



TERMS OF REFERENCE FOR A SOLICITED WRC PROJECT

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| KEY STRATEGIC AREA | 1&2 (Water resources and ecosystems) |
| THRUST | 1 (Governance and institutional arrangements) |
| PROGRAMME | 2 (Policy, science, and implementation) |
| TITLE | A lower Breede River scoping study to support future water-related research and guide ecological infrastructure management |
| ToR Number | 1009886 |

Background and rationale

The Ecological Infrastructure for Water Security Project (EI4WS) is executed by the South African National Biodiversity Institute (SANBI), in partnership with the Development Bank of Southern Africa (DBSA) and with funding from the Global Environment Facility (GEF). This five-year project, implemented by a range of partners, focuses on improving water security by integrating biodiversity and ecosystem services into planning, finance and development in the water sector. The project is organised into three interdependent components:

1. Systemic changes to better enable biodiversity and ecosystem services to contribute to improved water security;
2. Demonstration of proposed approaches in the Berg-Breede and uMngeni River catchments; and
3. Improving the integration of biodiversity and ecosystem services into the water value chain through social learning, credible evidence and knowledge management.

The Water Research Commission (WRC) is responsible for implementation of the third component, which seeks to change the way targeted public and private sector stakeholders and decision-makers engage with, think about, and integrate ecological infrastructure into water sector development planning and finance. Component 3 draws from the knowledge generated through the other components, as well as experience external to the project, in order to support and enable the effectiveness of project interventions through social learning. The component is an essential part of the sustainability of the project, working to deepen capacity in existing organisations and networks in the water and biodiversity sectors. According to the Strategic Results Framework of the GEF the WRC is required to undertake activities that inform call for proposals and/or support research and generation of evidence of the impact of project interventions of the EI4WS. This scoping study would inform existing activities of the EI4WS and provide such evidence in the demonstration catchment area of the Breede River. Detailed information of the activities of the EI4WS in this area are available on request.

Land-use practices along the Breede River in the Western Cape are viewed as a major contributor to water quality issues in the middle to lower Breede River, leading to ecological degradation and impacting on water use downstream. According to the Western Cape Department of Environmental Affairs and Development Planning (DEA&DP), there are several water quality and overall river health

monitoring sites along the Breede River. Water quality declines downstream, with changes in salinity (increases downstream as a result of irrigation and leaching), nutrient enrichment as a result of wastewater treatments works (WWTWs) and on-farm fertiliser usage, microbial pollution, reduction in dissolved oxygen, and turbidity and siltation. Knock-on effects from these include ecological degradation through issues such as increased algal blooms and eutrophication, and direct economic losses due to increased maintenance and water treatment costs, and possibly through use of contaminated irrigation water on export products.

These issues present a great opportunity for furthering social learning, co-developing landscape-based solutions, and establishing collaborative partnerships to coordinate long-term ecological infrastructure management interventions. There is, however, a clear need for better understanding of the social landscape, including its various challenges and opportunities. Successful improvement in land-use practices and its lowered impact on water quality will rely heavily on strong relationships and effective coordination, complementing upstream initiatives such as the Upper Breede Collaborative Extension Group (UBCEG) and supporting the work of the Breede Gourits Catchment Management Agency (BGCMA).

Objectives

General

Increase understanding of the social-ecological landscape of the middle to lower Breede River, to identify opportunities for improved ecological infrastructure management.

Specific

- Conduct a situation assessment of the middle to lower Breede, with a specific focus on water quality in relation to land-use.
- Develop a comprehensive stakeholder map for the middle to lower Breede river.
- Map different land-use types in the region and discuss its impact on water quality.
- Identify potential leverage points/ opportunities for effective intervention.

Deliverables

1. Inception report, including workplan.
2. Situation assessment, with literature review, detailing a comprehensive stakeholder network analysis, source and types of pollution impacting on the river, and opportunities and challenges for sustainable land use.
3. Recommendation report synthesising the findings of the study into a list of activity and research needs and potential ways forward.

Lighthouse:

Sustainable Water Behaviours

Knowledge Tree

Sustainable Development Solutions

Time frame

5 months (anticipated start date 01 December 2021)

Total Funds Available

R400 000 including VAT

Year 1 (Dec 2021 – March 2022): R320 000

Year 2 (April 2022): R80 000