

TERMS OF REFERENCE FOR A SOLICITED WRC PROJECT

KEY STRATEGIC AREA	34 (Nation Siltation Management Programme)
PROGRAMME	National Dam Siltation Management Programme
TITLE	Validation of the Sustainability Dredging model and protocols

Background and rationale

The National Dam Siltation Management (NatSilt) Programme is implemented by the Water Research Commission (WRC) and funded by the Department of Water and Sanitation (DWS). The Programme's overarching aim is to develop a national strategy to guide, advise and ensure effective siltation management in the 325 plus large DWS-owned dams with appropriate tools. The programme will also produce the required knowledge and insight to mitigate against the effects of dam basin siltation through deploying social, economic, technological, engineering and management systems, tools and models.

The programme is implemented in three phases:

Phase 1: Development of a draft Siltation Management Strategy and related tools and models

Phase 2: Piloting the draft strategy, tools and models

Phase 3: Review and finalise the strategy, tools and models

Phase 1 of the programme is complete, and Phase 2 is currently underway. All the Phase 1 outcomes will be piloted in phase 2. This project is part of the numerous projects implemented in phase 2.

The DWS approved the NatSilt programme business plan in 2020, which articulates an outline of the outcomes for each of the phases. This project has been approved in the business as part of the pilot phase, and the DWS approved the TOR in December 2022.

During phase one of the NatSilt programme, a beta Sustainability Dredging model and protocols were developed as a decision support tool. The model is intended to be used as part of the detailed design, implementation and monitoring phases of a project subsequent to a feasibility study of alternative mitigation measures to combat reservoir sedimentation impacts.

Reports developed during Phase 1 can be found in the link below, under TOR reports to provide context:
<https://wrc.microsoftcrmportals.com/call-for-proposals-info/tor-reports/>

The main objectives of this project are thus:

- Review the work conducted in the phase one project where the beta sustainable dredging model was developed
- Validate the sustainable model and protocols to
 - Evaluate the accuracy, veracity and performance
 - To quality assure
 - Verify applicability
- Develop a user manual for the dredging model
- Digitise the dredging model and protocols to an open-source online tool
- Compare the Sustainable Dredging model and protocols with other competing alternatives

Project duration: 12 months

Time Frame: April 2023 – March 2024

Total Funds available: R 750 000