC study on natural capital accounts (NCA) in the Breede will be supportive of bringing catchment level accounting into the planning regimes of the water management area.
- **Greater uMngeni:** The previous SANBI and WWF work in the uMngeni provides an invaluable base for this project with the opportunities to transfer lessons learned from the uMngeni experience to the uMkhomazi catchment. As opposed to the uMngeni River, the uMkhomazi catchment is relatively underdeveloped. The development of the dam at Smithfield is in an early stage which would provide a meaningful opportunity to engage prior to construction and to lay an innovative management foundation within the catchment. The support from institutions and stakeholders is strong despite some of the municipal institutions having some capacity challenges. The CMA processes in this water management area are considerably advanced and the Proto-CMA has capacity to engage. The UEIP study and WRC study on NCA will be supportive of developing NCA in this catchment.

This recommendation was approved by the Project Steering Committee and is documented in a PPG report.

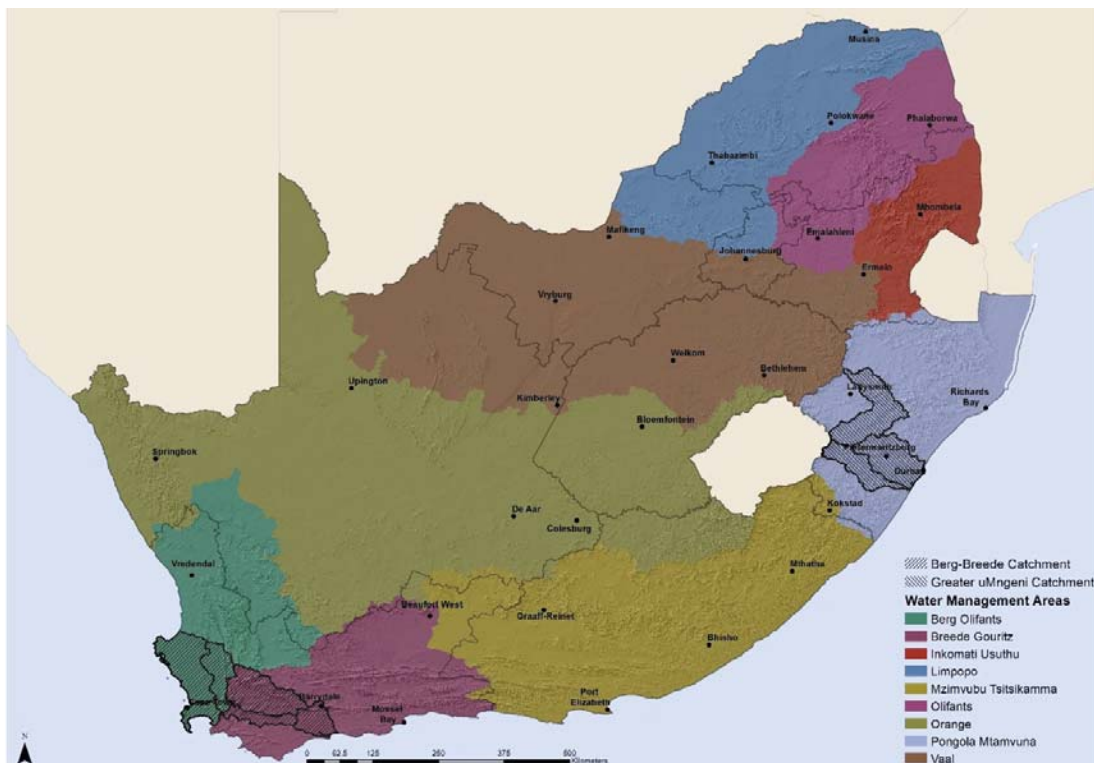


Figure 1. Water management areas in South Africa for which Catchment Management Agencies are established, overlaid by the Berg-Breede and Greater uMngeni demonstration catchments

The second is the streamlining of the structural design of the project for improved implementation and project management. This is the result of a comprehensive theory of change exercise and stakeholder engagement through which evolved a deeper understanding of the barriers and what was required to address these and meet the project objective. This did not however result in a significant deviation in the content of the project, only a streamlining of the structural design and the addition of a third component to more explicitly address aspects crucial to project success and sustainability. The design of this third component drew on recent GEF policy guidance on knowledge management and recognised the importance of social learning to implementation success and long-term

sustainability. The component has two outcomes that give emphasis to social learning, knowledge management, coordination and generation of credible evidence that is regarded as critical for the project's overall success. The table below summarises the core changes in alignment between the PIF and CEO Endorsement. These changes and how the project will be implemented are described further in response to question A1 to A7 below.

Table II.A. Summary of core changes from PIF to CEO Endorsement

PIF	Project Document	Rationale for change
Component 1. Capacity emplaced: institutional framework, political will, skills and tools culminate in South Africa's road map to wide-scale testing of Natural Capital Accounting in the water sector	Component 1: Enabling environment for improving water security through the integration of biodiversity and ecosystem services is strengthened.	Research in the PPG phase highlighted the need for broader institutional interventions at the national enabling level to enable more targeted interventions in development finance. For example, the PIF emphasized the opportunity to unlock finance for biodiversity through the Water Pricing Strategy. The implementation of the Water Pricing Strategy requires policy and institutional strengthening before the financial and biodiversity benefits can be realized. This Component was therefore restructured to address the three main barriers that hinder the integration of biodiversity and ecosystem services into current approaches to improve water security. These barriers are described in A1.
<i>Outcome 1: Institutional framework designed to promote testing of the application of Natural Capital Accounting (NCA) in the water sector</i>	<i>Outcome 1.1 Natural capital accounts developed to enable policy, planning and decision-making in favour of ecological infrastructure</i>	<i>The PIF had two outcomes focused on Natural Capital Accounts (PIF outcomes 1 and 2). For the purposes of streamlined project management, the project design process resulted in these outcomes being merged into one revised outcome 1.1 with two outputs. These outputs, namely: 1.1.1 "Natural capital accounts are developed at the national level and the catchment level, and tested for informing planning, management and monitoring of ecological infrastructure for water security", and 1.1.2 "Capacity, institutional arrangements and time series data to enable regular production of relevant NC accounts are established or strengthened" fully reflect the PIF outcomes and include relevant PIF outputs, as elaborated below in A3.</i>
<i>Outcome 2: Skills and financial resources for wide-scale testing of Natural Capital Accounting in the water sector provided</i>		
<i>Outcome 3: Policies and financial mechanisms</i>	<i>Outcome 1.2 Relevant policy frameworks, regulatory instruments and institutions enable the integration of biodiversity and ecosystems services into water sector planning, finance and development</i>	<i>Once again, streamlined project implementation and management as well the need for greater emphasis on interventions in the enabling policy and financial environment for this project resulted in PIF outcome 3 split being split into:</i> <ul style="list-style-type: none"> <i>Revised outcome 1.2: responds to the need for national enabling interventions to lay foundations for targeted interventions in development finance, such as through the water tariff. However the implementation of the water tariff through the Water Pricing Strategy requires policy and institutional strengthening before the financial and biodiversity benefits can be realized. Included in revised outcome 1.2 are two outputs focused on strengthening necessary policy and planning processes, into which an updated version of PIF output 3.4 has been integrated. These outputs are important enablers for interventions in revised outcomes 1.3, 2.1 and 2.2.</i> <i>Revised outcome 1.3 integrates and deepens PIF outputs 3.1 and 3.2. PIF output 3.3 has largely been addressed through a DBSA Green Fund study undertaken by WWF in the uMngeni, the results of which will be addressed in the revised output 1.3.2.</i>
	<i>Outcome 1.3 Mechanisms for financing ongoing rehabilitation and maintenance of EI are in place and operationalized</i>	
Component 2. Demonstration: application of policies and financial mechanisms in the water sector development in 2 river catchments and municipalities deliver funds, tools and lessons for replication and improvements in watersheds	Component 2: Application of policies and financial mechanisms in the water sector and in critical catchments improves water security	In addition to editorial changes to the wording of PIF component 2 , there are two changes in alignment: <ol style="list-style-type: none"> Change in one of the catchments that form the projects focal area: following discussion with key stakeholders⁸ it was recommended that the demonstration catchments shift from the Kouga/Kromme and Berg River catchments to the Berg-Breede system in the Western Cape and the uMngeni-uMkhomazi (Greater uMngeni) system in KwaZulu-Natal⁹. Reorganisation of outcomes according to their geographic focus (catchments) for the purposes of streamlined project management and implementation. The revised outputs within each revised outcome reflect the intent of the original PIF outcomes 4, 5 and 6 in this component. Indicators and targets were largely undefined in the PIF and have been developed in the Strategic Results Framework.
<i>Outcome 4: Two river systems have empowered stakeholder forums that drive the application of</i>	<i>Outcome 2.1 Enhanced organizational capacity and investment in EI in the Berg and Breede</i>	PIF outcome 4 has been strengthened in outputs 2.1.1 and 2.2.1 respectively to focus specifically on improving capacity and tools in the mandated institutions, the relevant catchment management agencies, for integrating biodiversity and ecosystem services into the planning, budgeting and management activities of

⁸ Explained further in A3.

⁹ This recommendation was approved by the Project Steering Committee and is documented in a PPG report.

financial mechanisms into water economies of two municipalities and along the catchment developments (outcomes 5 and 6)	catchments have improved water resource management	<p>CMAs. Changes to PIF outcome 4 are further elaborated:</p> <ul style="list-style-type: none"> PIF output 4.1 is integrated into revised outputs 2.1.1 and 2.2.1 with a specific focus on the capacity of the CMAs, PIF output 4.2 and PIF output 4.3 have moved into revised outcome 1.1 to include the development of catchment level accounts (under revised output 1.1.1) and the development of the necessary capacity to utilise these accounts (under 1.1.2), PIF output 4.4 has been moved to revised outcome 1.2 as the enabling nature of this work will take place at a national level and not in the catchments. Catchment level application is provided for under outputs 2.1.1 and 2.2.1. <p>Changes to PIF outcome 5 are further elaborated:</p> <ul style="list-style-type: none"> PIF outcome 5 has been integrated in revised outputs 2.1.2 and 2.2.2. PIF output 5.1 is captured under revised output 1.1.1 (linked to natural capital accounting). PIF outputs 5.2 and 5.5 are captured under revised outputs 2.1.2 and 2.2.2 for each catchment respectively with linkages to revised output 1.3.1 where necessary (particularly for PIF output 5.5). PIF output 5.3 is captured, to the extent feasible and achievable for the project, under revised output 1.3.1 as this work is more appropriately addressed at the national enabling level. PIF output 5.4 is captured in the CMS development processes of revised outputs 2.1.1 and 2.2.1 accordingly. <p>Changes to PIF outcome 6 are further elaborated:</p> <ul style="list-style-type: none"> PIF outcome 6 is addressed as an outcome of revised outcomes 2.1 and 2.2 and is reflected in the targets for those outcomes. While PIF outputs 6.1 and 6.3 speak specifically to the rehabilitation of degraded ecosystems (rivers and wetlands), investing GEF resources in these activities is not incremental as public funds are directly used towards these activities. The project has shifted its focus to one of supporting and improving the planning, coordination and monitoring of rehabilitation activities towards improved outcomes for biodiversity, water service delivery, the return on investment of built infrastructure and socio-economic targets. These are the incremental activities that will improve the delivery of global environmental benefits from the existing spend on rehabilitation activities. Under outcome 1.3, the project will also seek, to ensure more sustainable financing for these activities, beyond the existing public works oriented funding for rehabilitation. PIF Output 6.2 on the adoption of green infrastructure solutions has been deprioritized in the project design for a focus on ecological infrastructure solutions which have greater outcomes for global environmental benefits. Green solutions will be explored in the project activities where there is the possibility to complement ecological infrastructure solutions. The focus of PIF output 6.4 has been shifted from estuaries to partnerships in priority catchments that will result in improved water security through a focus on biodiversity and ecosystem services. This is integrated into revised outcome 2.1 and output 2.1.1, and revised outcome 2.2 and output 2.2.1.
Outcome 5: Application of financial mechanisms lead to 25% increase in cost recovery of ecological investments through water price linked charges	Outcome 2.2: Enhanced organizational capacity and investment in EI in the greater uMngeni catchments have improved water resource management	
Outcome 6: The River Health Index of the two river systems, the Wetlands Health for at least 6 critical wetlands and the state of Berg and Kromme estuarine health maintained or improved		
No Component 3 in PIF	Component 3: The integration of biodiversity and ecosystem services into water sector planning, finance and development by targeted stakeholders is improved through social learning, credible evidence, and knowledge management	<p><i>Drawing on recent GEF and Scientific and Technical Advisory Panel (STAP) guidance on knowledge management, evidence and social learning, a third component has been designed into the project with two outcomes that deliver the social learning, knowledge management and credible evidence that is regarded as critical for the project's overall success. Knowledge management and the generation of project relevant evidence is a priority of the GEF and has been accordingly recognized and integrated into the project design. This element of the project was not included in the PIF.</i></p> <p><i>The two outcomes of Component 3 are:</i></p> <ul style="list-style-type: none"> <i>Outcome 3.1 is focused on targeted engagement and capacity strengthening, including through social learning and knowledge management;</i> <i>Outcome 3.2 is focused on coordinating and generating a credible evidence base, including for project and impact level monitoring and evaluation. These outcomes are fundamentally interwoven throughout the project, and support, enable and strengthen the interventions in the other two components.</i> <p><i>These outcomes are fundamentally interwoven throughout the project, and support, enable and strengthen the outcomes and interventions in the other two components, and ultimately, the achievement of the project objective and contribution towards the project goal.</i></p>
	Outcome 3.1. Project impact and sustainability is enhanced through targeted engagement with key stakeholders	
	Outcome 3.2 Evidence of the value of ecological infrastructure for water	

A.1. Project Description. Elaborate on: 1) the global environmental and/or adaptation problems, root causes and barriers that need to be addressed; 2) the baseline scenario or any associated baseline projects, 3) the proposed alternative scenario, GEF focal area¹⁰ strategies, with a brief description of expected outcomes and components of the project, 4) incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, and co-financing; 5) global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF); and 6) innovativeness, sustainability and potential for scaling up.

A.1.1) Global environmental problems, root causes & barriers that need to be addressed:

South Africa is considered one of the most biologically diverse countries in the world due to its species diversity and endemism as well as its diversity of ecosystems. Unfortunately, indicators show that biodiversity loss through habitat degradation is a particular problem in freshwater ecosystems. Wetland ecosystems are the most threatened, with 65% of wetland ecosystem types threatened (Figure 2) and only 11% of wetland ecosystem types being well protected (Figure 3). River ecosystems are the third most threatened with 57% threatened. Estuary ecosystems are more threatened than river ecosystems, but, in turn, river ecosystems are more poorly protected than estuary ecosystems. Loss and degradation of these freshwater ecosystems is also resulting in impacts on species. Red List assessments show that one in five freshwater fish species is threatened. Degradation of ecosystems and decline in species numbers also result in disruption of ecological processes that underpin biodiversity and ecosystem services. No systematic quantitative assessment has been done on how changes in biodiversity have impacted on the provision of ecosystem services in South Africa, or how the production of ecosystem services has impacted on biodiversity¹¹. However, there are examples of where decline in ecological condition of ecological infrastructure¹² or decline in species numbers have impacted on availability of traditional medicine species, impact on pollination services from wild pollinators, or impacted on fisheries.

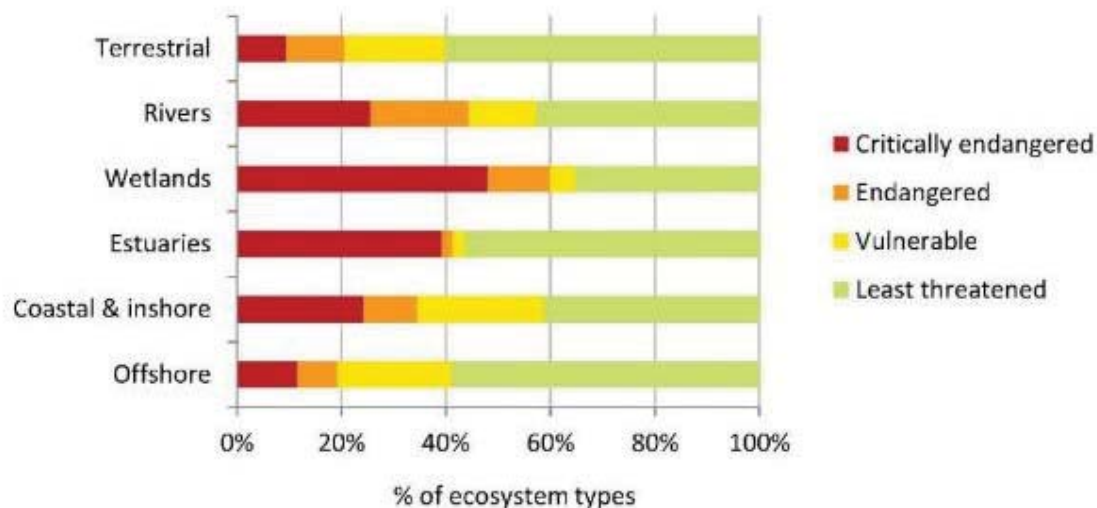


Figure 2. Summary of ecosystem threat status across terrestrial and aquatic ecosystems¹³

¹⁰ For biodiversity projects, in addition to explaining the project's consistency with the biodiversity focal area strategy, objectives and programs, please also describe which [Aichi Target\(s\)](#) the project will directly contribute to achieving.

¹¹ This CEO Endorsement is a stand-alone document that synthesizes a comprehensive project document and is fully referenced.

¹² Ecological infrastructure is defined as naturally functioning ecosystems that deliver valuable services to people, including water-related services such as water provisioning and purification, water flow regulation and disaster risk regulation amongst others.

¹³ Driver A., Sink, K.J., Nel, J.N., Holness, S., Van Niekerk, L., Daniels, F., Jonas, Z., Majiedt, P.A., Harris, L. and K. Maze. (2012). National Biodiversity Assessment 2011: An assessment of South Africa's biodiversity and ecosystems. Synthesis Report. South African National Biodiversity Institute and Department of Environmental Affairs, Pretoria.

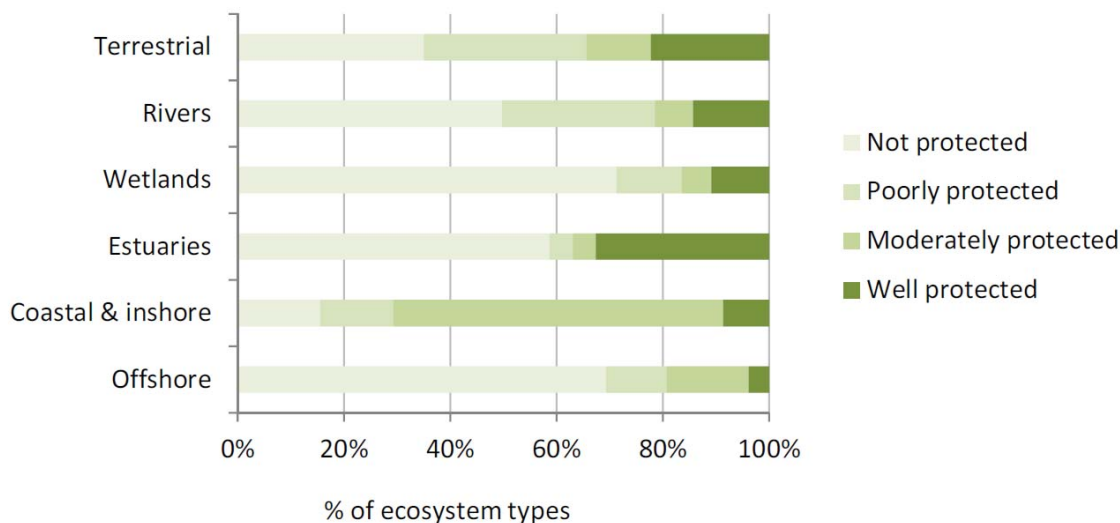


Figure 3. Summary of ecosystem protection level across terrestrial and aquatic ecosystems

Biodiversity and ecosystem services are threatened by a range of pressures that result in irreversible damage and alter the ability of these ecosystems to provide ecosystem services. Wetland and river ecosystems share pressures that threaten them (and that also affect some terrestrial and marine ecosystems):

- **Disruptions or alterations to the timing and quantity of freshwater flows** in a catchment, for example, from over-abstraction of water from rivers, as a result of dams or transfer schemes between catchments
- **Spread of invasive alien species** present a large and growing challenge in South Africa. They threaten indigenous biodiversity, and have serious socio-economic impacts including threats to water security (invasive alien species have higher water use than indigenous plant species), reduced productivity of rangelands, increased fire risk and impacts on crop agriculture.
- **Pollution** and sediments, driven by poor or illegal land use practices and poorly maintained infrastructure such as wastewater treatment works is a growing problem affecting aquatic ecosystems. It is often exacerbated by destruction of natural vegetation along river banks.
- **Conversion of wetland and riparian areas and other high value biodiversity landscapes** due to cultivation, urban development, mining, dam construction and poor grazing management.
- **Degradation of catchment area** feeding into freshwater ecosystems: terrestrial ecosystems, particularly those in Strategic Water Source Areas (SWSAs) that are degraded or converted by other land uses, such as agriculture, plantation forestry or mining.
- **Climate change** is altering biodiversity and ecosystems in varying ways across the country and is placing pressure on institutions to manage resources adaptively.

Although the biodiversity of South Africa's aquatic ecosystems is critical for sustainable and green economic development, inadequate integration of the value of biodiversity and ecosystems services in economic development decisions (including agriculture, infrastructure and urban development) have led to development outcomes that ultimately undermine the natural capital that underpins development. This is demonstrated in the water value chain, where: although South Africa has a robust suite of tools that the water sector uses to ensure water resource protection and provide a basis for sustainable water resource development, there remain significant challenges in ensuring the implementation as well as enforcement of water resource protection programmes, which contribute to a number of pressures on biodiversity and threaten water security. The **root causes** behind these pressures on biodiversity and ecosystems are described below.

Institutional and regulatory flux, particularly in the water sector, which hinders the sector's ability to respond to the various water resource management challenges. This feeds into the exceedingly slow establishment of institutions responsible for coordinating the management of water resources, particularly catchment management agencies with only two of the nine CMAs currently operational. This significantly undermines capacity for integrated water resource management.

Institutional fragmentation of responsibilities in the water value chain is part of this. Governance challenges exist vertically within the water sector in terms of levels of coordination within the water sector. They also exist horizontally between sectors that influence water governance, planning and resource management. This has implications for the more operational aspects of managing resources, but also has impacts upon the regulatory aspects. Effective CMAs however could go some way to addressing aspects of institutional fragmentation if they are given the profile necessary to be institutions through which cooperative governance could be coordinated. Related to this is complicated and/or untested institutional arrangements pertaining to financial management limitations make it difficult for a downstream municipality to invest its own funds in another upstream municipality to improve water security in the downstream municipality.

Under-capacitated institutions responsible for managing water resources and infrastructure, exacerbated by declining capacity and skills in the institutions, is another root cause of many of the pressures on biodiversity. The loss of engineering and scientific and strategic planning skills in organisations responsible for managing wastewater treatment works and water resources, and the decline in agricultural extension support are examples where the loss of skills is affecting resource management.

Capacity constraints combined with poor alignment between differing sectoral policies are directly related to another root cause which is weak regulation, monitoring and enforcement. Hydrological performance is further hindered by an inadequate incentive or penalty regime for land users to maintain catchment ecological functioning (such as meeting Resource Quality Objectives (RQOs), pursuing conservation agriculture, installing contour bunds, riparian buffers, clearing IAPs. The development and maintenance of monitoring networks and associated information systems that are important to good planning and decision-making are not receiving the financial support required.

The lack of integrated ecological and socio-economic data will increasingly hinder integrated and adaptive management, as well as the ability to measure the hydrological benefits of ecological infrastructure interventions. A focus on water as a resource in isolation from underpinning ecosystems and catchments supports in-stream management and management of built infrastructure, rather than land-based management in catchments (including of ecological infrastructure) which has a direct influence on in-stream and infrastructure condition. Additionally, the lack of reliable information on water and ecosystems means that decisions are insufficiently informed by an ecosystem perspective. It also reduces the ability to link information about ecosystems to other socio-economic information such as national accounts and census information. This in turn leads to sub-optimal management of water resources, biodiversity and ecological infrastructure, linking directly to the next root cause.

Failure to make decisions based on integrated socio-economic and environmental information is related to another root causes that relate to funds not being allocated to manage ecological infrastructure to maximise water outcomes. While current water policy recognises the value of ecological infrastructure, and is supportive of allocating funds to the management of ecological infrastructure, this has proven difficult to implement in practice. An example is the sub-optimal allocation of available funds to manage or restore ecological infrastructure in particular areas that will maximise water outcomes at the catchment level. Under the auspices of the EPWP, significant amounts of funding are allocated to activities that support the management and rehabilitation of biodiversity and ecosystem services under programmes such as LandCare and Working for Water. However, concerns have been raised that this funding mechanism doesn't sufficiently integrate environmental outcomes with socio-economic targets such as job creation or support to poorer communities. These targets result in funds not being allocated to projects that maximize biological or water resource outcomes, despite the economic returns from upper catchment management. Another example is that authorities responsible for managing the ecological infrastructure that generates water (often protected area agencies and private or communal land owners) receive inadequate budget linked to the hydrological performance of the land they manage. This also applies to infrastructure project balance sheet financing where amounts allocated for operations and maintenance do not consider hydrological performance of the infrastructure investment linked to ecological infrastructure.

Linked to the above is the failure to integrate non-market services (ecological infrastructure and biodiversity) into the planning, design, financing and operations of water infrastructure (short, medium and long term). Current water infrastructure design and planning does not factor in the dependencies on ecological infrastructure, in particular dams with respect to the condition of upper catchments, or riverine ecosystems that improve water quality and reduce treatment costs. This leads to sub-optimal planning and budgeting over the life of the investment, in

most cases failing to recognise that ecological infrastructure has a significant role to play in realizing the planned useful life of the asset, or possibly extending it. The cost of managing ecological infrastructure which provides services to specific water infrastructure, is not built into the on-going cost of maintaining that infrastructure, or incorporated into the relevant component of the water price (namely the direct cost component of the operations and maintenance charge).

Another issue is the failure to adequately include the costs of ecological infrastructure related catchment management into the Water Resource Management Charge. In other words the basic price of water does not reflect the full costs of catchment management, including rehabilitation, restoration, compliance, monitoring and enforcement. Part of this is that these costs have not been properly calculated and are not included in the basic price of water, which is a revenue generated from a service produced by functioning ecosystems. Funds raised would then need to flow to the relevant landowning authorities in upper catchments, and the responsibilities for managing water-related ecological infrastructure linked to the hydrological performance of the land they manage would need to be clearly allocated or agreed to by all stakeholders.

Failure also speaks to the challenges of how decision-makers make choices that factor ecological infrastructure into the management of water resources. An aspect of this is a lack of appreciation (full understanding) at an individual level of the role biodiversity and ecological infrastructure in ensuring water security, and the impacts and dependencies of infrastructure on natural capital. The failure to integrate consideration of the value of biodiversity and ecological infrastructure to water security is however not solely as a result of lack of information. There are many examples of decisions being made that are mindful of the risks and costs and proceed nonetheless with short-term benefits at the expense of long term costs of ecologically unsustainable development. For instance, although the Reserve (for meeting the basic human needs and the ecological reserve) in the NWA is given highest priority for water allocation, there is still failure in practice to implement and enforce the Reserve and other RQOs. Partly, this has to do with insufficient translation of RQOs into concurrent economic and land-use planning framework in support of water sector development and finance planning (linked to horizontal fragmentation, above).

The long-term solution is one in which investment in South Africa's ecosystems and biodiversity, with its multiple social, environmental and economic benefits, is unlocked and pressures on biodiversity are addressed through integrating biodiversity and ecosystem services into planning, finance and development in the water sector improves water security. In doing so, the project supports development and human well-being.

Achieving this overarching goal requires that several issues be addressed. **Decision-making needs to be informed by integrated socio-economic and ecological information, including natural capital accounts, in a way that supports policy, planning and decision-making that is cognizant of the full range of benefits provided by biodiversity and ecosystem services.** The production of a regular set of natural capital accounts in South Africa, including water, land and ecosystem accounts and ensuring necessary capacity to produce and interpret these accounts is part of the long-term solution. Also required is **more systematic and consistent calculation of the true price of water to inform infrastructure planning, design and budgeting and ensure a sustainable and adequate revenue stream for ongoing rehabilitation and maintenance of ecological infrastructure.** This can include a suite of funding mechanisms such as compensation measures (including offset funds), licencing, insurance policies, and the water tariff. It further includes the material (including financial) cost of the impacts and dependencies of built (grey) infrastructure on ecological infrastructure be more systematically and consistently reflected in project credit risk assessments, balance sheets, income statements, and cash flows involved in infrastructure finance. Achieving this requires interventions at several levels of the water sector value chain.

Another important part of the long-term solution is the **establishment of stable and capacitated institutions ensures that biodiversity and ecosystem services are adequately taken into account in water resource planning and management.** The establishment of CMAs is an important step in providing a more locally based water management institutions that can coordinate across the water sector and between different sectors. **Relevant planning frameworks also need to be nurtured to ensure responsive governance and to deliver outcomes for biodiversity and ecosystem services that benefit water security.** This includes more cooperative approaches to resource management between land and water. Ensuring that relevant planning tools, such as catchment management strategies (CMSs), water reconciliation strategies and others, are developed with the inputs of other sectors, implemented and account for the role of biodiversity and ecosystem services in water security, in alignment

with local planning frameworks such as IDPs, is essential. Finally, it is necessary to ensure that **regulatory decision-making and authorisations incorporate biodiversity and ecosystem services, and that compliance monitoring and enforcement is effective, and that monitoring and information frameworks support both planning, finance and management.**

Successfully integrating biodiversity into planning, finance and development in the water sector for water security also requires that **part of the long-term solution be committing to, supporting and enabling the social process involved in changing the way people make decisions necessary to factor ecological infrastructure into the management of water**¹⁴. Addressing the complex resource dilemma that integrated water resource management presents us with involves enhancing social learning and change towards a deeper appreciation of the value of biodiversity and ecosystems for water security.

Achieving this requires addressing **three main barriers to integrating biodiversity and ecosystem services into the water value chain for improved water security.** These are:

- **Weak institutional capacity, poor alignment and coordination between institutions along the water value chain:** Weak institutional capacity within water management institutions (within the sector) and poor alignment and coordination between institutions along the water value chain (between sectors) account for many of the challenges in the implementation as well as enforcement of water resource protection programmes. This (a) exacerbates many of the pressures of biodiversity, and (b) presents a barrier to the long-term solution.
- **The lack of sustainable financing for managing ecological infrastructure in catchments for water security outcomes:** The true price of water is not reflected in the water tariff, there is a lack of sustainable and an inadequate revenue stream for ongoing rehabilitation and maintenance and the financial cost of the impacts and dependencies of built infrastructure on ecological infrastructure are not reflected or correctly allocated in project balance sheets, income statements, cash flows and the credit decision-making processes of infrastructure delivery.
- **Natural capital accounts related to catchments and ecosystems are not regularly produced and linked to socio-economic information, and therefore do not support planning, policy and decision-making and investments in favour of ecological infrastructure for water security:** The value of accounts is fully realised only when there is a regular time series that can inform planning and decision-making. Insufficient resources to build on initial pilot accounts to produce accounts in time series, to show that they are useful.

A.1.2) Baseline scenario or any associated baseline projects

The project baseline is characterized by a situation in which the current approach to planning, financing and developing water sector infrastructure (as a vehicle for the delivery of development outcomes) fails to optimize water security through the adequate consideration of biodiversity and ecosystem services. This compromises the return on investment from and the sustainability of infrastructure, hindering the delivery of critical services to people and the economy, and results in ongoing degradation of terrestrial and freshwater biodiversity and compromised delivery of ecosystem services resulting in water scarcity with key catchments closed for further development.

Investment in infrastructure in South Africa, and across much of Africa, is considered critical to economic growth, job creation and poverty alleviation. Yet South Africa is only investing half of the targeted 10% of gross domestic product (GDP) in infrastructure, highlighting the need for alternative approaches to development. Engineering solutions alone are too costly and in some cases, technologically too demanding, to result in the levels of development and service delivery required. The challenge, reinforced in global agreements such as the Sustainable Development Goals (SDGs) and the Paris Agreement, and South Africa's National Development Plan (NDP), is for development that is sustainable and that supports the transition to a green, decarbonised economy. This requires working with the public and private sectors, including finance institutions, to internalise externalities and integrate the value of biodiversity and ecosystem services into decision-making at all levels. It also requires opening new markets in ecosystem services for private sector investment.

¹⁴ The sorts of decisions that are made along the full length of the water value chain, such as those that relate to grazing and cultivation decisions in important catchments, how investment decisions are framed, or how responsibilities are allocated for maintaining and using water as a common good that future generations (our children and grandchildren) also need to use.

A focus on ecological infrastructure is helping to unlock investment in South Africa's ecosystems, with multiple social, environmental and economic benefits. This new focus emphasizes the value of ecological infrastructure in supporting built infrastructure and is especially illustrated in the water value chain where ecological infrastructure can directly support the delivery of water-related services and strengthen water security.

There is a supportive policy environment in the NDP which highlights the importance of establishing Catchment Management Agencies (CMAs) and the development of Catchment Management Strategies (CMSs). The NWRS has a chapter on ecological infrastructure for which there is an implementation plan. The Water Pricing Strategy and the Water Discharge Charge System both provide for the recovery of costs linked to the management of ecological infrastructure in the delivery of water services. However, these policies, institutions and associated tools/strategies have yet to harness the integration of biodiversity and ecosystem services towards improved water security, broader development outcomes and the delivery of global environmental benefits. The Water Pricing Strategy has been identified in the BIOFIN South Africa project's draft Biodiversity Finance Plan as one of 16 finance solutions to addressing the biodiversity finance gap that should be supported going forward. Collaboration between BIOFIN and the design of this project, at steering committee and operational level, has ensured a good alignment and focus of resources in respective focal areas. This project will focus on revenue opportunities in the water sector, while BIOFIN itself will directly pursue other finance solutions, in support of what is being done through the GEF project. The finance solutions to be pursued in BIOFIN's Biodiversity Finance Plan are still being finalised but coordination of these initiatives within DEA will ensure complementary focus and leverage.

The Expanded Public Works Programme (EPWP) funded Natural Resource Management programmes implemented by DEA lead the effort towards the management and maintenance of ecological infrastructure with a current spend of R2 billion per annum. However, these programmes do not optimize water and biodiversity outcomes, and do not have sustainable, long term financing. A range of public sector grant mechanisms support the delivery of services through infrastructure but similarly fail to consider the role of ecological infrastructure in the delivery of these services.

The private sector currently considers the costs of ecological infrastructure in the projects they finance from a mitigation or impact perspective, where ecosystems concerns have been built into project appraisal processes. There is however growing recognition of the impacts and dependencies of biodiversity and ecosystem services on businesses. This has generated interest from both public and private sector financial institutions in the development of tools to ensure that investments in water infrastructure are responsible and contribute to improved water security.

Limited capacity and data constraints hinders the country's ability to build on the pilot ecosystem accounts produced in South African under the global Advancing Natural Capital Accounting (ANCA) project – national river ecosystem accounts and land and ecosystem accounts for the province of KwaZulu-Natal. There is considerable opportunity to build on these pilots, with support from Statistics SA, to use ecosystem accounts to inform South Africa's reporting on the SDGs. Natural Capital Accounts can also inform strategic questions around the water intensity of particular economic sectors at the national level, and the implications of this for the economy and its development trajectory as a whole. However, ecosystem accounts are of limited use for the planning and management of water-related infrastructure, ecological infrastructure and ecosystem services at the catchment level without links between water accounts, land accounts, ecosystem accounts and socio-economic information.

There is a growing body of experience and lessons around the extent to which biodiversity and ecosystem services can support water security and development. However, the use and management of water resources in water catchments results in a resource dilemma, one in which access and use of water (the common pool resource) by people and ecosystems is becoming increasingly contested. Addressing this generally requires challenging socially constructed realities of how water resource management is understood, and which is arguably best achieved through a social learning process. One that is aimed at a convergence of goals and knowledge needed to create more accurate mutual expectations and build relations of trust, a co-creation of knowledge needed to understand issues and practices, and a change in behaviours, norms and procedures for integrated management and sustainable use of water. At its essence, addressing the current and future water resource dilemma means learning to work in a 'new' world. This is a world in which achieving water security is a complex societal (so-called 'wicked') challenge that requires creative, collaborative, complementary and coordinated approaches to address. At the moment there is little coordination across the breadth of activities and projects, and awareness and understanding (of the importance of

biodiversity and ecosystem services to water security, and between water and biodiversity sector stakeholders) continue to be cited as a challenge. Similarly, the evidence base needed to support these claims is poorly coordinated and still largely reliant on ad hoc or anecdotal evidence. Research coordination is needed and gaps need to be filled, not least around the systems for monitoring and reporting on the outcomes from particular interventions.

The baseline in the Berg-Breede system:

The Berg-Breede system extends across four strategic water source areas (SWSAs), namely the Grootwinterhoek, Table Mountain, the Boland Mountains, and the Langeberg (Figure 4)¹⁵. The Grootwinterhoek in the Cederberg is the source of the Doring River, the longest (200km) free-flowing river in the Western Cape, and is relatively well protected (see Figure 5 showing protected areas and world heritage sites in strategic water source areas). The importance of clean water from naturally functioning ecosystems for people reliant on natural resources is illustrated in Figure 6.

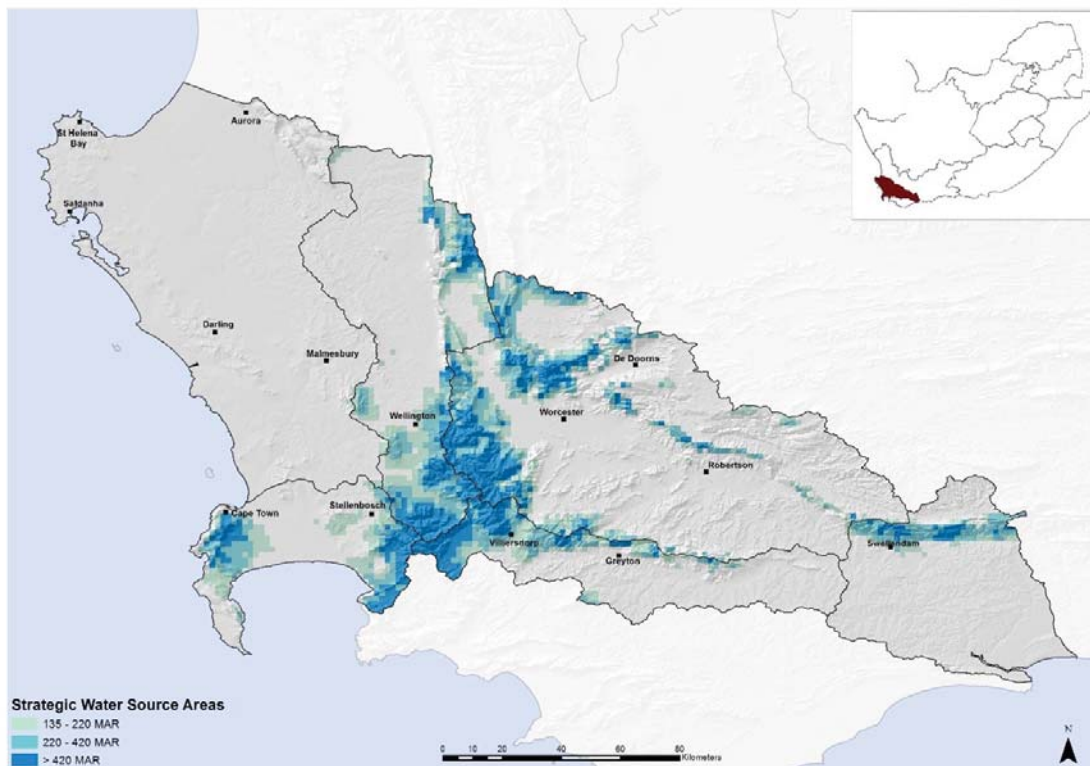


Figure 4. Strategic Water Source Areas in the Berg Breede demonstration catchment

¹⁵ WWF (2013). An Introduction to South Africa's Water Source Areas. Available at http://awsassets.wwf.org.za/downloads/wwf_sa_watersource_area10_lo.pdf

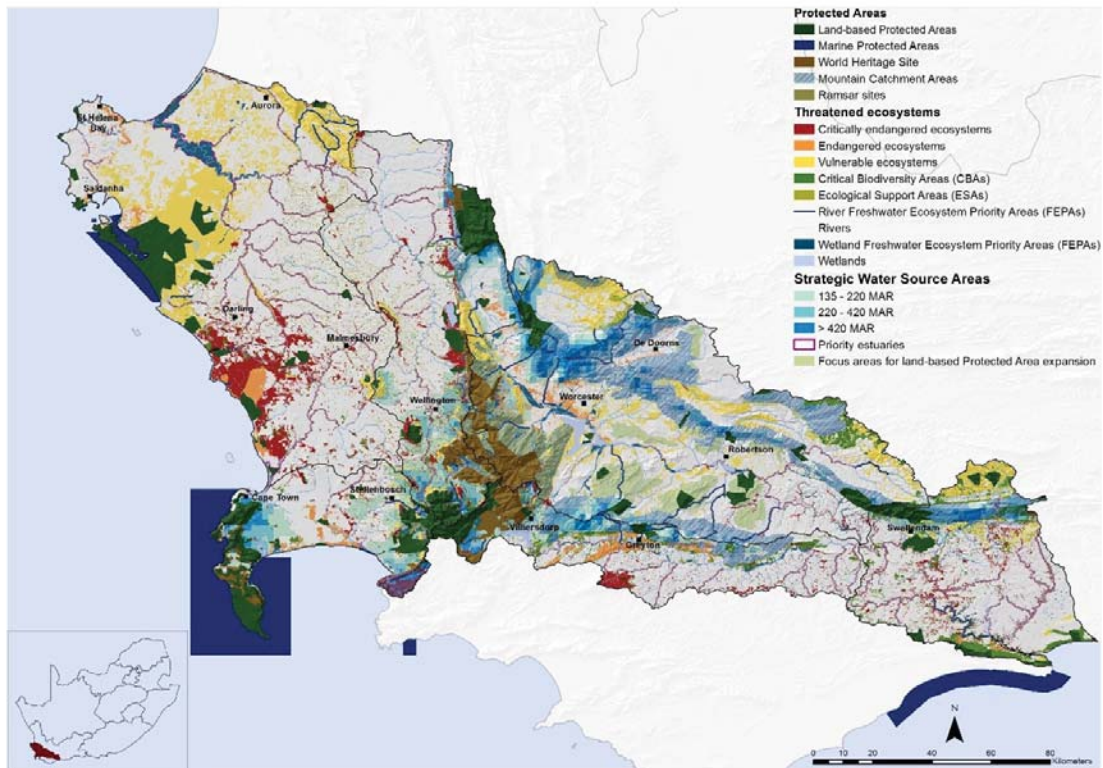


Figure 5. Biodiversity priority areas and protected areas in the Berg Breede demonstration catchment

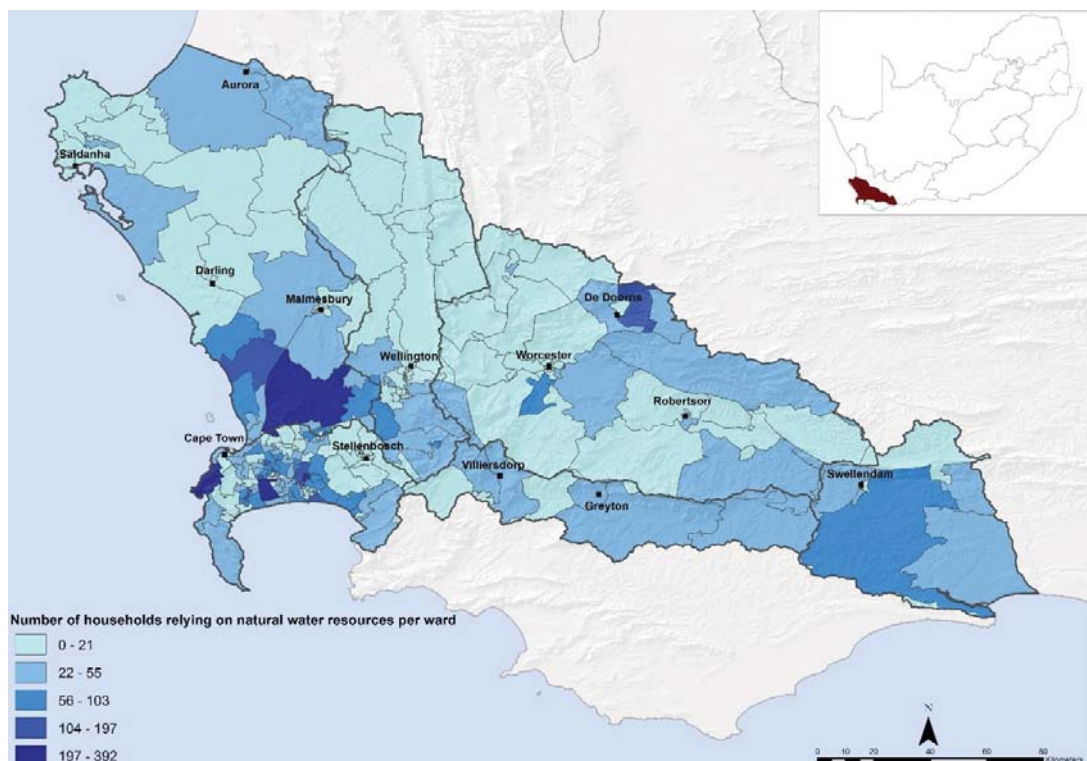


Figure 6. Number of households relying on natural water resources per ward in the Berg Breede demonstration catchment

The Berg-Breede system is made up of two adjacent catchments, Berg River and Breede River catchments, and fall within two different water management areas, respectively the Berg-Olifants and Breede Gouritz water management areas (Figure 7). However, they are hydrologically connected through inter-basin transfers and are both are part of

the Western Cape Water Supply System (WCWSS) (Figure 8). The main storage dams of the WCWSS are the Theewaterskloof and Voëlvei dams (owned and operated by the DWS; the Berg River Dam (owned by TCTA and operated by the DWS) and the Wemmershoek, Upper Steenbras and Lower Steenbras dams (owned and operated by the City of Cape Town). Transfers from the Breede catchment into the Berg catchment are important to the regional economy, with the City of Cape Town being the economic hub of the Western Cape Province and second most important economic centre of the country. In order to support the growing economy of this region some 22% of the yield of the Breede River catchment is transferred to the Berg River catchment.

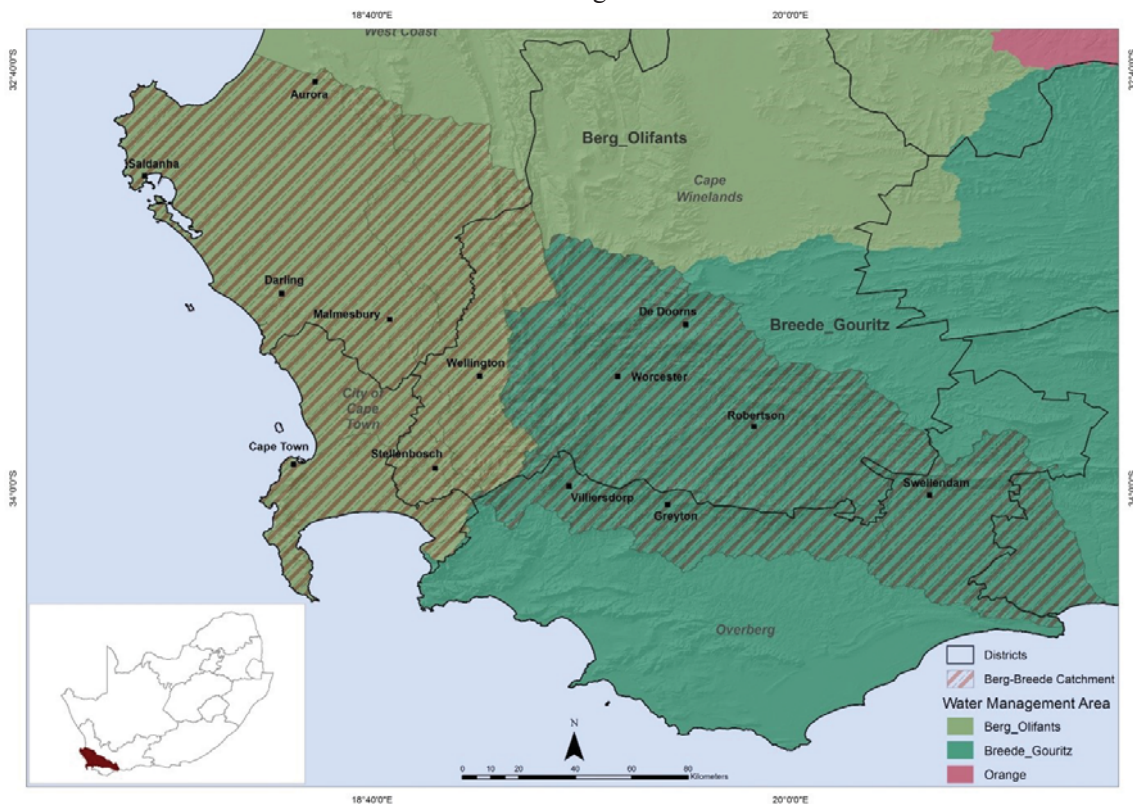


Figure 7. Location of the Berg-Breede demonstration catchments in relation to the water management areas

Water security in this system is at risk, with studies revealing that water supply needs to be augmented by 2019. Water conservation and water demand management efforts are the focus of current efforts along with invasive alien plant control in riparian areas to increase water availability. However without a focused initiative to pull these disparate elements together there will be a need for further system augmentation by 2019. The Breede Gouritz and Berg Olifants CMAs, which will be responsible for managing water resources in the area, were established in recent years and are still developing their CMSs. RQOs, which contribute to the protection of freshwater ecosystems, exist for most parts of the Breede system and are being developed for the Berg system but are not yet finalised. There is a gap in understanding of how to implement RQOs in practice, often as the mandates for catchment management stretches across an array of differing departments and institutions that are responsible for land use activities. The coordination required is complex and does require dedicated resources.

The Berg and Breede Rivers have an extensive network of irrigation boards and water user associations which provide operational support at localised levels. These institutions also play a key role in local compliance monitoring as well as an important revenue collection role as billing agents for the DWS. The institutions responsible for water services in this system are largely competent and resourced, namely City of Cape Town, Cape Winelands and the Overberg District Municipalities, working closely with the provincial Department of Environmental Affairs and Development Planning. Capacity constraints exist within local municipalities that have water service provision functions as well as local land use planning functions. Coordination initiatives include the Berg River Improvement Program and a Berg River Clearing and Rehabilitation Forum. However in both cases greater coordination capacity appears necessary.

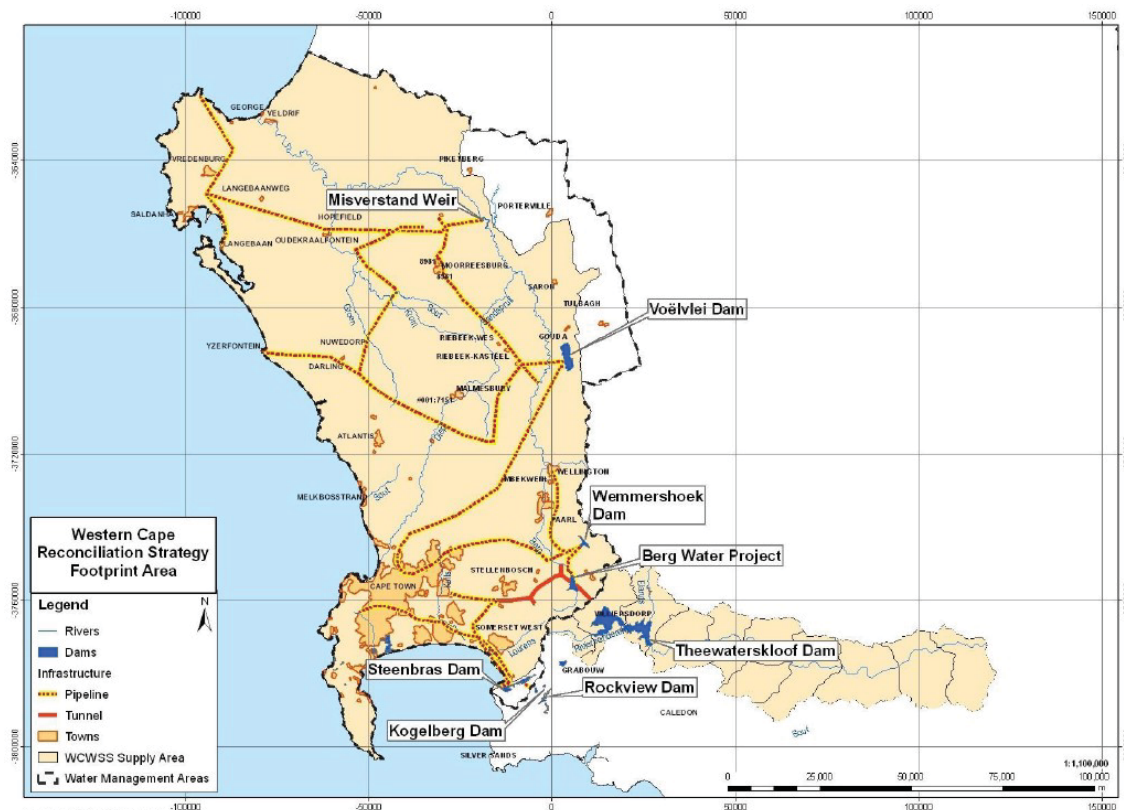


Figure 8. Western Cape Reconciliation Strategy footprint area in the Berg and Breede River Catchments (from DWA 2004)

DEA's Natural Resource Management programme has significant budgets to control invasive alien plants in the Breede and Berg systems. In the last three years NRM has undertaken significant programmes, focused on the use of labour intensive approaches, to improve the control of invasive plants and by so doing improve the quality of ecological infrastructure. The Breede Gouritz CMA has initiated certain invasive alien plant removal projects in the middle Breede (through the local irrigation board) and Sonderend Rivers (through the Zonderend WUA). An amount of R500 000 per annum has been committed by the Breede Gouritz CMA to the latter for seven years, although the required funding is likely orders of magnitude more than this, this has reflected the recognition by the CMA of the value add this programme brings. These funds have leveraged additional investment from the WUA (R200 000 per year 3 years) and individual farmers. There are not sufficient funds for coordination, planning, innovation or scaling up the work to the required level. The baseline of hectares cleared and maintained through the DEA's Natural Resource Management programme in the project area in 2016 is 5 849 hectares or 0.23% of the project area. This has generated 11 181 person days of employment opportunities.

In addition, 87 wetlands have been rehabilitated in this catchment to date. The provincial LandCare programme has invested approximately R500 000 per annum of funds for clearing and a further R2 million per annum in rehabilitation projects. In addition, LandCare has funded compilation of River Maintenance and Management Plans to improve landowner compliance and guide programmatic investment. WWF-SA has invested around R1.3 million per annum in the Sonderend from 2013-2016 and is actively searching for similar resources from corporates through their Water Balance programme. Much of these resources have been through the DEA NRM Land User Incentives programme.

Infrastructure investments include the City of Cape Town's raising of the Voëlvlei dam, and building a diversion weir at the base of Michell's pass below Ceres (an annual capital outlay of around R1.5 billion). In both cases, there are opportunities to clear and rehabilitate the catchments (Klein Berg, and Upper Breede/Witels rivers, respectively) feeding them. Additional augmentation will also be required to replace the water abstracted from these rivers upstream of the existing supply schemes such as Brandvlei dam. Another infrastructure investment is TCTA's enhancement of the bulk water supply to the Tulbagh region, and Waste Water Treatment Works infrastructure investments in East bank of the Berg River and Stellenbosch.

The baseline in the Greater uMngeni system

The Greater uMngeni system includes the Southern Drakensberg SWSA and borders on the Northern Drakensberg SWSA (Figure 9). The Southern Drakensberg SWSA includes the three highest mountains in South Africa, namely Mafadi, Njesuthi and Champagne Castle. The SWSA is home to several protected areas, a world heritage site, several biodiversity priority areas and the country's newest Ramsar site, the uMngeni Vlei (Figure 10). It is also the source of the longest free-flowing river in South Africa, the Mkomazi. The Mtamvuna, Mzimkhulu and Nsonge are other free-flowing rivers found in this area (WWF 2013). The importance of clean water from naturally functioning ecosystems for people reliant on natural resources is illustrated in Figure 11.

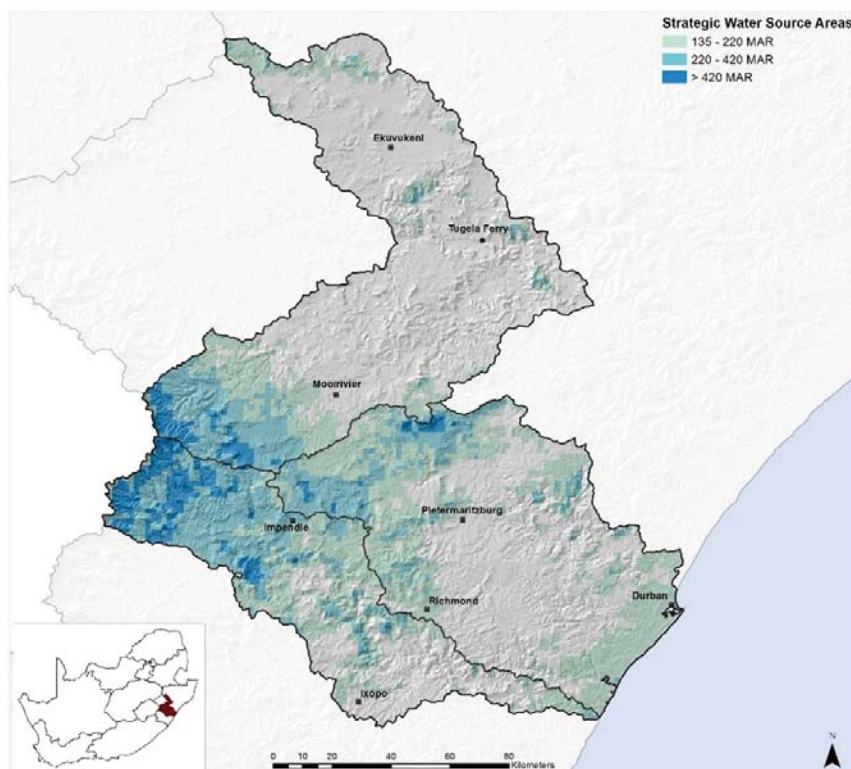


Figure 9. Strategic Water Source Areas in the Greater uMngeni system

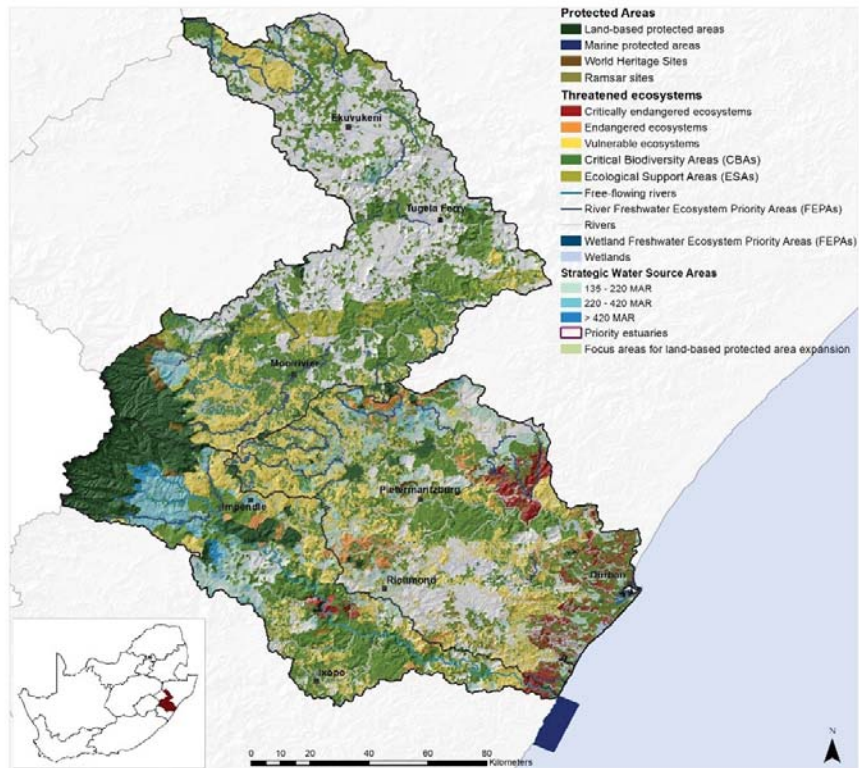


Figure 10. Biodiversity priority area and protected areas in the Greater uMngeni system

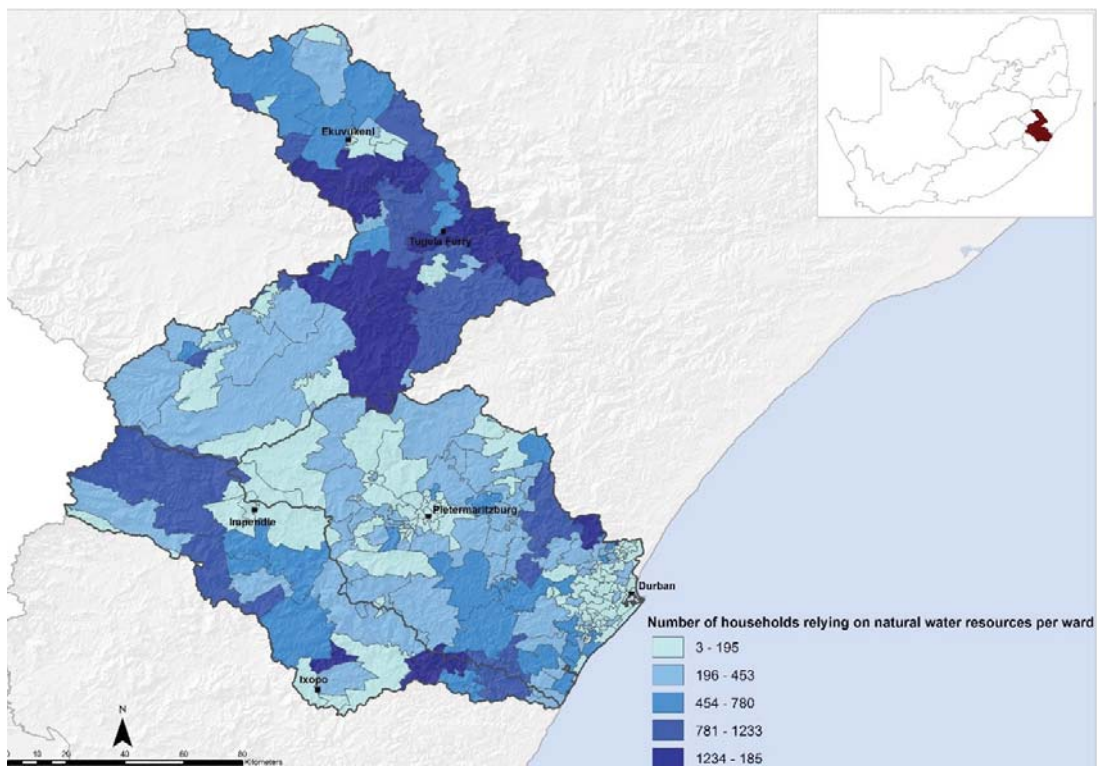


Figure 11. Number of households relying on natural water resources per ward in the Greater uMngeni system

The Greater uMngeni system falls entirely within the Pongola-Mtamvuna water management area (Figure 12), and is home to about 5 million people of which 3.4 million reside in the greater Durban area. Water needs are largely served by the uMngeni Water Supply System (UWSS). The UWSS comprises of a number of catchments that

jointly act as the main water source for people and industries in the eThekweni Metropolitan Municipality (Durban), Msunduzi Local Municipality (Pietermaritzburg), and Ilembe, Ugu and uMgungundlovu District Municipalities' areas of jurisdiction. The Greater uMngeni demonstration catchments includes the uMkhomazi, Mooi, uMlazi and uMngeni rivers, which are increasingly connected by an array of inter-basin transfers to enable improved water supply to the economic hubs in this region (Figure 13).

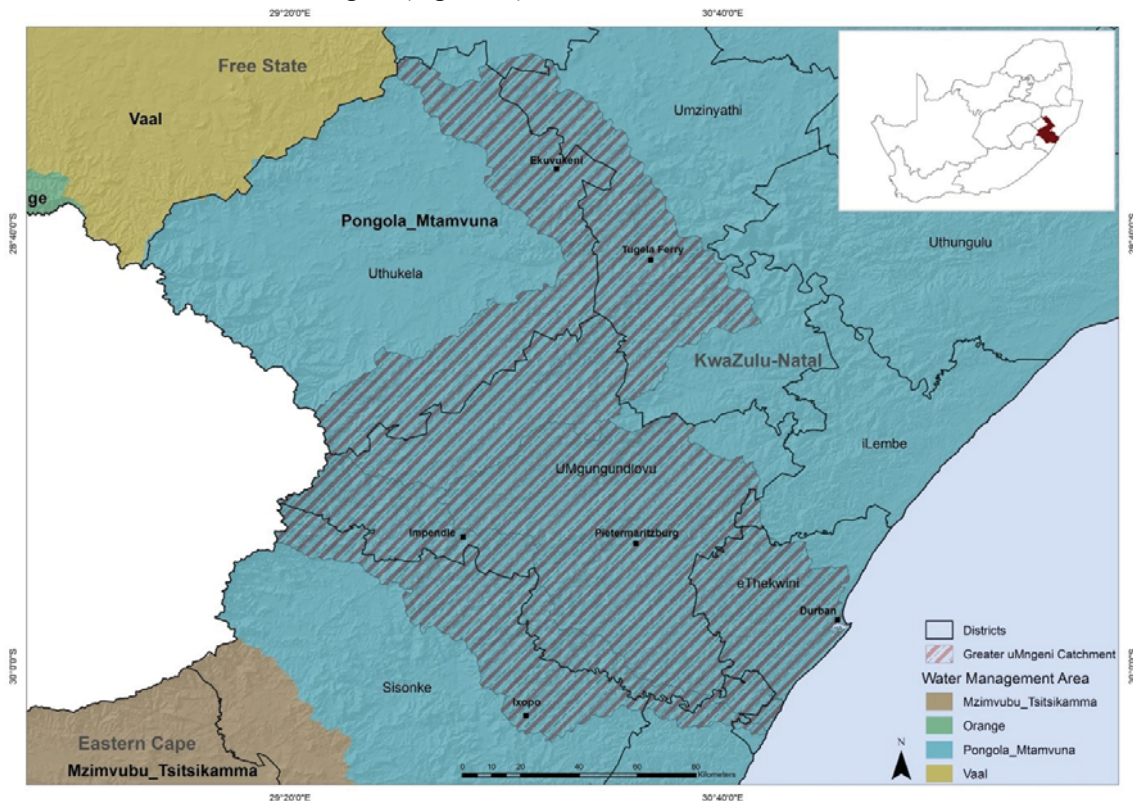


Figure 12. Location of the Greater uMngeni demonstration catchment in relation to water management areas

eThekweni Municipality requires 74.2% of the Umgeni Water's total water sales, whilst Msunduzi Municipality (Pietermaritzburg area) accounts for 15.7% of the total demand. Other municipalities use the remaining 10.1% of demand. From a planning perspective, water from the uMngeni system is required to be supplied at a 99% level of assurance (i.e. a 1:100 year risk of failure) due to the economic and strategic significance (based on the industrial and commercial output) of the greater eThekweni-Msunduzi region¹⁶. However, despite the augmentation of the uMngeni system from the Mooi River, demand exceeds available yield from the uMngeni system, which is currently in deficit with a worsening situation predicted into the future. The Greater uMngeni system is therefore under considerable pressure to meet increasing water demand and is essentially already in deficit. There is thus a need to look to alternatives beyond traditional built infrastructure in order to meet demands.

The Pongola-uMzimkulu CMA was legally established in May 2014 but the appointment of the Governing Board was only expected in 2016 and the CMA is yet to be formally operationalized. While a water reconciliation strategy study for the KwaZulu-Natal Coastal Metropolitan Areas was completed in 2009 (focused on ensuring sustainable water supply to the greater Durban coastal region) and RQOs for the uMngeni have been developed by DWS, a CMS for the water management area as a whole (developed by an operational CMA) is needed as the next significant planning intervention.

¹⁶ Umgeni Water. (2016). Umgeni Water Infrastructure Masterplan 2016. 2016/17 – 2046/2047. Volume 1.



Figure 13. uMkhomazi, Mooi and uMngeni catchments as part of the Greater uMngeni system

Local institutions include Umgeni Water, uMgungundlovu and Harry Gwala District Municipalities, as well as eThekweni Metropolitan Municipality. The institutions responsible for water services in this system are largely very competent and resourced. Umgeni Water is the second largest water utility in South Africa, supplying over 453 million cubic metres of bulk potable water annually to six Water Services Authorities. Umgeni Water Board also performs an array of supportive roles towards improved water resource management. They have had a strong focus on water quality monitoring over the years that has provided a useful database. uMgungundlovu and Harry Gwala District Municipalities, as well as eThekweni Metropolitan Municipality, have the function of leading the Integrated Development Planning across the Greater uMngeni system. There are considerable number of local municipalities that fall within this area and that have water service provision functions as well as local land use planning. Capacity constraints within the local municipalities are considerable and are exacerbated by inadequate income streams due to the high levels of poverty across the catchment.

Coordination initiatives include the establishment of the uMngeni Ecological Infrastructure Partnership (UEIP), a network involving government, civil society, private sector and academic institutions who partner (on a case-by-case basis) on various initiatives. The UEIP could play a key coordinating role between the complex array of institutions and mandates, but without more resources and potentially a more formalised institutional mandate there is a danger that the UEIP will not gain the traction that it could.

The DEA NRM Programmes baseline of hectares cleared and maintained in the project area in 2016 is 28 676 hectares or 2.32% of the project area. This has generated 206 834 person days of employment opportunities. In addition, 5 wetlands have been rehabilitated in this catchment to date. There is significant demand between priority sub-quaternary catchments for key services in the uMngeni catchment and includes Midmar (40 000ha), Albert Falls (27 000ha), and Henley/PMB (16 000ha) Dam catchments and the areas in which the NRM Programmes are active. DEA NRM are therefore considered to be an important investor in ecological infrastructure in these catchments. To date efforts do appear to be disparate, noting that the needs are significant and resources are often very limited. DEA NRM are busy planning a suite of new interventions within the Greater uMngeni system, but in the face of very significant needs there is concern that focused impact will not be achieved. In this regard the Institute for Natural Resources (INR) are providing assistance to the NRM programme in finding more effective operational approaches and is aimed at improving the levels of coordination.

The latest infrastructure investments includes the Spring Grove dam, with TCTA (on behalf of DWS) as the implementing agent for the development of this. The total cost of development was R582 million. The next significant developments will be on the uMkhomazi River at Smithfield and further into the future, as necessary, the Impendle Dam. The Smithfield Dam is currently still in the planning phases and is undertaking Environmental Impact Assessments. Estimated costs to develop this dam are in the order of R2 018 million. Further investments include the Northern Aqueduct which will supply water to the greater eThekweni area. The expected costs will be in the order of R800 million, which will be funded by the DBSA, a European grant for R100 million as well as a loan from the African Development Bank for R700 million. In support of this R5 million will be expended on ecological infrastructure management and maintenance.

There are several aligned but disparate initiatives in the Greater uMngeni system that are focused on ecological infrastructure. These include an initiative by the Adaptation Fund to reduce climate vulnerability and increase the resilience and adaptive capacity in rural and peri-urban settlements and small-scale farmers in productive landscapes in the uMgungundlovu District Municipality, and work by WWF with landowners, agri-business and finance role-players to explore innovative ways of investing in ecological infrastructure that unlocks sustainable value and delivers water benefits to nature and the environment. There are also several research based projects by INR and University of KwaZulu-Natal.

A.1.3) Proposed alternative scenario, GEF focal area strategies, with a brief description of expected outcomes and components of the project

This project still contributes to Focal Area 4 of the GEF Biodiversity Strategy, to “Mainstream Biodiversity Conservation and Sustainable Use into Production Landscapes/Seascapes and Sectors”. Within that, the focus of the project is still aligned to Programme 10 which supports the “Integration of Biodiversity and Ecosystem Services into Development & Finance Planning”. The project will support this outcome through a programme of work that strengthens the enabling environment for improving water security through the integration of biodiversity and ecosystem services in the planning, finance and development of water sector infrastructure; and through the application of policies and financial mechanisms in the water value chain in order to improve water security in critical catchments.

Despite interventions since 1994 to improve the management and conservation of biodiversity, including baseline activities, South Africa is still experiencing high rates of biodiversity loss and there are ongoing pressures on biodiversity, particularly from demands on water resources. The root causes of these pressures on biodiversity as explained are complex, relating to institutional, regulatory, planning, economic and social issues. There is currently a massive focus on development policy and finance in order to address the infrastructure backlog and thereby boost economic growth, and more specifically, to address the backlog in service delivery from water and sanitation infrastructure. However, the role of biodiversity in contributing to water security, and the impacts and dependencies of infrastructure on natural capital, are insufficiently recognised or internalised into water sector development and finance planning.

To address this, the project objective is “to develop policy and capacity incentives for mainstreaming biodiversity and ecosystem values into national, regional and local development policy and finance in the water sector, demonstrated in two water catchments” (to result in what is referred to as the GEF alternative)¹⁷. The overarching goal that this project will contribute towards is that “integrating biodiversity and ecosystem services into planning, finance and development in the water sector improves water security”. The project target is for “Water-related ecosystems services maintained in over 200 000 hectares of riverine ecosystems by removal of invasive alien plants, rehabilitation of riparian zones and dryland and wetland rehabilitation”.

The GEF alternative will achieve the project objective and contribute towards the goal through interventions that:

¹⁷ The project has interpreted “policy” as policies at all levels (including national, regional and local), “capacity” as institutions strengthened, individual capacity built, tools developed, etc. and “incentives” using a broad interpretation of incentives as interventions that encourage a shift or change towards the mainstreaming of biodiversity. “Mainstreaming” is understood in terms of the GEF definition of mainstreaming; biodiversity and ecosystems values as described above; “national, regional and local” includes all levels, including national, provincial, catchment, district and local. “Development policy and finance” is described as institutional mechanisms that impact on the management of water and land.

- 1) Strengthen the enabling environment for integrating biodiversity and ecosystem services to improve water security including through:
 - a. Developing natural capital accounts,
 - b. Influencing applicable policy frameworks, regulatory instruments and institutions,
 - c. Supporting the operationalization of mechanisms for financing ongoing rehabilitation and maintenance of biodiversity and ecosystem services, including supporting project-level impact accounting.
- 2) Test the application of policies and financial mechanisms to improve water security in the Berg-Breede system and the Greater uMngeni system of catchments (demonstration catchments).
- 3) Improve the integration of biodiversity and ecosystem services into the water value chain through strengthening social learning, credible evidence, and knowledge management.

These points reflect the structural design of the project, which was changed during the PPG phase to streamline the project design for improved implementation and management. These structural changes were substantially informed through stakeholder engagements undertaken during the design process as well as guided by the project steering committee and the PPG working group consisting of the DEA, DBSA and SANBI.

The project designed has three components. Each will be described briefly, highlighting how the project will be implemented. Figure 1 reflects the structure of the project in terms of the components and their outcomes, which are fundamentally interdependent, mutually supportive and cross-cutting (see Figure 14).

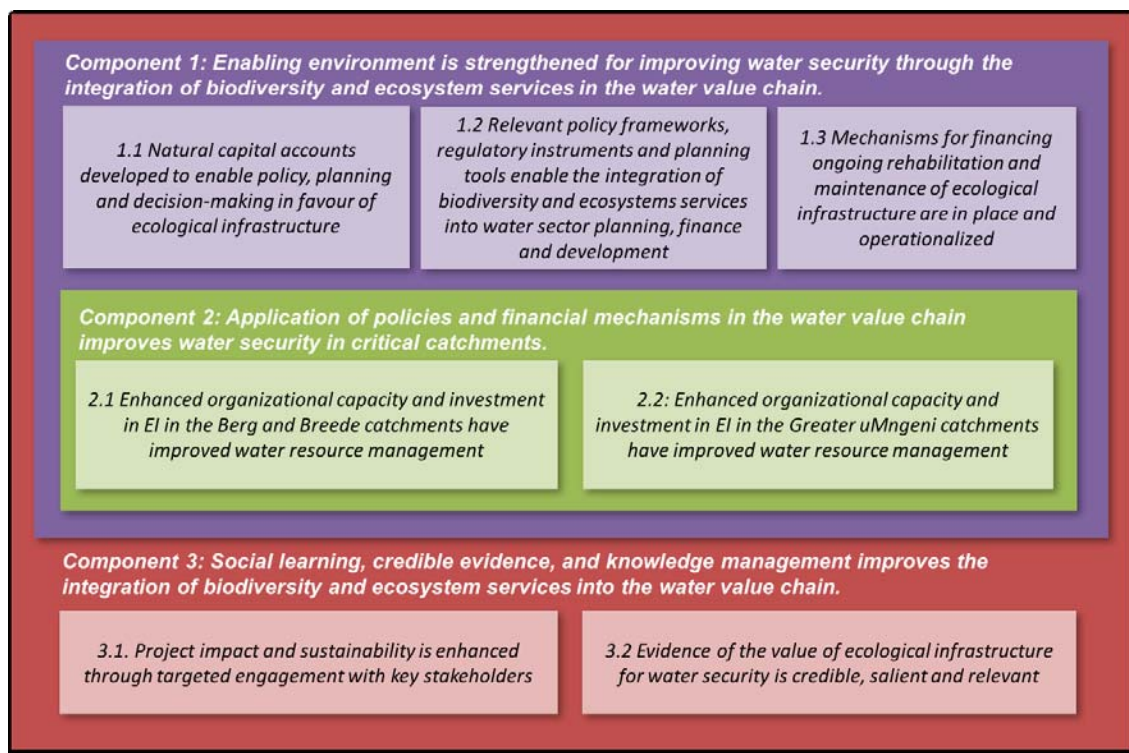


Figure 14. Structure of the project components and outcomes.

Component 1 – Enabling environment is strengthened for improving water security through the integration of biodiversity and ecosystem services in the water value chain.

This component has three outcomes designed to address the key barriers that hinder the integration of biodiversity and ecosystem services into current approaches to improve water security. These barriers include the limited integration of biodiversity into national accounting systems, policies, institutions, as well as regulatory and management tools linked to water infrastructure planning, development and finance. The outcomes of this component thus focus on the statutory instruments (policy, law, regulation), the enabling tools (financial, compliance, monitoring) and the various planning frameworks to facilitate the mainstreaming of biodiversity and ecosystems into processes that enable water security. In doing so, the project will work closely with DWS, CMAs,

DEA, DAFF, Stats SA, National Treasury and TCTA, as well as networks and institutions that finance or support the finance of infrastructure, including finance institutions such as the DBSA, TCTA, UNEPFI, the World Bank's WAVES programme, and global and national sustainable finance initiatives. The project will support a positive impact towards socially, economic and ecologically sustainable development through mobilising resources into responsible infrastructure investment. The outcomes are:

- **Outcome 1.1. Natural capital accounts developed to enable policy, planning and decision-making in favour of ecological infrastructure** directly addresses the third barrier listed (see section A.1.1. above). The outputs that will support this outcome are:
 - **Output 1.1.1. Natural capital accounts are developed at the national level and the catchment level, and tested for informing planning, management and monitoring of ecological infrastructure for water security:** Natural capital accounts (NCA)¹⁸ are still in their infancy in South Africa, with significant data gaps and other challenges for the production of regular accounts. The lack of complete accounts in regular time series limits their usefulness. NCA offers a tool to inform development planning and decision-making in the economy, but its potential is some way from being realised. The accounts envisaged will include land and ecosystem accounts, catchment-level water resource accounts, and catchment level ecosystem accounts (for example, accounts for ecological infrastructure assets). This work will be coordinated by a NCA project lead in SANBI with support from a NCA project manager to be appointed within SANBI and the Environmental Accounting Unit at StatsSA who would undertake some of the work including building on their existing WRC funded project on national water accounts. Specialists consultants will help with particular aspects and UKZN will be closely involved in the work on catchment-level water resource accounts. The application of the accounts will be piloted in the demonstration catchments, in partnership with CMAs/proto-CMAs and other stakeholders. Close alignment with the work undertaken in Outcome 1.3 on financing infrastructure will be ensured.
 - **Output 1.1.2. Capacity, institutional arrangements and time series data to enable regular production of relevant NC accounts are established or strengthened:** This involves building the capacity and expertise needed for natural capital accounting, and assessing gaps in the data foundations that are necessary for priority natural capital accounts and determining how these can best be filled. This work will be coordinated by the NCA lead and project manager in SANBI with support of specialist consultants were necessary and in close collaboration with StatsSA, DWS and other relevant national departments or agencies. The project will seek alignment with relevant recommendations from the Biodiversity Finance Plan currently being developed through the South African pilot of the global Biodiversity Finance Initiative (BIOFIN) (which will have concluded by the time of this project's implementation). Further, the project will engage with international initiatives and networks, such as the Natural Capital Finance Alliance, the Finance Initiative of the United Nations Environment Programme (UNEPFI), the Sustainable Banking Network, and the World Bank's Wealth Accounting and the Valuation of Ecosystem Services (WAVES) programme, through investigating relevant methodology and tools and exploring ways in which lessons can be shared. The project will specifically seek linkages with WAVES, which aligns with the United Nations (UN) System of Environmental-Economic Accounting (SEEA) approach to ecosystem accounting, and other environmental accounting initiatives.
- **Outcome 1.2. Relevant policy frameworks, regulatory instruments and planning tools enable the integration of biodiversity and ecosystem services into water sector planning, finance and development:** The project design process highlighted the need for national enabling interventions to lay foundations for targeted interventions in development finance, such as through the water tariff. However the implementation of the water tariff through the Water Pricing Strategy requires policy and institutional strengthening before the financial and biodiversity benefits can be realized. Outcome 1.2 is therefore structured to address the policies that guide interventions and the regulations and planning tools that give effect to policy. Capacity considerations are central to this discussion. There are two outputs focused on strengthening necessary policy and planning processes:

¹⁸ Natural capital accounting is the process of accounting systematically for stocks and flows of natural resources at a national level. In some cases it is possible to disaggregate natural capital accounts to the sub-national level (for example, to the provincial or broad catchment scale), but this is often limited by data limitations. This is different to accounting for impacts and dependencies on natural capital at the project or business level, which requires a different approach from NCA at the national level.

- **Output 1.2.1. National water policies, strategies and regulatory instruments applicable to water, such as the National Water and Sanitation Strategy (3rd Edition NWRS) and the National Water Security Plan, reflect the importance of ecological infrastructure for water security:** This will be achieved through structured inputs, technical and capacity support provided by a sector policy specialist based at SANBI and working closely with the DWS, DEA and other stakeholders at a national level and the CMS at catchment level. The sector policy specialist will build on existing enablers for this type of work in the current (2nd Edition) NWRS and other policy instruments (such as the Water Pricing Strategy). The specialist will also act as a science-policy bridge to extract policy relevant information from research and pilot projects at catchment scale and feed this into policy development processes. Emphasis will be placed on drawing from science and practice to provide evidence-based inputs that build on the foundations already laid in key policy instruments for mainstreaming of water-related ecological infrastructure. Noting that offsets are often required as part of mitigating the impacts of infrastructure development, support will focus on strengthening the further development and application of offsets policy frameworks (especially those focusing on biodiversity and wetlands) in relation to water infrastructure to streamline implementation and maximize benefits to water security. This will result in the development of guidance for offsets triggered by future developments.
- **Output 1.2.2. Planning applicable to water resource management and water resource development supported to integrate biodiversity and ecological infrastructure considerations for water security:** Biodiversity and ecosystem services are currently not adequately considered during the pre-feasibility and feasibility analyses for dams and other water sector infrastructure developments. Drawing on experiences where this has been attempted, this output will develop recommendations for DWS Planning and Options Analysis to strengthen the role that biodiversity and ecosystems play in supporting water delivery by introducing biodiversity considerations into the planning and options analysis that is undertaken for future water sector infrastructure developments. The project will strengthen relationships between natural resource management and water resource management and development communities of practice to improve the prioritisation of rehabilitation projects towards water and biodiversity outcomes. This output will also engage with relevant institutions to develop approaches and methods for incorporating biodiversity and ecosystem services in support of water secure into Catchment Management Strategies.

These outputs are important enablers for interventions in outcomes 1.3, 2.1 and 2.2. This outcome contributes to addressing the first of the main barriers listed in section A.1.1 above, also supported by interventions in Components 2 and 3.

- **Outcome 1.3. Mechanisms for financing restoration and ongoing rehabilitation and maintenance of ecological infrastructure are tested and operationalized".** This outcome includes:
 - **Output 1.3.1. The management of water-related ecological infrastructure is progressively being incorporated into the cost of catchment management in line with the Water Pricing Strategy and other new and emerging policies and strategies:** Led by the sector policy specialist based at SANBI, this output will focus on working with DWS and the demonstration catchments to progressively and collaboratively implement the water pricing strategy to the benefit of ecological infrastructure management activities in specific catchments, and improved water security in general. The proposed activities entail working with the demonstration catchments to establish the work required to integrate and manage water-related ecological infrastructure in their catchments in support of ensuring sustainable water use by all users. The desired outcome is the application of the user-pays principle to the rehabilitation and maintenance of water-related ecological infrastructure, a goal supported by National Treasury, in order to provide a sustainable revenue source for the ongoing management of ecological infrastructure to the benefit of improved water security in specific catchments. This could also include mainstreaming into other finance mechanisms or new and emerging policies and strategies, such as the Waste Discharge Charge System or working with DEA NRM and other EPWP programmes to improve the water-related outcomes that they produce as part of their respective investments in natural resource management and rehabilitation.
 - **1.3.2. Method/tool is developed for the finance sector to strengthen the assessment and management of environmental risk within investment decision-making linked to water infrastructure finance:** Led by WWF and drawing on existing experience and networks, the project will work directly with South African finance institutions, particularly the DBSA, to develop a method/tool for the finance sector to strengthen the assessment and management of environmental risk within investment decision-making

linked to water infrastructure finance. The project will engage with, build on and ensure alignment with international initiatives (such as UNEPFI Sustainable Finance initiatives, the Natural Capital Declaration, the Natural Capital Finance Alliance and the World Bank WAVES programme) which are involved in developing tools and methods for improved natural capital valuation in finance institutions' decision making at organisation and project level. The final method/tool will be tested and peer reviewed (peer review could include WAVES, the UNEP-FI Natural Capital Financial Alliance or similar global good practice initiative). The existing tools used in project approval processes that this project might seek to influence include those used to assess credit and investment risk, scenario modelling, frameworks and indicators used for corporate reporting (e.g. sustainability), and others. Finally, there is an opportunity to work with DWS to ensure that ecological infrastructure is incorporated in business plans submitted for grant funding of water infrastructure such as through the Regional Bulk Infrastructure Grant and the Water Services Infrastructure Grant.

Linkages between this work (accounting for natural capital impacts and dependencies at the project level) and the work in Outcome 1.1 on natural capital accounting at the catchment scale will be explored to, wherever possible, enable synergies between the accounting approaches at these two difference scales. This project finance work will be explored through initiatives such as the UNEP- FI Natural Capital Finance Alliance and DBSA Natural Capital Project Finance Tool kits. This outcome contributes to addressing the second of the main barriers listed in section A.1.1 above.

Component 2 – Application of policies and financial mechanisms in the water value chain improves water security in critical catchments.

To streamline project management and implementation, the outcomes in this component have been organized according to a geographic focus (catchments). The success and sustainability of the catchment-based work undertaken in this component will after all depend on leadership and championship by the CMAs under whose jurisdiction these catchments fall. Continued degradation and loss of critical biodiversity areas and ecosystem services within the Berg and Breede and Greater uMngeni catchments will have dire implications for the ability of the CMA to sustainably provide water of a quantity, quality and assurance of supply required by users. Component 2 focuses on the application of approaches that integrate biodiversity and ecosystem services into water resource management in support of water security in the Berg-Breede (outcome 2.1) and the Greater uMngeni (outcome 2.2) catchments. Through Component 2 the project will address key institutional, operational, regulatory and financial challenges that exist in mainstreaming biodiversity and ecosystem services considerations into water resource management and water resource development in both systems:

- **Outcome 2.1 Enhanced organizational capacity and investment in ecological infrastructure in the Berg and Breede catchments have improved water resource management:**
 - ***Output 2.1.1. Institutional capacity within in the Breede and Riviersonderend catchments to identify, plan, budget for, assess benefits of and manage ecological infrastructure investments has been strengthened:*** Organisational capacity will be enhanced through the appointment and deployment of an Ecological Infrastructure Coordinator to the Breede Gouritz CMA and a full-time staff member appointed to support the Sonderend WUA and Berg River Irrigation Board. They will work with the CMA and other stakeholders to: support coordination of project activities, planning and rehabilitation of key ecological infrastructure; coordinate costing studies and support their uptake; manage the development of an ecological infrastructure plan and implementation strategy for the CMA as part of the CMS; support a baseline assessment and development of indicators; monitor the results and water-related impacts of interventions; and oversee implementation and convene a learning network (supported by resources in Component 3) on rehabilitation and maintenance of ecological infrastructure that feeds into the Catchment Management Forums to build broader capacity across the region and encourage land users to change behaviours. This will strengthen the CMAs and enable a more coordinated and targeted approach in terms of maintaining and rehabilitating ecological infrastructure.
 - ***Output 2.1.2. Full costs of rehabilitation and maintenance of water-related ecological infrastructure and associated compliance monitoring and enforcement (CME) are determined in order to support the mainstreaming of ecological infrastructure into the financing of water resource management and development:*** Stakeholders will be assisted to determine the full cost of water-related ecological infrastructure rehabilitation and maintenance, including invasive alien plant control and subsequent ecosystem rehabilitation, appropriate water weed control, and Waste Discharge Mitigation charges in the Berg catchment. The output will also determine the full cost of associated license, inspection and

enforcement capacity. This work will enable exploring the use of various funding mechanisms to support rehabilitation and maintenance of water-related ecological infrastructure.

- **Outcome 2.2 Enhanced organizational capacity and investment in ecological infrastructure in the Greater uMngeni catchment have improved water resource management**

- **Output 2.2.1 Institutional capacity within in the Greater uMngeni catchment to identify, plan, budget for, assess benefits of and manage ecological infrastructure investments has been strengthened:** This output focuses specifically on improving capacity and tools in the mandated institutions for integrating biodiversity and ecosystem services into the planning, budgeting and management activities of CMAs. Organisational capacity will be enhanced through the appointment and deployment of an Ecological Infrastructure Coordinator to the Pongola-uMzimvubu CMA (within which the Greater uMngeni catchment falls) and a full time Greater uMngeni Coordinator. The Greater uMngeni Coordinator will support project coordination, the continued functioning of the UEIP, and support and coordinate efforts of multiple actors in the maintenance and rehabilitation of key ecological infrastructure. The Ecological Infrastructure Coordinator will work with stakeholders to manage the development of an ecological infrastructure plan and implementation strategy for the CMA as part of the detailed CMS development process; do baseline assessments for quantity and quality indicators at strategic points in catchments; engage with land and natural resource use planning, regulation and compliance processes and policy frameworks within the provincial and local spheres of government to ensure alignment of planning frameworks and processes for water outcomes; incorporate NCA into the CMS development process; and support the Classification and RQOs.
- **Output 2.2.2. Full costs of rehabilitation and maintenance of water-related ecological infrastructure and associated CME are determined in order to support the mainstreaming of ecological infrastructure into the financing of water resource management and development:** Noting that the Waste Discharge Charge System can be used for certain water quality issues and not for others and requires sufficient data in order to calculate and apportion loads, the project will assist key stakeholders to: undertake studies to confirm the eligibility of catchments for implementing the Waste Discharge charge system and investigate alternative financial instruments for improving water quality; develop detailed costing from the CMA, including CMS implementation, CME, and waste discharge levies to better calculate the costs of ecological infrastructure protection, rehabilitation and maintenance and compliance management in the Water Resource Management Charge; and investigate the full costs of water for different user groups in the catchment and explore opportunities within the water value chain that ensure more equitable allocation of full costs for water amongst different users.
- **Output 2.2.3. Planning, prefeasibility, and licensing for infrastructure development has addressed the management and mainstreaming of ecological infrastructure, using examples such as the uMkhomazi Smithfield Dam, Spring Grove, Kamberg and Hlatikulu:** The project will work with stakeholders to influence investments in ecological infrastructure to support built infrastructure, drawing on lessons learned from infrastructure development using examples such as the uMkhomazi Smithfield Dam, Spring Grove, Kamberg and Hlatikulu. This output will identify, cost, develop an investment plan and coordinate ecological infrastructure management and maintenance opportunities within the dam catchments to secure and enhance the delivery of water-related ecosystem services. It will also assist key stakeholders to review offset examples to develop guidance on optimising outcomes for biodiversity and ecological infrastructure, paying for offsets, reducing risks, and options for where best to locate capital and maintenance costs for ecological infrastructure. Finally, this output will use experience developed during the regulatory approval processes (Water Use Licences and Environmental Authorisations) for Spring Grove Dam to make recommendations on how these processes can be strengthened and streamlined in future water infrastructure developments.

In each catchment coordinators will work closely with national DWS and DEA NRM as well as provincial departments, municipalities and other relevant organisations. The use of existing local platforms such as the UEIP and Catchment Management Forums will capitalise on existing relationships and networks in building the engagement required for more integrated approaches.

Component 3 – Social learning, credible evidence, and knowledge management improves the integration of biodiversity and ecosystem services into the water value chain.

Knowledge management and the generation of project relevant evidence is a priority of the GEF and has been accordingly recognized and integrated into the project design. Drawing on recent GEF and Scientific and Technical

Advisory Panel (STAP) guidance on knowledge management¹⁹, as well as a growing emphasis of the importance of social learning²⁰, a third component has been designed into the project.

Component 3 seeks to support a change in the way targeted public and private sector stakeholders and decision-makers engage with, think about and therefore integrate biodiversity and ecosystem services into water sector development planning and finance. Component 3 will draw from the knowledge generated and lessons learnt through the other components of work, and seek to support the effectiveness of project interventions through social learning. This component of work will seek to support and strengthen the work of existing organisations, such as the water sector's research body, the WRC, the NBI, the CMRA and the WWF-SA. The component is an essential part of the sustainability of the project, working to deepen capacity in existing organisations and networks active in the sector leaving them able to continue addressing the value of natural capital in their decision making around resource conflicts, trade-offs and scaling up opportunities for gains in the ecological, social and infrastructure investment nexus. There are two outcomes that interventions in this component seek to support:

- **Outcome 3.1. Project impact and sustainability is enhanced through targeted engagement with key stakeholders:**
 - ***Output 3.1.1. Coordinated knowledge management and social learning for change enhances project impact and sustainability:*** Knowledge management and social learning for change will be coordinated through a strategy developed and implemented with stakeholders and partners. It will set out the strategic interventions and implementation plan to enable robust knowledge management and social learning necessary for the change the project seeks, and to enhance the replicability and post-project sustainability of systemic project interventions. The strategy will be designed with relevant stakeholders (co-designed) to (a) begin the process of learning and working together, (b) ensure alignment with existing knowledge management and social learning initiatives, (c) better identify interventions that will be credible, salient and relevant, and (d) gain consensus and commitment to tracking effectiveness and impact of interventions. A Coordinator will be appointed through the project to enable the development and implementation of the strategy. Implementation and maintenance of the strategy will be overseen by a steering committee and a learning network officer within SANBI will support coordination. Three activities will contribute to this outcome by helping to bridge existing technical and operational capacity barriers through providing targeted support, assistance, facilitation, and guidance where necessary (and building on existing initiatives) and by working with identified recipients/stakeholders. This is considered critical for supporting social learning and improving capacity for managing and financing ecological infrastructure solutions to water security.
- **Outcome 3.2. Evidence of the value of ecological infrastructure for water security is credible, salient and relevant.** This outcome will be achieved through:
 - ***Output 3.2.1. Co-generated evidence base and impact assessment of pilot project interventions is generated, packaged appropriately and shared:*** The co-generation of evidence for the value of ecological infrastructure to water security will include a focus on assessing the impact of pilot project interventions. A co-generated evidence base and assessment of project impact that quantifies the water-related benefits of the ecological infrastructure interventions is a prerequisite for being able to activate some of the financial mechanisms discussed under components 1 and 2. It will also enhance learning (for project stakeholders and beyond) and will provide a basis for compelling evidence for the value of ecological infrastructure to water security. The evidence base will be overseen by partners with scientific credibility in the water sector.
 - ***Output 3.2.2. Monitoring and evaluation information enhances project implementation, learning and evidence:*** This output supports the outcome gathering monitoring and evaluation of information that tracks project progress, contributes to assessing impact, and strengthens institutional capacity and

¹⁹ Bierbaum, R., Stocking, M., Bouwman, H., Cowie, A., Diaz, S., Granit, J., Patwardhan, A., Sims, R., Duron, G., Gorsevski, V., Hammond, T., Neretin, L., and C. Wellington-Moore. (2014). 'Delivering Global Environmental Benefits for Sustainable Development. Report of the Scientific and Technical Advisory Panel (STAP) to the 5th GEF Assembly, México 2014'. Global Environment Facility, Washington, DC.

²⁰ Knowledge is the appropriate collection of information of different types with the intent of being useful. Knowledge of a particular topic may enable answering questions of 'how' something takes place, but the use of knowledge to create 'why' questions, or generate new knowledge requires cognitive and analytical ability, it requires understanding, which is enhanced through social learning interventions.

decision-making processes within the project team and with partners. The information will help to meet data needs identified in the knowledge management and social learning for change strategy and provide information necessary for internal and external evaluation. A collaborative process of identifying and developing indicators and gathering information will enhance learning and capacity building, particularly around gaps and inadequacies of available monitoring information and good indicators that can be used across different organisations.

These outcomes are fundamentally interwoven throughout the project, and support, enable and strengthen the outcomes and interventions in the other two components, and ultimately, the achievement of the project objective and contribution towards the project goal.

This component of work will seek to support and strengthen the work of existing organisations, such as the water sector's research body, the WRC, the NBI, the CMRA and the WWF-SA. The component is an essential part of the sustainability of the project, working to deepen capacity in existing organisations and networks active in the sector leaving them able to continue addressing the value of natural capital in their decision making around resource conflicts, trade-offs and scaling up opportunities for gains in the ecological, social and infrastructure investment nexus.

A.1.4) Incremental/additional cost reasoning

The project will develop a suite of policy and capacity incentives for mainstreaming the values of biodiversity and ecosystem services into national, regional and local development policy and finance, with a focus on the water value chain, and will demonstrate improved water security in two critical catchments, and will support a social learning process that increases project success and sustainability.

At a global level, the GEF funding for this project will deliver global environment benefits through the maintenance of water-related ecosystems services in over 200 000 hectares of by the removal of invasive alien plants, the rehabilitation of riparian zones and dryland and wetland rehabilitation. In particular, the improvement of ecosystem condition in catchments in strategic water source areas will result in the maintenance of the following water-related ecosystem services: water quality enhancement, flood attenuation, maintenance of dry season flows (base flow), and erosion control and sediment trapping. It will also ensure improved management, regulation and compliance monitoring of globally important biodiversity in South Africa. The project will avoid further loss of biodiversity and ecosystem services in global biodiversity hotspots through (a) restoration and maintenance of ecosystems (direct footprint) and (b) through improved management, regulation and compliance monitoring of globally important biodiversity in South Africa Improved planning, finance and development decision-making in the water sector will be enabled by tools developed, e.g. natural capital accounts and catchment-level water resource accounts and ecosystem accounts to inform Catchment Management Strategies and their implementation (indirect footprint). This in turn will enhance the national contribution to the achievement of the Sustainable Development Goals (SDG 2030) and the Aichi Strategic Goals (see section A.1.5).

The contribution to the achievement of the SDGs is explained in terms of the link between well-functioning ecological infrastructure and development. Functioning ecological infrastructure provides services that can contribute to poverty alleviation (SDG 1), food security (SDG 2), health and wellbeing (SDG 3), gender equality (SDG 5) and reducing inequality (SDG 10). The act of restoring ecological infrastructure to a functional state is a job creation activity, which can support economic growth, full and productive employment, as well as gender equality (SDG 5) and reducing inequality (SDG 8). The availability of clean water (SDG 6) is supported by healthy catchments and wetlands. Built infrastructure and human settlements (SDG 9 and SDG 11) are made more resilient when planned in conjunction with ecological infrastructure considerations, as well as the impacts of natural disasters, exacerbated by climate change (SDG 13), when protected by ecological infrastructure. Ecological infrastructure also contributes to climate change mitigation. The protection and sustainable use of biodiversity, marine and terrestrial (SDG 14 and SDG 15), is synonymous with the protection and sustainable use of ecological infrastructure. Efforts to improve social learning and influence behaviour change through education for sustainable development, often associated with ecological infrastructure interventions, contribute to ensuring sustainable production and consumption (SDG 12), and efforts to promote peaceful and inclusive societies, such as responsive and participatory decision-making at all levels.

At a national level, the work achieved through the GEF funding will specifically result in rehabilitation and maintenance interventions as well as improved land management practices in the demonstration catchments, with invasive alien plant removal and land restoration on 87 650 ha (this supports achievement of Aichi Targets 7, 9 and 14). There will also be an improvement of land and water use regulation across 4.58 million ha through the development of Catchment Management Strategies that mainstreams biodiversity and ecosystem services in the Berg-Breede and Greater Umgeni demonstration catchments (supports achievement of Aichi Target 2). The project will further improve understanding of the links between water resources, ecosystems, ecological infrastructure, and a range of social and economic factors, and will increase funding available for ecological infrastructure management and improved targeting of funds, resulting in both rehabilitated natural environments and increased water security. Through the project work, the project contributes to global, regional and local communities of practice and knowledge, for example, by demonstrating that ecosystem accounting, which is still considered an experimental component of natural capital accounting globally, can contribute in practical ways to the sound management of biodiversity and ecosystem services, thereby helping to remove barriers to investment in ecosystem accounting in other countries.

At a national level, the work achieved through the GEF funding will also support the implementation of national legislation, policies and strategies such as: the National Development Plan, the National Water Resource Strategy, National Water Act, DWS Strategic Outcome orientated goal one of improving, increasing the skills pool and building competencies within the sector, South Africa's NBSAP, South Africa's Water Security Plan. Finally, the project will build on, support and align with the implementation of finance solutions identified in the BIOFIN South Africa's Biodiversity Finance Plan. While BIOFIN is currently in the process of finalising its Resource Mobilisation Plan, with final finance solutions yet to be determined, there are strong opportunities for the two investments to leverage one another, particularly as this project is focusing on the water sector, water sector institutions and revenue streams. BIOFIN implementation will then be able to target other revenue streams.

The funding is necessary to clear national, regional and local barriers to integrating biodiversity and ecosystem services into the water value chain for improved water security, including:

- Weak institutional capacity, poor alignment and coordination between institutions along the water value chain.
- The lack of sustainable financing for managing ecological infrastructure in catchments for water security outcomes.
- Natural capital accounts related to catchments and ecosystems are not regularly produced and linked to socio-economic information, and therefore do not support planning, policy and decision-making and investments in favour of ecological infrastructure for water security.

A.1.5) Global environmental benefits

This project will contribute to GEF 6 Biodiversity Focal Area programme 10, Integration of biodiversity and ecosystem services into development and finance planning, and will contribute to social development and transformation that is ecologically sustainable as outlined in the NDP.

South Africa is one of the world's most biodiverse countries making it a very effective place to secure global benefits for conservation. Comprising 1% of the world's land surface it contains a disproportionate 10% of the documented fish, bird and plant species and 6% of the reptile and mammal species. GEF investment has significantly improved South Africa's capacity to manage and conserve its biodiversity through several mainstreaming projects, however there are ongoing pressures on biodiversity, including from demands on water resources. The 2011 National Biodiversity Assessment indicated that wetland, riverine, and estuarine ecosystems are the most threatened environments. The project (the GEF alternative) will work at a national enabling level as well as in the demonstration catchments to address some of the root causes of pressure on biodiversity in these most threatened ecosystems. In so doing it will deliver global environmental benefits.

Project interventions will result in a reduction in pressures on all three of South Africa's global biodiversity hotspots, six of South Africa's strategic water source areas, and numerous nationally and provincially identified biodiversity priority areas²¹ in the two demonstration catchments:

- The **Berg-Breede system** of catchments lie predominantly in the Fynbos Biome, home to the Cape Floristic Region global biodiversity hotspot (and one of the world's six floral kingdoms) but a small portion also extends into the Succulent Karoo biodiversity hotspot. The catchments hold within them numerous protected areas, two Ramsar sites, a frog hotspot, and the lower Berg floodplain and estuary, which is an Important Bird Area and is South Africa's second most important estuary for conservation of estuarine birds, fish, invertebrates and vegetation. 9.7% of its area is critical biodiversity area, and 54% of the wetlands and 15% of the river length are identified as FEPAs that should stay in good ecological condition to support sustainable use of water resources as well as conservation goals. Threatened species that occur in the area include 8 critically endangered butterflies and the critically endangered Geometric tortoise (*Psammobates geometricus*), 6 endangered butterflies and critically endangered Leatherback Turtle (*Dermochelys coriacea*). Additionally, a part of the area is well known for some of the country's greatest San rock art.
- The **Greater uMgeni system** of catchments fall into the Maputa-Pondoland-Albany global biodiversity hotspot and holds within them two Ramsar sites, one World Heritage Site, two Protected Environments and numerous Nature Reserves and Forest Wilderness Areas. 27% of its area is categorized as critical biodiversity area, 52% of the wetlands and 33% of the river length are identified as FEPAs that should stay in good ecological condition to support sustainable use of water resources as well as conservation goals. These areas provide a diversity of habitats protecting a high level of endemic and globally important plants and other species such as the critically endangered Durban Dwarf Burrowing Skink (*Scelotes inornatus*), 3 endangered butterflies, and the endangered Guenther's Dwarf Burrowing Skink (*Scelotes guentheri*), Cape vulture (*Gyps coprotheres*) and bearded vulture (*Gypaetus barbatus*). This combination of high species diversity and endemism and high threat of biodiversity loss is why the area falls into one of the global biodiversity hotspots. The Ukhahlamba Drakensberg World Heritage Site is also globally recognised for their exceptional natural beauty and the concentration of culturally and historically significant sites.

Integrating biodiversity and ecosystem services into the planning, finance and development in the water sector is critical to improving water security in these catchments and to avoiding further loss of biodiversity and ecosystem services in these globally and nationally important biodiversity areas. This will be enabled through

- (a) Restoration and maintenance of ecosystems (direct footprint):** The project will coordinate the implementation of natural resource management activities, including invasive alien plant removal, riparian rehabilitation, and dryland and wetland rehabilitation across 87 650 ha in order to maintain delivery of water-related ecosystem services over 200 000 ha. In particular, the improvement of ecosystem condition in catchments in strategic water source areas will result in the maintenance of the following water-related ecosystem services: water quality enhancement, flood attenuation, maintenance of dry season flows (base flow), and erosion control and sediment trapping.
- (b) Improved management, regulation and compliance monitoring of globally important biodiversity and improved planning, finance and development decision-making in the water sector** enabled by tool development, e.g. natural capital accounts and catchment-level water resource accounts and ecosystem accounts to inform Catchment Management Strategies and their implementation (**indirect footprint**): The project will improve land and water use regulation across 4.58 million ha through the development of Catchment Management Strategies that mainstreams biodiversity and ecosystem services in the Berg-Breede River system and Greater Umgeni River system.

Benefits of this work will include contributions to the improvement in the health of estuaries at the bottom of the catchments as well as the improvement of terrestrial ecosystem condition in the catchments where rehabilitation takes place with benefits to threatened species associated with these ecosystems. Successful implementation of this project will help to improve understanding of the links between water resources, ecosystems, ecological infrastructure, and a range of social and economic factors. Further, it will increase funding (or improve targeting of funds) available for ecological infrastructure management resulting in both rehabilitated natural environments and

²¹ These areas are prioritised because of they are Critical Biodiversity Areas, Ecological Support Areas, Freshwater Ecosystem Priority Areas and other biodiversity priority areas identified through systematic biodiversity plans at the national, provincial and metro scale.

increased water security. Further still, it will contribute to global, regional and local communities of practice and knowledge e.g. by demonstrating that ecosystem accounting, which is still considered an experimental component of natural capital accounting globally, can contribute in practical ways to the sound management of biodiversity and ecosystem services, thereby helping to remove barriers to investment in ecosystem accounting in other countries. This has a long-term benefit for biodiversity and ecosystem services that support water security.

As a whole, this project makes a substantial contribution to the achievement of the SDGs (as explained in A.1.4), as well as the implementation of the Strategic Plan of the Convention on Biological Diversity and the Aichi Targets, namely:

- Target 1: increased awareness of the values of biodiversity and the steps they can take to conserve and use it sustainably (supported by outcome 3.1 and outputs 3.1.1 and 3.1.2 specifically, and the project generally).
- Target 2 on integrating of biodiversity values into development planning (supported by the project as a whole, but specifically work in Outcome 1.1, 1.2, 1.3 and the catchment level costing exercises undertaken in component 2 that will be drawn up to a national policy level under 1.3).
- Target 3 on the development of positive incentives for the conservation and sustainable use of biodiversity (supported through Outcome 1.3).
- Target 5 on the reduced rate of loss of natural habitat (through the work to ensure that biodiversity and ecosystems services considerations are effectively integrated into early stage planning and prefeasibility analyses undertaken for water infrastructure development, that any trade-offs are transparent, and compensation or offsets are effectively planned and implemented for biodiversity outcomes).
- Target 7 on the sustainable management of forestry and agriculture areas (through Component 2 in particular, supporting to the development of Catchment Management Strategies that make use of biodiversity and ecosystem services information and will influence sustainable management of production sectors in catchments, including agriculture and forestry).
- Target 8 on the reduction of pollution to levels that are not detrimental to ecosystem functioning (through its focus on water sector infrastructure, the project will explore opportunities that harness ecological infrastructure, including through private sector partnerships, to ameliorate pollution particularly linked to poorly maintained wastewater treatment works).
- Target 9 on the control, eradication and management of invasive alien species (directly supported through work in catchments, Component 2, and nationally through Outcome 1.2 to influence NRM planning processes and 1.3 to improve sustainable long term funding);
- Target 11 on the conservation of areas important for biodiversity and ecosystem services (through the identification of priority biodiversity areas that deliver water-related ecosystem services and support for the expansion of protected areas through innovative opportunities linked to the development or management of water infrastructure).
- Target 12 will be supported by Component 2 through the development of Catchment Management Strategies that make use of biodiversity and ecosystem services information, including the integration of threatened species information in infrastructure development and management decision-making processes
- Target 14 on ecosystems that provide essential services (through Outcome 2.1 and 2.2 and at a national level in Outcome 1.2 and 1.3) ;
- Target 15 on carbon is supported through project interventions that support restoration – either directly, or indirectly through policy
- Target 17 through supporting a number of Strategic Objectives and outputs in South Africa’s revised National Biodiversity Strategy and Action Plan (NBSAP)
- Target 18 is supported the project ensuring that traditional knowledge, innovations and practices of local communities is respected in the design, implementation, monitoring and review of project activities in line with the project’s safeguards.
- Target 19 on the sharing and transfer of science and knowledge (through Outcome 3.2).
- Target 20 on the mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity (through biodiversity investments in water sector infrastructure planning, finance and development and as a project financed under Programme 10 of the GEF Biodiversity Strategy).

A.1.6) Innovativeness, sustainability and potential for scaling up

Innovation in the project is achieved through enhancing the extent to which ecological infrastructure support built infrastructure and improve water security in both planning and financing. This is particularly relevant and innovative given the emphasis on infrastructure as a lever for development and the potential for sustainable approaches to infrastructure development to contribute to the SDGs (SDG goals 1, 5, 6, 8, 9, 14 and 15) and the Aichi Targets (see section A.1.5). Innovative approaches to unlocking investments in the management and maintenance of ecological infrastructure in the water value chain will be pursued, including in the planning, financing (public and private), development (operations and maintenance) and monitoring of water infrastructure development. Specific examples of these innovations include supporting the implementation of the water tariff to ensure adequate, sustainable, and long term finance for investments in catchment rehabilitation and maintenance that delivers water related ecosystem services. Further, the expertise and networks of global initiatives²² and finance institutions will be harnessed to support the integration of the values of biodiversity and ecosystem services into tools used by finance institutions to ensure that the responsibilities for these costs are correctly allocated in the financing and development of infrastructure. These tools include corporate and project financial assessments and credit risk models, project balance sheets, income statements and the credit decision-making processes. A further innovation achieved through the application of the above mechanisms is that the full costs of the management, compliance, monitoring and enforcement of associated ecological infrastructure is integrated into the ongoing operations and maintenance costs of built infrastructure.

Additionally, strengthened capacity, knowledge management and social learning will support the innovation and transformational change in water resource management in South Africa necessary to improve water security and conserve important biodiversity areas. Knowledge management and social learning are important to encouraging new and innovative thinking, cultivating partnerships and collaborations, unlocking funding, and nurturing communities of practice through which novel approaches to natural resource management for strengthened water security outcomes can be implemented. They are thus important to stimulating innovation and transformational change that can enhance project impact and the likelihood of sustainability (increased catalytic effects, replication and upscaling).

At the core of this programme, is the drive to find innovative ways to ensure **sustainable financing** of biodiversity and ecosystem services towards ensuring water security. The project will work with public and private financial mechanisms to link catchment rehabilitation and maintenance to ongoing revenue streams outside of donor investments and public sector works programmes, e.g. ensuring that budget for catchment management is secured through the water tariff and that the financing of infrastructure development includes budget for associated impact and dependencies on ecological infrastructure. Whilst state funding of investments in ecological infrastructure is critically important, new, innovative and sustainable ways of financing the maintenance and rehabilitation of ecological infrastructure will be explored. The financial sustainability of these efforts will be secured through coordinated efforts of different agencies and institutions. The mainstreaming of biodiversity and ecosystem services into the various planning instruments will ensure that future interventions will be included into budgeting cycles and will receive funding.

Institutional sustainability in the project will be achieved through support to the development and implementation of policy, plans and management tools to ensure that ecological infrastructure is effectively integrated into the implementation of water resources management and water resources development. The structuring of the programme in terms of national policy and regulatory support provides the basis for ongoing implementation of the programmes development outcomes. By influencing policy and strategy, new approaches will become part of the day to day business of the DWS.

The project will seek to embed the capacity and tools for the management of ecological infrastructure into institutions responsible for water resources management and water resources development. The development of Catchment Management Strategies is key to placing biodiversity and ecosystem services at the heart of water security. The supporting policy and guidance from the DWS will be important to ensure that this is indeed mainstreamed. Further, the project will explicitly address building capacity at the catchment level with the private sector and will address capacity and institutional arrangements for ongoing production of priority natural capital accounts.

²² Such as the IFC, the Sustainable Banking Network, Natural Capital Finance Alliance, UNEPFI, and the World Bank's WAVES programme.

Despite the changes that have occurred in the democratisation of South Africa, there is still widespread poverty and inequality. Government's response to rising unemployment and wide spread poverty is to focus on job creation and economic growth. By integrating ecological infrastructure in water sector development, finance and planning in ways that support labour intensive ecosystem management, this project contributes to job creation and economic development, thus ensuring **social sustainability**. Ecosystem management also enhances or restores ecosystem functioning that underpins the delivery of services and makes ecosystems more resilient to shocks and disturbances. This contributes to avoiding ecosystem degradation, which increases water problems that often hit the poor hardest, exacerbating poverty, increasing risks associated with natural disaster hazards such as floods or droughts, and contributing to inequalities and disparities across groups (which can fuel social conflicts)²³. Avoiding environmental degradation and improving ecological functioning thus supports social sustainability in both the Berg-Breede and Greater uMngeni systems, where the livelihoods of rural communities and urban communities, private and public sectors are dependent on water, primary production and healthy ecosystems.

The project also places considerable emphasis on social learning, seeing it as a process through which society becomes aware of the discontinuities it is facing, and learns to engage with them, often through a community of practice, to make more informed choices including about lifestyles. This component therefore focuses on how social change comes about and ensures that effective knowledge management and social learning processes are put in place that ultimately transform understanding amongst key stakeholders so that the choices they make are based on sound knowledge of the value of biodiversity and ecosystem services for water security. Knowledge management and social learning are thus important to stimulating innovation and transformational change that can enhance project impact and the likelihood of sustainability (increased catalytic effects, replication and upscaling).

The interventions of this project, supported by the co-generation of an evidence base and assessment of project impact, are designed to achieve **environmental sustainability** including water-related benefits of ecological management. Making this case, in a way that encourages social learning for change in the process, will enhance opportunities for replication and continuation of efforts beyond the project timelines. The interventions should enhance the sustainability of water use through better integrating ecological infrastructure and improve resilience to shocks. Aligning with the DEA NRM Programmes, and influencing the prioritisation of areas for work of this ongoing government programme, provides the opportunity for sustainability and enhanced effectiveness in terms of water and biodiversity outcomes.

Opportunities for **replicability and the scale up** of project interventions will be pursued through a number of approaches. These include piloting interventions in two demonstration areas (comprised of three catchment management agencies) while also working with national institutions to take this experience to scale in other areas (nine catchment management agencies in total). In addition, the development of tools will be piloted with sector/industry representative bodies able to implement these tools at scale, e.g. NBI, WISA, SWPN, CMRA, WAVES, UNEPFI, IFC, the Sustainability Banking Network, Natural Capital Finance Alliance, and other sustainable finance initiatives. The project is also working to achieve greater investment in the management and maintenance of ecological infrastructure by the natural resource management sector, including DEA's NRM programmes, through infrastructure-linked finance and water pricing-linked revenue, enabling those programmes of work to be implemented at scale. Other project interventions in support of replicability include integrating biodiversity and ecosystem services in the NWRS to ensure that the water sector sees this approach as central to policy, planning and regulation; the development of natural capital accounts with a view to their eventual integration into the national statistical service will further strengthen planning regimes; and knowledge management and social learning for change to promote uptake in other catchments, as well as the sharing of learning with other networks and fora.

A.2. Child Project? If this is a child project under a program, describe how the components contribute to the overall program impact. N/A

²³ IIED. (2007). Water ecosystem services and poverty reduction under climate change. Issues Paper for discussion in developing a DFID research programme. Draft: March 2007. Available at <http://pubs.iied.org/pdfs/G00398.pdf>

A.3. Stakeholders. *Identify key stakeholders and elaborate on how the key stakeholder engagement is incorporated in the preparation and implementation of the project. Do they include civil society organizations (yes X /no ☐)? and indigenous peoples (yes X /no ☐)?*²⁴

A summary of stakeholder engagement is provided below:

Organisations engaged during PPG	Indicative project role
National Departments / public entities	
DEA: Natural Resource Management (NRM) Programmes, Environmental Advisory Services, Biodiversity, BIOFIN	Project steering committee member; DEA is the GEF focal point in South Africa; Support and guide on key policy issues. User of natural capital accounts. Focal point for SA's participation in the CBD and the Gaborone Declaration for Sustainability in Africa. Active partners in Component 2 of this project, they will assist in the planning of interventions to remove IAPs and rehabilitate riparian and wetland systems; DEA NRM programmes will be major partners in the project with a considerable co-finance and opportunity to demonstrate global environmental and socio-economic benefits through ensuring closer alignment between the prioritisation of NRM interventions and areas important for biodiversity and water outcomes; the BIOFIN project run through DEA will provide an important baseline of expenditure and biodiversity costing.
South African National Biodiversity Institute (SANBI)	Project executing agency; member and convener of the project steering committee; lead agency for the Natural Capital Component as well as policy advice; project co-financier; SANBI coordinates a number of biodiversity mainstreaming programmes which provide an important baseline for this project; SANBI also curates biodiversity information which this project will use in its monitoring and engagement with DWS and CMAs in CMS development; SANBI curates biodiversity information management systems which the project will draw on and support; project will build on the baseline of work of the Directorate: Ecological Infrastructure and the National Implementing Entity for the Adaptation Fund. Executing agency responsible for project management; coordinator of work under outcomes 1.1 and 1.2 and parts of 3
National Treasury	Project steering committee member; national department responsible for budget allocation mandated to ensure allocative efficiency; key partner on project's engagement with fiscal frameworks; key stakeholder and potential user of natural capital accounts.
DWS: Institutional Oversight, National Water Resource Planning, Water Ecosystems, Resource Quality Information Systems, Economic and Social Regulation, Water Resource Classification	Project steering committee member; National department responsible for South Africa's water resources; primarily responsible for the formulation and implementation of policy governing this sector. Key partner for project activities in support of policy, regulatory instruments; institutional strengthening; national water resource planning; integrating ecological infrastructure into DWS planning and options analysis and pre-feasibility processes. Supports improved planning instruments, the connectivity to the classification and Resource Quality Objectives processes. Supports and guides improved authorisation processes, systemising of data and information. Provides interface on policy issues to Top Management. Support the development of operational policy guides such as the CMS. Data provider for production of water-related natural capital accounts. Potential user of natural capital accounts. Institutional oversight supports institutional clarifications, capacitation of CMAs and linkages to Catchment Management Forums.
Department of Agriculture, Forestry and Fisheries (DAFF) - LandCare	Project steering committee member; DAFF is responsible for implementing the National LandCare programme, which has a WaterCare focus area and which supports the rehabilitation of ecological infrastructure; a key objective of DAFF is food security which requires water security; Support in terms of land practices linked to agriculture. Target audience for sharing lessons on improved implementing arrangements for biodiversity and ecosystem maintenance and rehabilitation.
Cooperative Governance and Traditional Affairs' Municipal Infrastructure Support Agent	The Municipal Infrastructure Support Agent is a national government component initiative and an integral part of the Department of Cooperative Governance's programme towards improving municipal infrastructure provisioning and maintenance for accelerated service delivery, in line with the objectives of the Back to Basics Strategy. Key stakeholder; plays an important role in supporting municipalities with infrastructure service delivery; If successful, later years will entail engagement with these departments to improve the integration of ecological infrastructure into relevant capital grant mechanisms.
Trans Caledon Tunnel Authority (TCTA)	The Trans Caledon Tunnel Authority (TCTA) is a key sector stakeholder and potential role-player in supporting integration of ecological infrastructure in planning and prefeasibility analysis of water infrastructure projects, learning from existing and setting guidance for future offsets, and financial

²⁴ As per the GEF-6 Corporate Results Framework in the GEF Programming Directions and GEF-6 Gender Core Indicators in the Gender Equality Action Plan, provide information on these specific indicators on stakeholders (including civil society organization and indigenous peoples) and gender.

	interventions. Project co-financier.
Stats SA	Project steering committee member; Overall responsibility for producing natural capital accounts, working in partnership with other organs of state. Lead role in producing National Water Accounts.
Water Research Commission (WRC)	Project steering committee member; Public agency falling under DWS, responsible for research related to the management and use of water resources and water ecosystems. Key role in coordinating component 3, and in co-financing development of catchment-level water resource and ecosystem accounts. Project co-financier.
Provincial / regional	
Breede Gouritz CMA, Berg Olifants Proto CMA, Pongola-uMzimkulu Proto CMA	Potentially key knowledge hub within the region. Key partners in both of the demonstration catchments (Component 2) and a target user/audience in Component 1 and 3. Breede Gouritz CMA and Berg Proto CMA (in the process of assuming functions) and Pongola-uMzimkulu CMA (gazetted in 2014) have key role in implementing Component 2. Facilitate a range of project activities within the water management area as well as provide the conduit for demonstration lessons into policy, strategy and guidelines at national level. As the central institution within the water management area they will play a key role in coordinating and liaising with a range of stakeholders. Become a focal point for coordination of planning and prioritisation of ecological infrastructure restoration. House a dedicated champion that performs an extension function to its constituencies.
Western Cape: DEA&DP, CapeNature, Ezemvelo KZN Wildlife, Gauteng Department of Agriculture & Rural Development, Limpopo Economic Development, Environment & Tourism, Mpumalanga Department of Agriculture, Rural Development and Environmental Affairs	Support the development of Catchment Management Strategies. Support to cooperative approaches to regulatory functions and compliance monitoring and enforcement. Provincial conservation authorities (CapeNature & Ezemvelo KZN Wildlife) able to provide data for catchment-level ecosystem accounts.
Western Cape Department of Agriculture, LandCare	Support the development of Catchment Management Strategies. Support to cooperative approaches to regulatory functions and compliance monitoring and enforcement.
Municipalities	
Municipalities - eThekweni, City of Cape Town, Winelands, Msunduzi Municipality, City of Tshwane	Responsible for planning, budgeting, service delivery, local economic development and spatial development planning, the role of these municipalities would be to support integrated planning aligned with the CMS. eThekweni and City of Cape Town are existing (eThekweni is a co-financier) and potential (City of Cape Town) partners in Component 2 in terms of support of interventions in the catchments. Support for CME in their areas of jurisdiction. Support operational aspects regarding ecological infrastructure. Potential to leverage the aqueduct project of eThekweni.
Academic	
UKZN	Role in applied research (such as related to producing catchment-level water resource accounts), teaching and capacity building related to hydrology and water resources research. UKZN has an implementing partner role in outcome 1.1 and a project co-financier.
NGOs	
CMRA	CMRA offers support to municipalities Southern Africa; they have coordinated the Dutch-funded Project Kingfisher which supports the establishment of CMAs by providing and brings together South African and Dutch water authorities and municipalities through a colleague-to-colleague approach towards improved local water management. Key partner in supporting the project CMAs and convening the CMA CEO Forum. Project co-financier.
WWF-SA	WWF-SA is drives water stewardship initiatives with both communities and corporations, identifies water risks, ensures healthy water-supplying landscapes such as wetlands, and enables water balance through the clearing of water-thirsty alien vegetation and restoring our river systems. Key partner on private finance risk activities in outcome 1.3 and on local NRM contractor skills readiness and contracting in outcome 3.1. Project co-financier.
Living Lands	Living Lands is a non-profit organisation created for the purpose of restoring living landscapes. Convener of a learning network in the Berg-Breede catchment; potential role in project

Wildlife and Environment Society of South Africa(WESSA)	Partner in the UEIP and holder of expertise in the water sector and in social learning
Duzi uMngeni Conservation Trust (DUCT)	Partner in the UEIP, implementer of ecological infrastructure support activities
Centre for Environmental Rights (CER)	The CER works to ensure every person's Constitutional right to an environment that is not harmful to health or well-being, and to have the environment protected for future generations, is fully realised. Project activities are aligned with work that CER is doing to protect strategic water source areas.
SA Cities Network	The South African Cities Network is an established network of South African cities and partners that encourages the exchange of information, experience and best practices on urban development and city management. It is an initiative of the Minister for Provincial and Local Government and nine of the country's largest municipalities, in partnership with the South African Local Government Association (SALGA). Key project stakeholder
Alliance for Water Stewardship	Partner in the UEIP; Alliance for Water Stewardship (AWS) is a multi-stakeholder organization dedicated to enhancing water stewardship capacity, and guiding, incentivizing and differentiating responsible water use.
Community based organisations (CBOs)	Support interventions with regard to Component 2 and 3. Provide targeted technical and operational capacity to bridge barriers and enhance project impact and sustainability, particularly at the catchment level and in bringing together private, public and civil society sectors to develop and implement catchment-wide solutions to water security.
UEIP: WRC, INR, UKZN, SAPPI, SANBI, DUCT, uMngeni Local Municipality, Alliance for Water Stewardship, Msinsi Resort and game reserves, DUCT, Ezemvelo KZN Wildlife, uMngeni Water Board, WWF SA, Mondi Wetland Programme, eThekweni Municipality	The UEIP aims to foster better collaboration and coordination of ecological infrastructure investments aimed at improving water security in the greater uMngeni catchment. The partnership is comprised of 36 government and civil society organisations who has signed a memorandum of understanding in support of the partnership to tangibly demonstrate the benefits of ecological infrastructure investments and its relevance to the South Africa's broader water security challenges. Key role in outcome 2.2.
	The DWS has established the Berg River Partnership (BRP) to ensure water quality of the Berg River is improved and sustainably managed by holding the partners accountable for their respective mandates. The project will support the BRP.
Sector bodies & private organisations	
Water Institute of South Africa (WISA)	Water sector membership-based organisation comprised of professional and organisational members. Project co-financier and key stakeholder in component 3.
Umgeni Water Board	Member of the UEIP and key stakeholder in outcome 2.2
SAPPI	Member of the UEIP
IFC, KudosAfrica	The IFC has a 3 year programme in South Africa to build capacity in regarding the incorporation of natural capital into banking decisions in SA. Significant alignment between work stream, and definite interest in collaboration with the GEF6 project identified. Will be key strategic partner in accessing private banking sector in South Africa.
Old Mutual AIIM, Nucleus, KudosAfrica, Anglo-American, UCT/WEF, Regenysis, Afena Capital, PDG	Group of investors interested in collaboration regarding responsible investment. Specific requests were made for the development of a tool to assist the financial sector in more accurately capturing their business risk, with several mentions made of the "true cost of water".
National Business Initiative (NBI)	Project steering committee member; voluntary coalition of South African and multinational companies, working towards sustainable growth and responsible business action. Implementing partner in outcome 3.1 to convene private sector (through NBI membership) in support of addressing catchment level water solutions.
International	
International financiers	United Nations Environment Programme Finance Initiative (UNEPFI) is running a project

such as UNEP Financial Initiative, IFC, World Bank WAVES	"Advancing Environmental Risk Management" to develop a methodology to map natural capital related risk for integration into financial sector credit risk assessment and has a component focused on South Africa. Project co-financier and key stakeholder
Local users	
Water User Associations	Berg River Irrigation Board: Irrigation Board and water user association established for the Upper Berg River - implementation partner in outcome 2.1 Zonderend Water User Association: Water user association established under the National Water Act - implementation partner in outcome 2.1
Project Implementing Agency	
DBSA	Project executing agency; Project steering committee; funder of water infrastructure

A.4. Gender Equality and Women Empowerment. *Elaborate on how gender equality and women's empowerment issues are mainstreamed into the project implementation and monitoring, taking into account the differences, needs, roles and priorities of women and men. In addition, 1) did the project conduct a gender analysis during project preparation (yes X/no ☐)?; 2) did the project incorporate a gender responsive project results framework, including sex-disaggregated indicators (yes X/no ☐)?; and 3) what is the share of women and men direct beneficiaries (women 55%, men 45%)?*²⁵

The project will address gender equality and women's empowerment through the following actions to be undertaken by the project during implementation:

Action	Potential indicators
Component 1: Enabling environment is strengthened for improving water security through the integration of biodiversity and ecosystem services in the water value chain.	
Promoting gender equality: <ul style="list-style-type: none"> The project executing agency and sub-executing agencies will adhere to employment equity targets. Use or encourage use of Broad-based Black Economic Empowerment (BBEE) scorecards for procurement Promoting gender sensitive inputs into relevant policy frameworks and regulatory instruments that enable the integration of biodiversity and ecosystems services into water sector planning, finance and development	Number of women and men employed through jobs created from the project
Component 2: Application of policies and financial mechanisms in the water value chain improves water security in critical catchments.	
Promoting gender equality: <ul style="list-style-type: none"> The project executing agency and sub-executing agencies will adhere to employment equity targets. Additionally, the NRM programmes operating at the catchment level have targets for employment and training of 55% Women, 65% youth, and 2% people with disabilities. Supporting involvement of women in water management institutions in the catchments. Includes relevant capacity building opportunities. 	Number of women and men employed through work opportunities aligned with the project Number of men and women trained through opportunities aligned with the project
Component 3: Social learning, credible evidence, and knowledge management improves the integration of biodiversity and ecosystem services into the water value chain.	
Mainstream gender into the knowledge management and social learning for change strategy: This will relate to empowering women through capacity strengthening opportunities, involvement in citizen science, participation in strategic dialogues and other platforms, ensuring knowledge products are gender sensitive, mobilising women's groups in support of the project, and/or promoting discussion of relevant gender sensitive aspects of ecological infrastructure for water security. This could further enhance project impact and sustainability (as described in GEF (2013) report on Mainstreaming Gender at the GEF). Generation of evidence of the impact of project interventions that is gender sensitive:	Number of men and women involved in the knowledge management and social learning for change strategy and its implementation Number of men and women and/or female-headed households shown to benefit from project interventions in catchments

²⁵ Same as footnote 8 above.

A.5 Risk. Elaborate on indicated risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, the proposed measures that address these risks at the time of project implementation (table format acceptable):

The project risks were reassessed during the PPG, in discussion with the PPG working group and project steering committee and risk mitigation measures identified. This is reflected in the risk matrix below:

Risk matrix

Risk category	Project risk	Risk level	Project management/mitigation
Institutional	Ongoing policy and institutional reform within the DWS diminishes policy priority for ecological infrastructure, resulting in lack of policy support for the project interventions. A review of the National Water Act is imminent, the NWRS is due for revision, and the Water Pricing Strategy pending final approval. Shifts in policy priorities and resultant institutional changes may pose risks to the project.	Low	The project will engage closely with the DWS through implementation, including at a Steering Committee level to stay abreast of and adapt to any policy changes that may impact on the project. The project design has, as far as possible, built in flexibility to accommodate shifts in priorities. In addition to direct engagement, the project will also engage in departmental policy processes to ensure comments and inputs are provided in any policy review processes.
	Capacity of institutions in the demonstration catchments inhibits their ability to absorb ecological infrastructure management functions as part of their mandate, resulting in ongoing institutional fragmentation for ecological infrastructure in the water value chain. CMAs are emerging institutions with an important role to play in the management and financing of ecological infrastructure within their Water Management Areas. There are three CMAs in the project area. As new institutions, they are in the process of understanding and absorbing their new mandates, as well as addressing other administrative and governance challenges. The establishment of CMAs has been particularly slow due to ongoing policy and institutional reform in the water sector; however it has been prioritised and fast-tracked in the NDP and NWRS. The project is well-aligned with and able to support efforts towards this national priority.	Medium	Under component 3, the project will work closely with the CEOs of the three CMAs, as well as their counterpart in the DWS to ensure it supports the development of capacity within CMAs to address ecological infrastructure management. In addition, also under components 1 and 3, the project will align with and support the work of other organisations that are supporting the establishment of the CMAs. The project design process has considered this risk carefully and accommodated for it in the final project design. This risk will be monitored and assessed by the project governance and review systems. A range of public, private, civil society institutions involvement will be drawn on to enhance capacity. The capacity of the financial services sector will also be drawn on to help mitigate this risk.
Social	Responsible institutions, as well as land users and owners, do not maintain the rehabilitation and maintenance of water-related ecosystems in the demonstration catchments, undermining project interventions, and resulting in failure to secure long term project benefits. Ecological infrastructure requires ongoing maintenance, much like built infrastructure Failure by responsible institutions, land	Medium	Under components 1 and 3 the project will work with key stakeholders, including organisations involved in natural resource management, the CMAs and custodians of resources at the local level to support processes that ensure the ongoing activities needed to maintain ecological infrastructure are in place, sufficiently resourced and operational. The significant co-finance raised from natural resource management programmes reflects the commitment and

Risk category	Project risk	Risk level	Project management/mitigation
	users and owners to maintain initial investments in ecological infrastructure could undermine the long-term benefits of the project.		buy in from stakeholders to working with this project in order to address this risk. Efforts to address the institutional risk above will also support mitigation of this risk.
Financial	Funds raised for ecological infrastructure through private or public financing mechanisms in the water value chain are not channelled to appropriate activities, causing underfunding of ecological infrastructure, resulting in ongoing ecological degradation and risk to built infrastructure.	Low	Institutions that finance infrastructure abide by stringent finance policies and procedures that are well-embedded within their organisations. This will ensure that funds allocated to ecological infrastructure in the private finance of infrastructure are channelled accordingly. Public finance is subject to a stringent set of audit and other financial controls to ensure effective and efficient allocation and utilisation of funds. In addition, through work in component 1, the project will support key institutions to clarify institutional processes for financing the management of ecological infrastructure.
Project	The Rand appreciates against the Dollar, or the inflation rate is higher than expected, causing underfunding of the project, resulting in failure to achieve project outcomes. The project budget is in US Dollars while implementation is in South African Rand, thus exposing the project to exchange rate risks which could affect the funding available for implementation and lead to budgetary constraints.	Low	This risk has been considered in the development of the project budget through the adoption of a conservative exchange rate. During project implementation, the exchange rate will be monitored and assessed by the executing agency's Project Financial Manager and implications and recommendations will be addressed in consultation with the implementing agency and the project steering committee during project implementation. The project implementing agency has appropriate expertise in place to manage this risk.

A.6. Institutional Arrangement and Coordination. Describe the institutional arrangement for project implementation. Elaborate on the planned coordination with other relevant GEF-financed projects and other initiatives.

This project will be implemented over a period of 5 years, from mid-2017 until mid-2022. The GEF's Implementing Agency for this project in South Africa is the Development Bank of Southern Africa. The national focal point for the GEF is the DEA and the project's Executing Agency is SANBI. As the Executing Agency, SANBI has overall responsibility for project implementation over the five-year period, and is therefore accountable for both project and financial management.

SANBI was established in terms of section 10 (1) of the National Environmental Management: Biodiversity Act, Act 10 of 2004. It is a public entity registered as a schedule 3A entity in terms of the Public Finance Management Act, Act 1 of 1999, and reports through its Board to the Minister of Environmental Affairs via the DEA. SANBI leads and coordinates research, and monitors and reports on the state of biodiversity in South Africa. The Institute provides knowledge and information, gives planning and policy advice and pilot's best-practice management models in partnership with stakeholders. SANBI also engages in ecosystem restoration and rehabilitation, and leads the human capital development strategy of the biodiversity sector.

As the Executing Agency SANBI will sign the grant agreement with DBSA and will be accountable to DBSA for the disbursement of funds and the achievement of the project objective and outcomes according to the approved work plan. In particular, the Executing Agency will be responsible for the following functions: (i) coordinating activities to ensure the delivery of agreed outcomes; (ii) certifying expenditures in line with approved budgets and work-plans; (iii) facilitating, monitoring and reporting on the procurement of inputs and delivery of outputs; (iv) coordinating interventions financed by GEF/DBSA with other parallel interventions; (v) approval of Terms of

Reference for consultants and tender documents for sub-contracted inputs; and (vi) reporting to DBSA on project delivery and impact.

Project implementation will be managed in close collaboration with Sub-Executing Agencies who have been identified as such through the project design process and include, but are not limited to:

- National organs of state including the DWS, Stats SA, and the WRC,
- At the regional level, CMAs or the regional offices of DWS currently acting as Proto CMAs (including the Pongola-uMzimkhulu CMA, the Breede Gouritz CMA, and the Berg Proto CMA),
- At the local level, water user associations, including the Berg Irrigation Board and the Sonderend Water User Association, and
- Private sector representative bodies, NGOs, academic and other organisations with particular expertise and networks aligned with the project's objective and outcomes, including the National Business Initiative (NBI), the CMRA, WWF-SA and UKZN.

Critical to project implementation is engagement and alignment with relevant organisations, networks and fora, including, but not limited to:

- Water sector organisations and networks, including WISA, the Strategic Water Partners Network (SWPN), water boards, including Umgeni Water
- Finance institutions and representative bodies such as the IFC, the Sustainability Banking Network, Natural Capital Finance Alliance, UNEPFI, the World Bank's WAVES Programme and the DBSA,
- Agencies responsible for the development of water sector infrastructure, such as the TCTA and the DBSA,
- Programmes, departments and authorities responsible for land management activities, including provincial conservation authorities, national and provincial natural resource management programmes, including DEA's Natural Resource Management Programmes and DAFF's LandCare Programme.
- Municipalities, including the relevant district, local and metropolitan municipalities such as eThekweni and the City of Cape Town in the project area,
- Catchment level partnerships, such as the UEIP, the Berg River Partnership, and others.

To facilitate oversight and direction regarding project implementation, SANBI will take responsibility for establishing and maintaining a Project Steering Committee (PSC) which will be comprised of representatives of all the project partners on the basis of a Terms of Reference which will be negotiated at project launch. The DBSA will also serve on this PSC. The PSC will meet twice yearly and will direct and steer the project, including approving the annual work plan and budget. An Implementing Agency Oversight Committee consisting of representatives from the DBSA and SANBI will be established. This committee will meet alongside the Project Steering Committee twice yearly/as needed and will approve project progress reports and plans.

SANBI will establish a Project Executing Team responsible for delivery of the project. The Project Executing Team will consist of a:

- A Project Leader will be responsible for providing high level strategic and technical direction across the project as well as providing direction to the Project Management Unit (PMU) on project implementation and management.
- A Natural Capital Accounting Project Manager responsible for coordinating activities in outcome 1.1, an NCA specialist with spatial and ecological expertise, and a GIS technician.
- A Water Sector Senior Policy Advisor will be appointed in SANBI and responsible for technical leadership and water sector policy engagement as well as coordination of activities in outcomes 1.2 and 1.3.
- A Knowledge Management Coordinator will be appointed by the WRC to provide leadership to and coordinate the activities in outcomes 3.1 and 3.2.
- A PMU which provides the necessary administrative and operational support for the day to day running of the project and procurement. The PMU will consist of a Project Coordinator, a Project Administrator, a Financial Manager and a Finance Officer. The Project Coordinator will support the project's reporting functions. The Finance Officer will be responsible for providing procurement support and financial administration support while the Finance Manager will provide direction and oversight to ensure compliance with the financial management requirements of the DBSA and SANBI. (The Finance Manager, part of the Finance Officer's salary and the Project Administrator will not be paid using project resources but through SANBI co-finance.)

- In collaboration with sub-executing agencies at the regional and local level, Ecological Infrastructure Coordinators will be appointed in each of the demonstration catchments (Berg-Breede and Greater uMngeni) with responsibilities for coordinating project activities within the catchments, managing the development of an ecological infrastructure plan and implementation strategy for the CMA as part of the detailed CMS development process.

These implementation arrangements are shown in Figure 15.

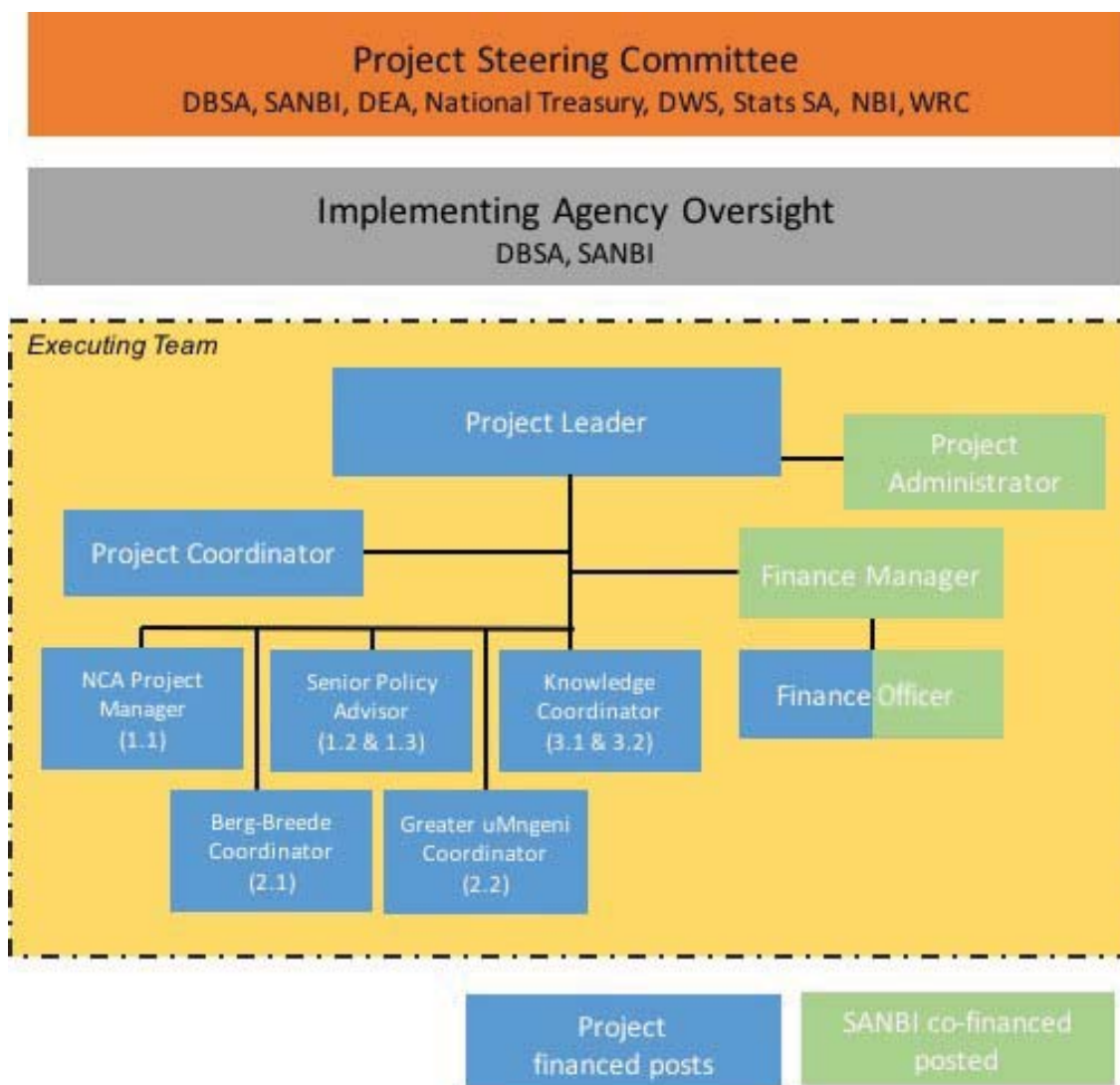


Figure 15. Project Management Arrangements

Additional Information not well elaborated at PIF Stage:

A.7 Benefits. Describe the socioeconomic benefits to be delivered by the project at the national and local levels. How do these benefits translate in supporting the achievement of global environment benefits (GEF Trust Fund) or adaptation benefits (LDCF/SCCF)?

The project aims to improve the management of catchment areas, especially strategic water source areas and biodiversity priority areas, that deliver important water-related ecosystem services to rural communities and small towns in the catchments and to two major cities in South Africa, namely the City of Cape Town and eThekweni Metropolitan Municipality. The primary socio-economic benefit of the project is therefore to improve water security in these areas. This will be achieved through a coordinated suite of project interventions that strengthen water

security through the integration of biodiversity and ecosystem services into applicable policy, regulatory instruments, planning frameworks and financial mechanisms at a national enabling level. These mechanisms will be tested at a catchment level to strengthen water security in critical catchments.

The project is aligning with and aiming to strengthen the water outcomes of DEA's Natural Resource Management programmes, including Working for Water, Working for Wetlands and others. Through this alignment, the project seeks to strengthen the water outcomes of the NRM programmes, further contributing to water security. In addition, as work that is fundamentally labour intensive (and reinforced by design, through its EPWP modalities), there are significant other socio-economic benefits, including employment, skills and health.

One stated goal of DEA's NRM programmes is to invest in the most marginalized sectors of South African society, enhance their quality of life, and ensure that benefits would target those people who needed them most, including the 'poorest of the poor', women, the disabled, youth, single-headed households, individuals living with HIV/AIDS, ex-offenders, and rural communities. Job creation is therefore a major goal of this EPWP-funded programme. Through alignment with these programmes, both nationally and at catchment level, the project will support the creation of 1 302 709 person days²⁶ or 5663 years' work for one person.

Gender is addressed in the NRM programmes with a target to ensure that at least 60% of the wages would be earned by women. The NRM programme addresses workers' need to secure meaningful work after their two years of employment through a contractor scheme which seeks to wean people off a daily wage approach to work and through the provision of training and business development support. In addition, gender empowerment and mainstreaming will be addressing through the application of the gender action plan linked to the project.

Through interventions in policy and financial mechanisms such as the implementation of the water price, the project is looking to integrate labour intensive natural resource management into the water value chain. The intention is to improve the financial sustainability of the NRM sector and to significantly grow the NRM sector as a labour intensive generator of employment, especially in rural areas where other employment opportunities are limited.

A.8 Knowledge Management. Elaborate on the knowledge management approach for the project, including, if any, plans for the project to learn from other relevant projects and initiatives (e.g. participate in trainings, conferences, stakeholder exchanges, virtual networks, project twinning) and plans for the project to assess and document in a user-friendly form (e.g. lessons learned briefs, engaging websites, guidebooks based on experience) and share these experiences and expertise (e.g. participate in community of practices, organize seminars, trainings and conferences) with relevant stakeholders.

Recognition of the importance of knowledge management to the achievement of the project objective and outcomes, as well as to replicability and sustainability, lead to the inclusion of a Component 3 on knowledge management and social learning. There are two outcomes that interventions in this component seek to support:

- Project impact and sustainability is enhanced through targeted engagement with key stakeholders (outcome 3.1), and
- Evidence of the value of ecological infrastructure for water security is credible, salient and relevant (outcome 3.2).

A knowledge management and social learning strategy and implementation plan will, in participation with partners, will be developed in the first year of the project. Guided by the strategy, the project will:

- Disseminate results within and beyond the project intervention zone through existing information sharing networks and forums
- Focus on facilitating horizontal learning between different catchments and institutions as well as vertical learning between different spheres of government.
- Identify and participate, as relevant and appropriate, in scientific, policy-based and/or any other networks, which may be of benefit to project implementation through lessons learned.

²⁶ Defined by the EPWP as a full day's employment for 1 person. The full time equivalent is employment one person for a year. One person year is equivalent to 230 days of work.

- Identify, analyse, and share lessons learned that might be beneficial in the design and implementation of similar future projects.
- Facilitate two-way flow of information between this project and other projects of a similar focus.
- The knowledge management and social learning for change strategy (developed in Component 3) will be overseen by a Reference Group to adaptively manage and optimise implementation.
- Connect with international learning networks such as those coordinated by UNEPFI, the IFC, the Sustainability Banking Network, Natural Capital Finance Alliance, and the World Bank's WAVES Programme.

B. DESCRIPTION OF THE CONSISTENCY OF THE PROJECT WITH:

B.1 Consistency with National Priorities. Describe the consistency of the project with national strategies and plans or reports and assessments under relevant conventions such as NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, etc.:

The project is the result of extensive consultations at the national and catchment level that have taken place over the past 18 months with key stakeholders to define the priorities for programming the GEF 6 Biodiversity Focal Area allocation. As a result, this project is country-driven, consistent with and supportive of national development strategies and plans that relate to green growth and sustainable development, with a focus the SDGs. The project is aligned with a number of national policies and plans, including:

- **National Development Plan:** The current plan for South Africa's development path is the National Development Plan (NDP) developed by the National Planning Commission established by the Presidency in 2009. The Diagnostic Report supporting the NDP identifies poorly located, inadequate and under-maintained infrastructure as one of nine major challenges facing South Africa. Addressing these failings in South Africa's infrastructure base is therefore seen as an enabling milestone in achieving the development goals of eliminating income poverty and reducing inequality by 2030. Chapter 5 of the National Development Plan (NDP) 2030 recognises the importance of biodiversity and ecosystems, laying policy foundations for further investment in South Africa's biodiversity assets and ecological infrastructure.
- **National Infrastructure Plan** (2012) details eighteen Strategic Integrated Projects (SIPs), located across the country with a focus on lagging regions, to fast track development and growth. An investment from the public purse of R850 billion over period 2012 – 2015 was earmarked for these infrastructure investments. This project is aligned with SIP 18, a nation-wide project to fast track delivery of water and sanitation infrastructure. This project has been designed in consultation with the SIP 18 coordinator to support the objectives and development impacts of SIP 18. The uMngeni river catchment was identified as the first national priority for a proposed 19th SIP on Ecological Infrastructure and Water Security. Although still pending approval, this project is fundamentally aligned with SIP 19 objectives.
- Outcome 6 of the **Medium Term Strategic Framework**²⁷ seeks "An efficient, competitive and responsive economic infrastructure network", with sub-outcome 4 focused on ensuring the maintenance and supply availability of bulk water resources infrastructure. This project directly supports these outcomes by implementing interventions to mainstream ecological infrastructure into South Africa's water infrastructure network.
- The project supports a number of strategic objectives in **South Africa's recently revised National Biodiversity Strategy and Action Plan** including Strategic Objective 2: *Investments in ecological infrastructure enhance resilience and ensure benefits to society*; Strategic Objective 3: *Biodiversity considerations are mainstreamed into policies, strategies and practices of a range of sectors*, and Strategic Objective 4: *People are mobilised to adopt practices that sustain the long-term benefits of biodiversity*.

²⁷ The **Medium Term Strategic Framework (MTSF)** guides government's programme of work in a particular electoral period. The current MTSF period is 2014-2019. It provides a prioritised framework for focusing government efforts on strategic priorities for moving South Africa to an environmentally sustainable, climate change resilient, low-carbon economy. The 12 Outcomes in the Presidential Delivery Agreement articulate in more detail the strategic priorities of the Medium Term Strategic Framework (MTSF) and are accompanied by measurable outputs, key activities and Outcome Delivery Performance Agreements between the President and Ministers. The MTSF in turn provides guidance for achieving the National Development Plan (NDP) 2030 priorities.

- The project will support the implementation of a number of aspects of the **National Water Act (Act 108 of 1998)**, including providing input into the Catchment Management Strategies of the three CMAs with which it is working, namely the Breede Gouritz, the Berg Proto and the Pongola to uMzimkulu Proto CMAs.
- **National Water Resource Strategy:** The NWRS2 has specific chapter on Water Resource Protection which addresses many of the challenges and opportunities addressed by this GEF project. The project is fundamentally aligned with the NWRS and has a key role to play in supporting the development of the National Water Security Plan.
- **National Water Pricing Strategy:** The Pricing Strategy for Water Use Charges (enabled by the National Water Act) provides the framework for pricing the use of water from South Africa's water resources. This project will seek to contribute to lifting some of the barriers to implementation of the Pricing Strategy working closely with DWS and the CMAs.
- **South Africa's Statistics Act (Act 6 of 1999)** is in the process of being revised. The project will enable stakeholders involved in natural capital accounting to participate in the revision of the Act, to strengthen environmental aspects and to ensure that the revised Act provides an enabling platform for natural capital accounting. In addition to the revision of the Statistics Act, Stats SA is engaged in an internal process of making links between the National Statistical System and natural capital accounting. The project will support this process by strengthening experience with natural capital accounting.
- **National Climate Change Response White Paper:** In integrating biodiversity and ecosystem services into the water value chain to improve water security, the project is contributing to climate change adaptation policy imperatives under the National Climate Change Response White Paper, the national Strategic Framework and Overarching Implementation Plan for Ecosystem-based Adaptation and other climate change policy frameworks.

Comparative Advantage of the Agency

The project is directly aligned to the DBSA's strategic objectives and mandate of providing sustainable infrastructure project preparation, financing and implementation support within South Africa and regional economic integration. The DBSA has identified the water sector as a key social infrastructure sector for financing. The Bank is particularly concerned with pursuing an integrated approach to addressing the water security particularly with regard to the food, water, energy and biodiversity nexus. Financing sustainable bulk and reticulation solutions within the water sector requires supporting sustainable (equitable, efficient, effective) resource management to improve water security (both quantity and quality). The key focus of this project, namely to develop an enabling environment for mainstreaming the value of ecosystem services into development policy, planning and financial incentives is thus directly aligned to the core mandate of the DBSA.

Ad hoc, inconsistent and poor natural capital management results in poor water quantity and quality, damaged infrastructure, shortened life span of infrastructure, inefficient use of resources, increased social inequality, environmental disasters, economic loss, social conflict and reputational risk of the financial institutions involved. The project provides a critical opportunity for the DBSA to identify and test how biodiversity and ecosystem values can be appropriately financed within the water infrastructure delivery cycle. Failure to respond to increasing pressure on natural resources will lead to increased incidences of poor project performance against anticipated project outcomes and increased incidences of project failures.

C. DESCRIBE THE BUDGETED M & E PLAN:

The table below provides a summary of planned monitoring and evaluation activities, responsibilities, budget and time frames.


Type of monitoring and evaluation activity	Responsible parties	Budget US\$ excluding project team staff time	Time frame
Inception Workshop and Report	Project Leader, Project Executing Team, project partners, DBSA	Indicative cost: R50 000	Within first two months of project start up with full team on board
Develop and implement a monitoring and evaluation system that supports project impact assessment, including Measurement of Means of Verification of project results.	Project Leader Knowledge Coordinator	Indicative cost: R350 000	Within first 6 months of project start
Measurement of Means of Verification of	Project Leader will oversee	To be finalized in	Start, mid and end of

Type of monitoring and evaluation activity	Responsible parties	Budget US\$ excluding project team staff time	Time frame
project results.	the hiring of specific studies and institutions, and delegate responsibilities to relevant team members	Inception Phase and Workshop.	project (during evaluation cycle) and annually when required
Measurement of Means of Verification for Project Progress on output and implementation	Oversight by Project Leader	To be determined as part of the Annual Work Plan's preparation.	Annually prior to ARR/PIR and to the definition of annual work plans
Annual Project Review/Project Implementation Reports (APR/PIR)	Project Leader with support of Executing Team, DBSA	None	Annually
Periodic status/ progress reports	Project Leader with support of Executing Team	None	Quarterly
Mid-term Review	Project Leader with support of Executing Team, DBSA, External Consultants (i.e. evaluation team)	Indicative cost: R400 000	At the mid-point of project implementation
Terminal Evaluation	Project Leader with support of Executing Team, DBSA, External Consultants (i.e. evaluation team)	Indicative cost: R500 000	At least three months before the end of project implementation
Audit	DBSA Project Leader, Finance Manager	Indicative cost per year: annual R50 000, total R250 000	Yearly
Visits to field sites	DBSA (as appropriate) Government representatives	For GEF supported projects, paid from IA fees and operational budget	As required
TOTAL indicative COST excluding staff & DBSA costs	R1 550 000 or US\$120 000 (+/- 2% of total GEF budget)		

PART III: CERTIFICATION BY GEF PARTNER AGENCY(IES)

A. GEF Agency(ies) certification

This request has been prepared in accordance with GEF policies²⁸ and procedures and meets the GEF criteria for CEO endorsement under GEF-6.

Agency Coordinator, Agency Name	Signature	Date (MM/dd/yyyy)	Project Contact Person	Telephone	Email Address
Nomsa Zondi Nomsaz@dbsa.org +27(0)113133491		1 December 2016	Julie Clarke	+27113133099	juliec@dbsa.org

²⁸ GEF policies encompass all managed trust funds, namely: GEFTF, LDCF, and SCCF

ANNEX A: PROJECT RESULTS FRAMEWORK (either copy and paste here the framework from the agency document, or provide reference to the page in the project document where the framework could be found).

Objective/ outcome	Outcome Indicator	Baseline	Mid-term target	End of project target	Source of Information	Risks & assumptions
1.1 Natural capital accounts developed to enable policy, planning and decision-making in favour of ecological infrastructure	One set of national ecosystem accounts published by Stats S.A. One set of catchment-level ecosystem accounts published within each demo catchment.	Pilot land and ecosystem accounts for one province and national river ecosystem accounts produced as part of ANCA project, but no resources for further production of accounts.	Draft set of national ecosystem asset accounts completed. Draft set of catchment-level ecosystem accounts underway within each demo catchment.	Final set of national ecosystem asset accounts completed. Final set of catchment-level ecosystem accounts completed within each demo catchment.	National ecosystem accounts publication. Catchment-level ecosystem accounts publication (x2).	Relevant data available in time series to produce accounts – both national and catchment-level.
1.2 Relevant policy frameworks, regulatory instruments and planning tools enable the integration of biodiversity and ecosystems services into water sector planning, finance and development	1 national policy reflects the importance of ecological infrastructure. Regulatory instruments support the integration of ecological infrastructure	NWRS 2nd edition introduced ecological infrastructure	Inputs provided to policy development & regulatory tool processes	1 national policy influenced. Regulatory instruments reflect ecological infrastructure.	Policy documents Regulations	NWRS process takes place and is concluded by the end of the period. Stability in the legal and regulatory environment.
1.3 Mechanisms for rehabilitation and ongoing maintenance of ecological infrastructure are in place and operationalized	Completion of foundational work in catchments to enable operationalization of ecological infrastructure components of the Water Pricing Strategy. Tool/method implemented to strengthen the assessment and management of environmental risk within investment decision-making.	Pricing strategy (2007) is in place, allows for funding of a narrow range of ecological infrastructure activities, and implemented in a fragmented way. 2015 Pricing Strategy in the process of being approved by DWS. Value of services and upstream dependencies on ecological infrastructure is not systematically and consistently factored into corporate and project financial assessments and credit	Funding is allocated within CMA budget for rehabilitation and ongoing maintenance of ecological infrastructure. Key private institutions identified who are able to shift from impact mitigation to ecological infrastructure investment through the use of the tool.	Financial flows for rehabilitation and ongoing maintenance of ecological infrastructure from water pricing operationalized in demo catchments. At least one South African finance institution implements the tool to strengthen the assessment and management of environmental risk within investment decision-making.	CMAs Finance institution	2015 Water Pricing Strategy is approved and gazetted. Ability to retain funds raised through tariff realized at CMA/relevant institution level. CMAs willing to integrate management of ecological infrastructure into basis of costing. Finance institutions will be willing and able to develop, share, refine and implement methods/tools.

Objective/ outcome	Outcome Indicator	Baseline	Mid-term target	End of project target	Source of Information	Risks & assumptions
2.1 Enhanced organizational capacity and investment in EI in the Berg and Breede catchments have improved water resource management	Number of hectares of catchment better managed through CMS implementation Number of wetlands rehabilitated Number of hectares of land rehabilitated	CMS does not adequately address EI 87 wetlands rehabilitated 5 849 baseline hectares rehabilitated	At least 1 CMS developed 102 wetlands rehabilitated (15 additional wetlands) 7 420 hectares rehabilitated (1 571 additional hectares)	2 CMSs developed resulting in improved management over 2 584 030 ha 112 wetlands rehabilitated (10 additional wetlands) 9 777 hectares rehabilitated (2357 additional hectares)	CMAs DEA NRM	EPWP funds continue to flow to DEA NRM
2.2 Enhanced organizational capacity and investment in ecological infrastructure in the Greater uMngeni catchment have improved water resource management	Number of hectares of catchment better managed Number of wetlands rehabilitated Number of hectares of land rehabilitated	CMS does not adequately address EI 5 wetlands rehabilitated 28 676 hectares rehabilitated	1 CMS developed 11 wetlands rehabilitated (6 additional wetlands) 48 355 hectares rehabilitated (19 679 additional hectares)	1 CMS developed resulting in improved management over 1 992 121 ha 15 wetlands rehabilitated (9 additional wetlands) 77 873 hectares rehabilitated (49 197 additional hectares)	CMAs DEA NRM	EPWP funds continue to flow to DEA NRM
3.1. Project impact and sustainability is enhanced through targeted engagement with key stakeholders	Improvement in key decision-maker survey/tracking tool	Baseline to be determined on project implementation	To be determined	To be determined	Tracking tool/survey	Decision-makers (leaders and managers) make themselves available. There is adequate continuity in leadership.
3.2 Evidence of the value of ecological infrastructure for water security is credible, salient and relevant	Number of evidence-based knowledge products shared with target audience	None	Under way	2 evidence based knowledge products	Knowledge products	Able to influence research calls of the sector research commission. Sufficient funding to undertake credible research.

ANNEX B: RESPONSES TO PROJECT REVIEWS (from GEF Secretariat and GEF Agencies, and responses to comments from council at work program inclusion and the convention secretariat and STAP at PIF).

Project ID 9073 – Response to Comments on the PIF

STAP comment	Response
<p>The threats and impacts in this project concept note are well described, as are the major barriers. In addition, the basic idea behind this project is exciting. It contains some very interesting ideas about how to manage water tariffs to be reinvested in catchment management based on sound economic analysis of costs and benefits.</p> <p>However, the text is complex and difficult to follow. In addition, the mechanisms to deliver on these ideas are vague, complex and insufficiently developed, and made more so by the quality of the narrative. In short, this project appears to have great potential; however, the PIF needs to be put together much more succinctly for the reader to be able to understand and assess the project.</p>	<p>The STAP comments are well noted.</p> <p>PPG funds have been used to improve the narrative and to improve the rigour, logic and level of detail of the project design.</p> <p>All deviations from the PIF are documented in the Project Document and explained in the CEO Endorsement Template.</p>
<p>The most clearly written and operational Outcome is for the two river catchments (Outcome 4). A stronger approach might be for the project to replicate the South African Grasslands approach of involving communities of practice in solving real problems together to develop guidelines, analyses, etc. that are then adopted at higher levels. STAP recommends that this should be the operational focus of this project, with the development of valuation and training material (outputs 2.2, 2.3, 2.4) and economic valuations (outputs 5.1, 5.2) being part of this. It also seems that outputs 6.1 to 6.4 fit directly under these pilots, and it is hard to follow what is meant by outputs 5.2 to 5.5 and if these are intended to be applied in the two catchments or nationally.</p> <p>The second output would then be the stakeholder process of building a 'community-of-practice' and incorporating these practices as guidelines, norms, and eventually new regulations and financing systems at national level.</p>	<p>The comments are well received.</p> <p>We note that SANBI, the executing agency of this project, was also the Executing agency for Grasslands Project. Thus, the knowledge and institutional capacity of SANBI will be readily available to support this project.</p> <p>PPG funds have been used to review the suggested changes in the architecture of the project, with particular emphasis on the necessary activities to deliver the proposed outcomes in the demonstration catchments. The demonstration level outcomes have been organised geographically, rather than thematically, providing a clearer framework for project interventions and outcomes.</p> <p>In support of the STAP comment, the PPG phase moved the project away from a focus on economic valuation to a broader approach to valuation (advocated by comments from GEF Council member) that will focus on quantifying benefits of ecosystem services to people in non-monetary terms, such as the quantum of services delivered in hydrological terms, in the case of water-related ecosystem services). In relation to monetary valuation, the project will calculate the full costs of rehabilitation and maintenance of water-related ecological infrastructure in the demonstration catchments in order to inform water resource management charges prescribed in the Water Pricing Strategy with a view to directing funds raised through this tariff into managing the catchment. This approach does not attach a market-based value to the services provided by ecosystems, but rather costs the activities required to maintain or enhance the delivery of services.</p>

STAP comment	Response
	Building on the STAP recommendation, the project design has further been adjusted to include a third component (with two outcomes) on knowledge management and social learning, including building and strengthening communities of practice. As per the STAP comment, this component of work is designed to support, strengthen and influence both components 1 (on policy and regulatory instruments) and components 2 (application in demonstration catchments).
The table of proposed stakeholders is extensive and well-described; however, it will be useful if the PIF could comment on whether SANBI, WCDA, NMMM and Department of Water are committed to the project as this will be a critical factor in determining overall likelihood of success.	SANBI will be the Executing agency. The PPG has undertaken a detailed stakeholder engagement process (documented in the CEO Endorsement Template and the Project Document) which has resulted in commitment letters, including considerable co-finance from at least fifteen implementing partners at national, regional and local levels in the public, private and civil society sectors.
The risks are well defined and elaborated; however, it will be helpful to indicate whether they are believed to be low, medium or high.	This has been addressed in the PPG. The revised risk table is documented in the CEO Endorsement Template and the Project Document.

Preliminary Comments by Germany on GEF TF Work Program June 2015	Response
<p><i>South Africa, Unlocking Biodiversity Benefits through Development Finance in Critical Catchments. GEF ID = 9073</i></p> <p>Germany agrees with the proposal. However, Germany would like to emphasize that a focus on solely a monetary valuation of ecosystem services includes certain risks due to large value ranges (depending on individual income and willingness to pay), its time and resource intensive character (particularly if it is to be applied to a big variety of ecosystem services) and will most likely not reflect a tradable value (particularly regulative services are oftentimes considered as public benefits).</p> <p>Suggestions for improvements to be made during the drafting of the final project proposal:</p> <ul style="list-style-type: none"> The final project proposal would benefit from considering other methodologies for valuating ecosystem services as well. For example, quantitative insights expressed in bio-physical units might- depending of the specific case- be already sufficient to communicate benefits (e.g. number of people benefitting from clean water provision). 	<p>The comment is noted. We agree with the risks and shortcomings of economic valuation.</p> <p>The PPG phase moved the project away from a focus on economic valuation to a broader approach to valuation as advocated by Germany that will focus on quantifying actual benefits of ecosystem services to people in non-monetary terms, such as the quantum of services delivered in hydrological terms in the case of water-related ecosystem services).</p> <p>In relation to monetary valuation, the project will calculate the full costs of rehabilitation and maintenance of water-related ecological infrastructure in the demonstration catchments in order to inform water resource management charges prescribed in the Water Pricing Strategy. However this is not economic valuation in the sense of attempting to attach a market-based value to the services provided by ecosystems, but will rather cost the activities required to maintain or enhance the delivery of services.</p>

ANNEX C: STATUS OF IMPLEMENTATION OF PROJECT PREPARATION ACTIVITIES AND THE USE OF FUNDS²⁹

A. Provide detailed funding amount of the PPG activities financing status in the table below:

PPG Grant Approved at PIF: \$137 000			
<i>Project Preparation Activities Implemented</i>	<i>GEF/LDCF/SCCF Amount (\$)</i>		
	<i>Budgeted Amount</i>	<i>Amount Spent to date</i>	<i>Amount Committed</i>
Project design	\$137 000	\$108 257	\$28 743
Total	\$137 000	\$108 257	\$28 743

²⁹ If at CEO Endorsement, the PPG activities have not been completed and there is a balance of unspent fund, Agencies can continue to undertake the activities up to one year of project start. No later than one year from start of project implementation, Agencies should report this table to the GEF Secretariat on the completion of PPG activities and the amount spent for the activities. Agencies should also report closing of PPG to Trustee in its Quarterly Report.

ANNEX D: CALENDAR OF EXPECTED REFLOWS (if non-grant instrument is used)

Provide a calendar of expected reflows to the GEF/LDCF/SCCF Trust Funds or to your Agency (and/or revolving fund that will be set up)

N/A

ANNEX E: COFINANCING LETTERS

The table below summarises the confirmed sources of co-financing for the project per organisation. Amounts given in USD and ZAR, using a rate of exchange of \$ 1= R 13.00, except in cases indicated with * where a rate of exchange of \$ 1= R 14.28 is used.

Organisation	Amount (R)	Amount (\$)
Breede Gouritz CMA	983 390	75 645
CMRA	4 015 188	308 861
*DBSA	98 000 000	7 000 000
DEA NRM	372 280 324	28 636 948
eThekwini	60 000 000	4 615 384
NBI	9 500 000	731 088
SANBI	44 296 434	3 407 418
Stats SA	777 918	59 840
UKZN (CWRR)	1 839 947	141 534
UNEP	2 990 000	230 000
WESSA	1 598 185	122 937
WISA	493 245	37 942
WRC	29 400 000	2 261 538
WWF	13 852 026	1 065 540
TOTAL	R 640 026 657	\$ 48 694 677

BREEDE-GOURITZ

Catchment Management Agency
Opvanggebied Bestuursagentskap
I-Arhente yoLawulo lomMandla nokungqongileyo

51 Baring Street Worcester 6850, Private Bag X3055 Worcester 6849

Enquiries: J van Staden

Tel: +27 23 346 8000

Fax: +27 23 347 8133

E-mail: jstaden@bocma.co.za

Our Ref: 2/3

28 November 2016

Ms Kristal Maze

Chief Director: Biodiversity Planning and Policy Advice
SANBI
Private Bag X101
Pretoria
0001

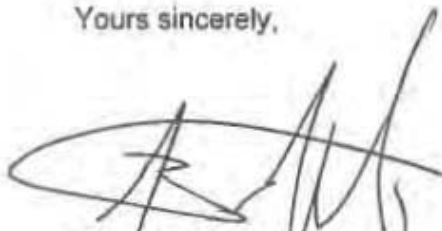
Re: Letter of support/co-financing to the GEF-funded "Biodiversity and Water Security Project"

This letter confirms the commitment of the Breede-Gouritz Catchment Management Agency (BGCMA) to the implementation of the GEF-funded **DEA/DBSA/SANBI** implemented "Biodiversity and Water Security Project".

Co-financing contributions, in terms of the aligned and ongoing programme of work of the Breede-Gouritz CMA in support of the implementation of the project is estimated to be R983 390.87 for the five years of project implementation.

This commitment is subject to annual budget allocations and procedures.

Yours sincerely,



PHAKAMANI BUTHELEZI
CHIEF EXECUTIVE OFFICER

Date:28/11/2016.....



14 November 2016

Ms Kristal Maze
Chief Director: Biodiversity Planning and Policy Advice
SANBI
Private Bag X101
Pretoria
0001

Re: Letter of co-financing commitment to GEF funded project

This letter confirms the commitment of the Centre of Municipal Research and Advice to the implementation of the GEF supported DEA/DBSA/SANBI implemented "Biodiversity and Water Security Project".

Co-financing contributions in support of the implementation of the project is estimated to be R4, 015, 188.57 for the five years of project implementation.

This commitment is subject to annual budget allocations and procedures. Furthermore, CMRA's participation in the project is subject to the extension of the Kingfisher Programme.

Yours sincerely,

Rolf Swart
Acting Managing Director



water & sanitation

Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

Western Cape Regional Office
Private Bag X16, Sanlamhof, 7532
52 Voortrekker Road, Bellville,

ENQUIRIES: Ms A. Petersen
TELEPHONE: 021-941 6159
EMAIL: petersena@dws.gov.za

Ms Kristal Maze
Chief Director: Biodiversity Planning and Policy Advice
SANBI
Private Bag x101
Pretoria
0001

**RE: LETTER OF SUPPORT TO THE GLOBAL ENVIRONMENT FACILITY-FUNDED
"BIODIVERSITY AND WATER SECURITY PROJECT"**

This letter confirms and highlights the support of the Berg-Olifants Proto-Catchment Management Agency (CMA) with regards to the implementation of the Global Environment Facility (GEF) funded **DEA/DBSA/SANBI Implemented "Biodiversity and Water Security Project"**.

Berg-Olifants Proto-CMA has a range of projects and programmes which are budgeted for on an annual basis. These include the development of the Catchment Management Strategy, implementation of the River Health Monitoring Programme, Adopt a River Programme, Water Resource Monitoring Programme as well as the Validation and Verification Project.

The abovementioned projects and programmes compliment fundamental activities of the GEF Programme. Berg-Olifants Proto-CMA views this project as an opportunity to work together to attain our key strategic objectives in the short to medium term.

The support for the GEF Programme is subject to budget annual allocations, resources available and procurement management processes.

Berg-Olifants Proto-CMA looks forward to working closely with the GEF Programme.

Yours faithfully

Acting CEO: Berg-Olifants Proto-CMA

Date 30/11/2016



28 November 2016

The Chief Executive Officer
Global Environment Facility
1818 H Street, NW, Mail Stop N8-800
Washington, DC 20433 USA

Dear Dr Naoko Ishii

SUBJECT: DEVELOPMENT BANK OF SOUTHERN AFRICA CO-FINANCING FOR THE PROJECT, "UNLOCKING BIODIVERSITY BENEFITS THROUGH DEVELOPMENT FINANCE IN CRITICAL CATCHMENTS, GEF ID 9073

We refer to the Council approval of the Project Identification Form for the project titled "Unlocking Biodiversity Benefits through Development Finance in Critical Catchments", in June 2015. The Development Bank of Southern Africa (DBSA) has committed co-financing to the value of ZAR 98 million (circa USD 7 million) to this project over a 5 year period. The co-financing from the DBSA will be through the Infrastructure Investment Programme for South Africa (IIPSA) in the form of grants for municipal and ecological infrastructure as indicated below:

Project Finance	Type of funding	Amount (ZAR)	Amount (USD)
Municipal infrastructure projects including eThekweni Northern and Western Aqueducts.	IIPSA grant for ecological infrastructure	5 million	350,000
	IIPSA grant for municipal infrastructure projects	93 million	6,510 million
Total		98 million	7 million

Yours sincerely

Mohale Rakgate
General Manager: Project Preparation Unit

PJ Moleketi (Chairman), FM Baleni (Deputy Chairman),
PK Dlamini* (Chief Executive), L Bhengu-Baloyi, T Dingaan,
B Mabuza, D Marole, A Moloto, G Mletwa, K Naidoo*, A Sing
M Swilling, M Janse van Rensburg, M T Ngqaleni.

*Executive

Bathobile Sowazi (Company Secretary)

Development Bank of Southern Africa
T. + 27 11 313 3911 1258 Lever Road Headway Hill, Midrand
F. + 27 11 313 3086 PO Box 1234 Halfway House, Midrand
www.dbsa.org 1685, South Africa, Gauteng



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

Private Bag X4390, Cape Town 8000, 14 Loop Street, Cape Town 8001
Tel (021) 441 2700, Fax (021) 441 2751

Ms Kristal Maze

Chief Director, Biodiversity Planning and Policy Advice SANBI Private Bag X101 Pretoria
0001

Dear Ms Maze

Re: Letter of support/co-financing to GEF funded project

This letter confirms the commitment of the Department of Environmental Affairs Natural Resource Management Programmes to the implementation of the GEF supported DEA / DBSA / SANBI implemented "Biodiversity and Water Security Project".

Co-financing contributions, in terms of the aligned and ongoing programme of work of the DEA NRM programmes in support of the implementation of the project is estimated to be R372 280 324,79 for the five years of project implementation. This commitment is subject to annual budget allocations and procedures.

Yours sincerely,


Dr Christo Marais





water & sanitation

Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

Private Bag X313, Pretoria 0001 / Sedibeng Building, 185 Francis Baard Street, Pretoria
Tel: 012 336 7500 / Fax: 012 323 4470 or 012 326 2715

Enquiries: T. Sigwaza Telephone: 012 336 6508 Reference: D21652 GEF

Ms Kristal Maze
Chief Director: Biodiversity Planning and Policy Advice
SANBI
Private Bag X101
Pretoria
0001

Dear Ms Kristal

ENDORSEMENT OF THE INVOLVEMENT OF THE DEPARTMENT OF WATER AND SANITATION IN THE GEF 6 PROJECT ON BIODIVERSITY AND WATER SECURITY

Thank you for your letter dated 11 November 2016.

This letter confirms the commitment of the Department of Water and Sanitation (DWS) with regard to the implementation of the Global Environment facility (GEF) funded DEA/DBSA/SANBI implemented "Biodiversity and Water Security Project".

The Department performs a range of water resource functions which are budgeted annually through both the water use tariffs via the pricing strategy as well as the fiscus. These functions and projects include the development of the catchment management strategy, adopt a River programme, water resource monitoring programme, reserve determination and verification and validation project.

The above mentioned water resource management functions and projects compliment and contribute to the GEF programme which ensures good water governance and effective implementation of water resource management.

Kindly note that the Department confirms its commitment to the project. The Department is looking forward to working together.

Yours sincerely

MR A.B. SINGH
DEPUTY DIRECTOR GENERAL: WATER SECTOR REGULATION
DATE:



**Development Planning, Environment & Management Unit
Environmental Planning & Climate Protection Department**

166 K. E Masinga Road, Durban, 4001
PO Box 680, Durban, 4000

Enquiries: Sean O'Donoghue
Tel: 031 322 4304
Email: Sean.ODonoghue@durban.gov.za

29th November 2016

Ms Kristal Maze
Chief Director: Biodiversity Planning and Policy Advice
SANBI
Private Bag X101
Pretoria
0001

Re: Letter of support/co-financing to the GEF-funded "Biodiversity and Water Security Project"

This letter confirms the commitment of the Climate Protection Branch in eThekweni Municipality to the implementation of the GEF-funded **DEA/DBSA/SANBI implemented "Biodiversity and Water Security Project"**.

Co-financing contributions, in terms of the aligned and ongoing programme of work of the Environmental Planning and Climate Protection Department, part of which will be in support of the implementation of the project, is estimated to be in excess of R 60 million for the five years of project implementation.

This commitment is subject to annual budget allocations and procedures.

Yours sincerely,

Dr Sean O'Donoghue

Manager: Climate Protection Branch

3rd Floor, Building D, Sunnyside Office Park, 32 Princess of Wales Terrace,
Parktown, 2193

PO Box 294, Auckland Park, Johannesburg, 2006, South Africa

Web: www.nbi.org.za

Tel. 011 544 6000

Reg. no. 1995/003141/08 Association Incorporated under Section 21

Vat Number. 4070158433



18 November 2016

Ms Kristal Maze
Chief Director: Biodiversity Planning and Policy Advice
SANBI
Private Bag X101
Pretoria
0001

Re: Letter of co-financing commitment to GEF funded project

This letter confirms the commitment of the National Business Initiative (NBI) to the implementation of the GEF supported DEA/DBSA/SANBI implemented "Biodiversity and Water Security Project".

Based on the NBI's ongoing aligned programme of work, co-financing contributions in support of the implementation of the project are estimated to be R9.5 million for the five years of project implementation.

This commitment is subject to annual budget allocations and procedures.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'J. Yawitch', is written over the printed name.

Joanne Yawitch

CEO, National Business Initiative



Directors:

C Coovadia (Chairman), J Yawitch (Chief Executive Officer), DC Brink, B Burnett, M Chonco,
C Coleman, V Kona, D Lingenfelder, D North, G Serfontein, W Stander, K Shongwe,
M Rambharos, K Tshaka, F Adriaan (ex-officio),
X Magojo (ex-officio). Company Secretary: G Hutchings

Ms Nomsa Zondi
Policy Advisor – Green Fund &
Global Environment Facility Coordinator
Development Bank of Southern Africa
PO Box 1234 Halfway House, Midrand 1685, Gauteng

Dear Ms Zondi

Re: Letter of Co-financing commitment to Global Environmental Facility (GEF) funded project

This letter confirms the commitment of the South African National Biodiversity Institute to the implementation of the GEF supported project entitled "Unlocking Biodiversity Benefits through Development Finance in Critical Catchments".

Co-financing/ in-kind contributions in support of the implementation of the project is estimated to be R44,296,434.05 million for five years of the project implementation.

This commitment is subject to annual budget allocations and procedures.

Yours sincerely,



Mrs Nana Magamola
SANBI Board Chair
Date:

23 November 2016

Ms Kristal Maze
Chief Director, Biodiversity
Planning and Policy Advice
SANBI
Private Bag X101
Pretoria
0001

Letter of co-financing commitment to GEF funded project

This letter confirms the commitment of Statistics South Africa to the implementation of the GEF supported DEA/DBSA/SANBI implemented "Biodiversity and Water Security Project".

Co financing contributions in support of the implementation of the project is estimated to be R777 918.83 for the five years of project implementation.

This commitment is subject to annual budget allocations and procedures.

Yours sincerely



P J Lehohla
Statistician-General

22 November 2016

Ms Kristal Maze
Chief Director: Biodiversity Planning and Policy Advice
SANBI
Private Bag X101
Pretoria
0001

Re: Letter of support to GEF funded project

This letter confirms the commitment of the Centre for Water Resources Research (CWRR) at the University of KwaZulu-Natal (UKZN) to the implementation of the GEF supported DEA/DBSA/SANBI implemented "Biodiversity and Water Security Project".

Co-financing contributions, in the form HR contributions by salaried staff in the CWRR, in support of the implementation of the project is estimated to be R1,839,947 for the five years of project implementation.

Yours sincerely,



Professor GPW Jewitt
Director CWRR

Centre for Water Resources Research

Postal Address: University of KwaZulu-Natal, Pietermaritzburg Campus, Private Bag X01, Scottsville, 3209
Telephone: +27 (0)33 260 5678 **Facsimile:** +27 (0)33 260 5818 **Email:** cwrr@ukzn.ac.za **Website:** cwrr.ukzn.ac.za

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Ms Kristal Maze
Chief Director: Biodiversity Planning and Policy Advice
SANBI
Private Bag X101
Pretoria
0001

November 18, 2016

Re: Letter of co-financing to GEF funded project

This letter confirms the support of the UN Environment Programme Finance Initiative, through the Natural Capital Finance Alliance, to the implementation of the GEF supported **DEA/DBSA/SANBI implemented "Biodiversity and Water Security Project"**.

The project **"Advancing Environmental Risk Management"**, funded by the Swiss State Secretariat for Economic Affairs (SECO), is developing a methodology to map natural capital-related risk for integration into financial sector credit risk assessment. The project has a component specifically focused on South Africa, which can be considered as ongoing, aligned work, in support of the implementation of the GEF project, noting that the SECO funded project has different outputs than the GEF project. This co-financing contribution is estimated to be USD 230,000 for the period 2017-18. This commitment is subject to annual budget allocations and procedures.

Yours sincerely,

Anders Nordheim
Coordinator
Biodiversity, Ecosystems and Water
UN Environment Programme Finance Initiative

ECONOMY DIVISION
PO Box 30552, Nairobi, Kenya

Geneva office: International Environment House, D-508, 11-13 Chemin des Anémones, 1219 Châtelaine, Geneva, Switzerland
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23 November 20

Ms Kristal Maze
Chief Director: Biodiversity Planning and Policy Advice
SANBI
Private Bag X101
Pretoria
0001

Re: Letter of support and co-financing to the GEF-funded "Biodiversity and Water Security Project"

This letter confirms the commitment of the WESSA (The Wildlife and Environment Society of South Africa) to the implementation of the GEF-funded DEA/DBSA/SANBI implemented "Biodiversity and Water Security Project".

Co-financing contributions, in terms of the aligned and ongoing programme of work of WESSA in support of the implementation of the project is estimated to be R1 000 000 in Baseline Co-financing and Direct Co-financing of R598 1 for the five years of project implementation.

This commitment is subject to annual budget allocations and internal WESSA Governance procedures.

Yours sincerely,

Dr Thommie Burger
WESSA CEO

WILDLIFE AND ENVIRONMENT SOCIETY OF SOUTH AFRICA

Reg No. 1933/004658/08 (Non-Profit Company)
Registration Number in Terms of the Non-Profit Organisations Act 1997: 000-716NPO Tax Exemption Number: 18/11/13/1903

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Wilo Pumps SA
Xylem Water
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15 November 2016

Ms Kristal Maze
Chief Director: Biodiversity Planning and Policy
Advice
SANBI
Private Bag X101
Pretoria
0001

Re: Letter of co-financing commitment to GEF funded project

This letter confirms the commitment of the Water Institute of Southern Africa to the implementation of the GEF supported **DEA/DBSA/SANBI implemented "Biodiversity and Water Security Project"**.

Co-financing contributions in support of the implementation of the project is estimated to be R493,245 for the five years of project implementation.

This commitment is subject to annual budget allocations and procedures.

Yours sincerely,

Dr Lester Goldman
CEO

Directors: Dr V Naidoo* A Wurster** Dr J Burgess*** Ms N Hanke* *****
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Email: info@wrc.org.za
Web: www.wrc.org.za

22 November 2016

Ms Kristal Maze
Chief Director: Biodiversity Planning and Policy Advice
SANBI
Private Bag X101
Pretoria
0001

Re: Letter of strategic involvement and co-financing commitment to GEF funded project

This letter serves to confirm the Water Research Commissions' strategic involvement and commitment to the implementation of the GEF supported DEA/DBSA/SANBI "*Biodiversity and Water Security Project*", specifically in relation to leading Component 3 and being drawn in as strategic partner on other components of the project.

The Water Research Commission (WRC), an agency of the Department of Water and Sanitation (DWS), is mandated to be the national knowledge generation and innovation hub for water and sanitation, providing leadership and impact for South Africa in collaboration with local and international partners. The WRC has been investing in and developing capacity in areas such as water governance, financing and ecological infrastructure for the past thirty years and has invested in more than 100 projects in these key areas. The WRC has achieved this through several local and international partnerships such as the International Water Management Institution (IMWI), The Stockholm International Water Institute (SIWI), KWR Global Research Institute, hosting the Water RDI RoadMap Project Management Unit, working with Catchment Management Agencies (CMAs) and local authorities. Equally important is our growing industry partner base. We believe that participation in and contribution to the GEF "Biodiversity and Water Security Project" will build on the foundation created by the WRC, SANBI and our respective partners.

Co-financing contributions in support of the implementation of the project is estimated to be in the region of ZAR 27.6 million in indirect co-finance and ZAR 1.8 million direct co-finance for five years of the project, related directly to leading Component 3. Further co-finance may be made available depending on agreed broader and/or more in-depth role required by the WRC during project scoping and implementation phases.

This commitment is subject to annual budget allocations, project implementation and related procedures.

Yours sincerely,

Mr Dhesigen Naidoo
Chief Executive Officer
Water Research Commission



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08610 WWFSA (99372)
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November 23, 2016

Ms Kristal Maze
Chief Director: Biodiversity Planning and Policy Advice
SANBI
Private Bag X101
Pretoria
0001

Per email: K.Maze@sanbi.org.za

cc: D.Makama@sanbi.org.za

Dear Kristal

RE: LETTER OF CO-FUNDING SUPPORT TO GEF FUNDED PROJECT

This letter confirms the commitment of WWF-SA to the implementation of the GEF supported **DEA/DBSA/SANBI implemented "Biodiversity and Water Security Project"**.

Co-financing contributions in support of the implementation of the project is estimated to be R13.85 million for the five years of project implementation.

This commitment is subject to annual budget allocations and procedures and a signed agreement.

Yours sincerely

Dr. Morné du Plessis
Chief Executive Officer