



ORASECOM SECRETARIAT

Block A, 66 Corporate Park

269 Von Willigh Avenue (Cnr Von Willigh & Lenchen)

Centurion, South Africa.

Tel: +27 - 12 -663 6826

CONTRACT FOR THE PROCUREMENT OF PROFESSIONAL CONSULTANCY SERVICES FOR THE ESTABLISHMENT OF TRANSBOUNDARY WATER RESOURCES (SURFACE AND GROUNDWATER) WATER QUALITY MONITORING SYSTEM FOR THE ORANGE- SENQU RIVER BASIN

Contract no: 2021/03

PROJECT:

PROFESSIONAL SERVICES CONTRACT FOR THE ESTABLISHMENT OF TRANSBOUNDARY WATER RESOURCES (SURFACE AND GROUNDWATER) WATER QUALITY MONITORING SYSTEM FOR THE ORANGE – SENQU RIVER BASIN

Agreement no: *PIMS Number 5506*

Processed by: Lenka Thamae

Telephone: +27 12 663 6826

Based on the General Terms of Contract, the present Contract is concluded between The ORANGE-SENQU RIVER COMMISSION represented by:

ORASECOM SECRETARIAT (Orange-Senqu River Commission)

Block A, 66 Corporate Park

269 Von Willigh LN

Centurion, 0157

Tel: +27 12 663 6826

And

GROUNDTRUTH cc

9 Quarry Road, Hilton,

KZN, 3245

Tel: +27 (0) 33 3432229

Represented by its Director, Dr Mark Graham

1. Purpose of the Contract

The main objective of the project is to set up a transboundary water resources quality monitoring system which will help the Orange – Senqu River Basin member states to deal with water quality issues and challenges. The monitoring programme will be based on the recommendations of *Report No. ORASECOM 002/2010 – A framework for monitoring water Resource Quality in the Orange – Senqu River Basin*, November 2009.

The assignment also seeks to set up Transboundary Water Resources Quality Objectives for the Orange – Senqu River Basin. These will be piloted on the transboundary river catchment of Mohokare/ Caledon shared by Lesotho and South Africa. The Water Resources refers to both surface and groundwater.

Terms of Reference

The Consultant undertakes to perform the services listed in the Special Agreement and further reflected in the technical and financial proposals submitted in response to the Call for Proposals.

2. Period of Assignment

In order to perform this Contract, it is anticipated that the Contractor shall work for a period of One (1) Year from 01.07.2021 to 30.06.2022.

The Contractor is further required to work according to the timelines/deadlines stipulated under 7.0 Milestones for Project Tasks as stipulated in the Special Agreement.

3. Reports/ Appraisals

Reporting/ Submission of the study/the handover of work is governed by the Special Agreement.

4. Remuneration

For the performance of services, the Consultant shall receive the following remuneration. The remuneration will be paid in the local currency of the account at the prevailing United Nations rate for the month when payment is made.

4.1 Contract Fees

Total Fees for the work on establishment of a transboundary water quality monitoring system will be up to;

USD 142 662.90

(In words: **One Hundred and Forty – Two Thousand, Six Hundred and Sixty -Two US Dollars and Ninety Cents**).

4.2 Travel

All travel undertaken through the undertaking of this Contract will be limited to undertaking the tasks as stipulated in the special agreement and the Contractor will be responsible for the subsistence of the workers.

5. Payments

Payment shall be made upon satisfactory completion of the outputs described in the Terms of Reference as follows: -

Deliverable	% to be Paid	Amount to be Paid (USD)	Submission Date
i. Mobilisation Fees, upon signing of the contract	20%	28 532,58	01 July 2021
ii. Submission and approval of Inception Report	20%	28 532.58	01 August 2021
iii. Submission and approval of Reports 2, 3 and 4 listed under Task 1 of Special Agreement	20%	28 532.58	01 December 2021
iv. Submission and approval of Reports 5 and 6 listed under Task 2 of Special Agreement	20%	28 532.58	01 March 2022
v. Submission and approval of the Final Reports	20%	28 532.58	End June 2022
Total	100%	142 662.90	

Invoices must be submitted as 1 original with 1 copy.

Reimbursable payments will be settled in accordance with section 5.1 above.

6. Other Provisions

The original invoice must be submitted for all items of the Contract for which documentary proof is required.

7. General Terms of Contract

7.2 The Special Agreement shall constitute an integral component of the Contract.

7.3 The General Terms of the Contract shall constitute an integral component of the Contract.

7.4 The Consultant hereby declares that he/she is familiar with the General Terms of the Contract.

7.5 The Contractor is responsible for paying all taxes related to the undertaking of this assignment.

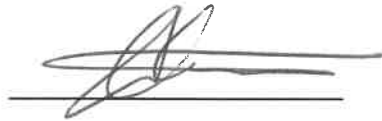
7.6 This Contract shall be drawn up in 2 Originals. The Consultant shall receive one Original.

7.7 All modifications of this Contract shall be made in writing.

Thus, signed on the 21 June 2021 in Centurion, South Africa.

21.06.2021

For ORASECOM SECRETARIAT



Lenka Thamae

For GroundTruth cc



Mark Graham

LN

Annex I: Special Agreement

Contract no: **2021/03**

PROJECT:

PROFESSIONAL SERVICES CONTRACT FOR THE ESTABLISHMENT OF TRANSBOUNDARY WATER RESOURCES (SURFACE AND GROUNDWATER) WATER QUALITY MONITORING SYSTEM FOR THE ORANGE – SENQU RIVER BASIN

Project no: **PIMS number 5506**

Contractor: GroundTruth cc

A. Terms of Reference

1. Background

1.1 The Orange Senqu River Commission (ORASECOM)

The Orange-Senqu River originates in the Lesotho Highlands, from where it flows westwards to its mouth at Alexander Bay/Oranjemund on the Atlantic West Coast. The river basin is the third largest in Southern Africa, after the Zambezi and the Congo, covering a total area of 1,000,000 km² of which almost 600,000 km² is inside the Republic of South Africa. Four countries – Botswana, Lesotho, Namibia and South Africa - share the Basin, and the river forms the border between South Africa and Namibia at its lower reaches.

Lesotho, the upstream country falls entirely within the basin and contributes over 40% of the stream flow from only 3.4% of the total basin area but is one of the smallest users of water from the basin. South Africa is by far the biggest user of water from the Orange-Senqu River Basin, and this use drives the economic heartland of South Africa. The Botswana part of the Basin is entirely covered by the Kalahari Desert with very little surface runoff, but groundwater contributes to the water demands in this portion of the basin.

The water requirements in the lower reaches of the river are driven primarily by irrigation and mining demands from both Namibia and South Africa, and the need to maintain environmental flows to the estuary. As the most downstream portion of a heavily used basin, water resources quality in this stretch is a concern. Similarly, the middle and lower reaches of the river are subject to periodic and often devastating floods. The Orange River estuary is ranked as one of the most important wetland systems in Southern Africa but has experienced environmental degradation. This wetland system was re-designated as a Ramsar Site, but because of its threatened status it was placed on Montreux Record in 1995.

The effective management of the Orange-Senqu River Basin is, therefore, particularly complex, but is also vital to the economy of the region. As a result, the riparian States prioritised this basin for the establishment of a Shared Watercourse Institution under the revised Southern African Development Community (SADC) Revised Protocol on Shared Watercourses. ORASECOM was one of the first of the Shared Watercourses Institutions to be established in SADC.

ORASECOM is an advisory body, issuing recommendations to its Member States (The Parties) aimed at optimizing the development and management of the water resources of the Orange-Senqu River Basin for the benefit of all the people in the Parties.

1.2 The ORASECOM Agreement

The Agreement establishes Council as a technical advisor to the Parties on matters relating to the development, utilization, and conservation of the water resources in the River System. The Parties may also assign other functions pertaining to the development and utilisation of water resources to the Commission. Article 5 of the Agreement empowers Council to take all measures to make recommendations on *inter alia*; water availability in the basin, equitable and reasonable sharing of water, studies on the development of the River System, the extent to which stakeholders should be involved in management of the system, the prevention of pollution and the control of aquatic weeds, and plans for emergency situations.

All recommendations provided by Council to Parties must be contained in a report, signed by the leader of each Delegation. These reports must also include estimates of the cost of implementing the recommendation and may suggest how these costs may be apportioned between the Parties. Recommendations to Parties must therefore not only indicate what must be done, but also how it must be done.

1.3 The ORASECOM UNDP-GEF Project to support the Strategic Action Programme Implementation

ORASECOM, with support from UNDP, managed to secure further financial support from GEF to implement selected priority activities of SAP. The UNDP-GEF project titled, Support to the Orange-Senqu River Strategic Action Programme Implementation, will be implemented by UNDP and executed by ORASECOM in the next 5 years to support ORASECOM and its member states to implement SAP. The project has been built on the Transboundary Diagnostic Analysis (TDA) which has carried out the necessary causal chain analyses in order to identify the transboundary threats to the sustainable development and management of the water resources of the Orange-Senqu Basin. Having identified and understood the threats and their causes, it was possible to identify the barriers which are preventing the removal of these threats, so that sustainable development/management of the basins water and related resources can proceed.

Through the TDA and SAP development process supported by the previous UNDP-GEF intervention and other cooperating partners, basin states have identified key water resources quality issues in the Orange-Senqu River system as nutrient enrichment, primarily linked to increased phosphorus and nitrogen concentrations; increased salinity from acid mine drainage and irrigation return flows; microbial contamination from urban settlements and poorly operated sewage treatment works; and changes in sediment load. In addition, radionuclides, heavy metals and persistent organic pollutants, while not currently posing a basin-wide risk, do show high concentrations in certain localised areas and require increased monitoring.

The overall objective of the SAP Implementation project is the strengthening of joint management capacity for implementation of the basin-wide IWRM Plan and demonstrating environmental and socioeconomic benefits of ecosystem-based approach to water resources management through the implementation of SAP priority actions in the Orange-Senqu River basin.

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The project is supporting ORASECOM in implement measures to reduce stress on water resources quality through the development of a basin-wide water resource quality monitoring system through:

a) Establishing a Basin-wide water resources quality monitoring system.

There is a need to maintain and harmonise different monitoring systems to provide information on different aspects of water resources quality. The basin-wide Orange–Senqu monitoring system will largely be designed around the current monitoring sites, and data to be collected will largely be determined by the needs of the end users. The emphasis on developing the basin-wide monitoring system is on harmonising and integrating the existing national monitoring systems and national efforts of the basin states, filling data gaps where they exist, developing data exchange and management mechanisms and developing basin-wide management response mechanisms acting on the results/analysis generated by the basin-wide monitoring system. Data exchange and sharing activities will support the production of tangible basin-wide output, such as state-of-art water quality yearbooks.

To pilot the basin-wide management response capacity of the basin-wide monitoring system, the project will support the ORASECOM and basin states to take collective/joint actions to alleviate pollution problems at selected pollution hotspots. Exact nature of the management response, collective/joint actions to be taken and indicators to measure the effectiveness of such action all depend on the nature and characteristics of the identified hotspots.

The project will also build linkages with the other ongoing initiatives such as the demonstration project on water quality monitoring on the Mohokare/ Caledon River catchment.

b) Development of Basin-wide water resources quality guidelines and monitoring systems

It is important that these monitoring systems are maintained at a high level of reliability. The support of each country over the long term is critical for sustainability. For this reason it is proposed that a Memorandum of Understanding (MoU) or other suitable form of agreement/commitment will be put in place between the four countries (to be facilitated by ORASECOM) which clearly states the expectations and obligations of each party and ORASECOM as a whole.

c) Periodic water resources quality monitoring and data sharing carried out and water quality yearbooks produced

The MoU mentioned above should include all the necessary details on type, format, and frequency of data exchange as well as Quality Assurance/Quality Control (QA/QC) protocols to be observed.

2. Objective of the Consultancy

The objective of this assignment is assist ORASECOM to set up a transboundary water resources quality monitoring system which will help the member states to deal with water quality issues and challenges. The monitoring programme will be based on the recommendations of *Report No. ORASECOM 002/2010 – A framework for monitoring water Resource Quality in the Orange – Senqu River Basin*, November 2009.

The assignment also seeks to set up Transboundary Water Resources Quality Objectives for the Orange – Senqu River Basin. These will be piloted on the transboundary river catchment of Mohokare/ Caledon shared by Lesotho and South Africa. The Water Resources refers to both surface and groundwater.

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3. Scope of Work for the Consulting Team

This Consultancy will include (but may not be limited to) the following tasks:

Task 1: Development of Transboundary water resources Quality Objectives, Guidelines and Monitoring Systems

Sub-Task i: Development of Transboundary Resource Water Quality Objectives (RWQOs)

- Collate, review and analyse existing basin-wide water quality data and existing RWQOs at any monitoring points;
- Determine and describe the current and future water usage and discharge;
- Based on the data and information analysed, understand the key water requirements and ecological requirements for the basin;
- Develop and set the transboundary RWQOs, in consultation with stakeholders;
- Using the Mohokare/Caledon (shared by Lesotho and South Africa) as a test case, develop specific Resource Water Quality Objectives.

Sub-Task ii): Develop Water Resource and Water Management Guidelines

- Based on the RWQO's, develop measures and guidelines to support achievement/implementation of RWQOs including related monitoring;
- Set out specific management actions that relate to source control, mitigation measures, resource planning, climate impacts and ecological requirements;
- Using the Mohokare/ Caledon River, test the practicality of the guidelines.

Sub-Task iii) Make Recommendations on Improving the Water Quality Network to Support Management Guidelines

- Identify areas of improvement/expansion for the water quality network aimed at monitoring of achievement of RWQOs, this should include designs of the monitoring station, type of equipment etc;
- Harmonise and integrate existing monitoring networks and data capture and storage systems, providing linkages to ORASECOM Water Information System (WIS);
- Identify technical needs of member states to support improvement of monitoring network;
- Develop capacity building materials for use and O&M manuals for upkeep of monitoring network.

Sub-Task iv) Improvement of Water Quality Data Accessibility

- Working with WIS management and support team, propose mechanisms for improving access to water quality information;
- Provide technical support to the WIS management and support team in implementation of proposed data access and sharing measures.

Task 2: Periodic Water Resources Quality Monitoring and Data sharing carried out

Sub-Task i): Develop Reporting Requirements for Water Quality Monitoring

- Develop and agree, in consultation with stakeholders, on the type, frequency and quality of data required;
- Develop monitoring, assessment and reporting actions on water quality (compliance measures for RWQOs);

Sub-Task ii) Establishment and Capacity Building of Pollution Officers/ Champions

- Identify pollution officers/champions in each member state;
- Build capacity of pollution officers to monitor, assess, control, enforce, guide and report on water quality;
- Ensure capacity building around all aspects of water quality and water quality management are captured in the overall ORASECOM Capacity Building plan.

4. Deliverables

It is envisaged that this Consultancy will produce and submit the following deliverables: -

- a) **Task 1: Reconnaissance Works, Review of existing Information, Findings and Analysis;**
- **Deliverable:** Comprehensive Project Inception Report that will ensure mutual understanding of the consultant's plan of action and timelines. The report shall include the existing basin-wide water quality data and existing RWQOs, current and future water usage and discharge
- b) **Task 1:** The following reports are also to be delivered in line with the agreed workplan;
- Report 2** - on Transboundary Resource Water Quality Objectives and Water Resources Management Guidelines. It will also make recommendations on improving the Water Quality network to support the management guidelines;
 - Report 3:** Resource Water Quality Objectives and Management Guidelines for the Mohokare/ Caledon shared river catchment;
 - Report 4:** Report on improving Water Quality data accessibility and technical support to the ORASECOM Water Information System.
- c) **Task 2: Periodic Water Resources Quality Monitoring and Data sharing carried out**
- Report 5;** on requirements for Water Quality Monitoring for compliance to the RWQOs;
 - Report 6;** on Identification and Capacity development of the Pollution Officers/ Champions in the basin
- d) **Final Report:** A synthesis of the Key Recommendations from the various outputs outlined above as well as lessons learnt in the process of establishing a Water Resources Quality Monitoring System.

5. Consultant Composition and Qualification Requirements

5.1 PERSONNEL REQUIREMENTS

The Consultant/ Consulting team should provide all the below required staff to carry out all the stated tasks and other duties in the project. Consultant shall include a detailed time schedule showing each specific task that will be used as a tracking sheet to meet the project deliverables. Personnel scheduling chart, identifying each individual by name and his discipline, and showing on a Gantt chart the estimated number of man-months of each individual, shall be used on the project.

The Consultant shall be required to make appropriate use of available local expertise to ensure that local conditions and capacities are best considered. In the selection of local individuals, any conflicts of interest must be avoided. The Consultant shall also note that civil servants and other staff of the public administration cannot be recruited as experts.

5.2 PERSONNEL FOR TASKS

a) Team Leader:

Qualifications and skills:

- Written and oral fluency in the English language is essential.
- The Expert must have a Master's degree in one of the natural sciences. The Master's degree should have been acquired no less than five (5) years prior. A post-graduate qualification would be an added advantage;
- Computer literacy: Competency in word processing and spreadsheet applications is essential with experience with the development and maintenance of databases an added advantage;

General professional experience

- The expert should have a minimum of Ten (10) years proven experience in the area of aquatic ecosystem health monitoring and reporting, or in water quality monitoring, project and / or monitoring survey planning, or water resource management.

Specific professional experience

- The expert must have at least ten (10) years of professional experience in the management of aquatic ecosystem health monitoring surveys and the reporting of aquatic ecosystem health or water quality monitoring to government agencies and the public;
- Experience in undertaking the development of Resource Water Quality Objectives (RWQOs)
- Previous experience in the ORASECOM Member States would be an advantage.

b) Water Quality Specialist:

Qualifications and skills:

- Written and oral fluency in the English language is essential.
- The Expert must have at least BSC degree in one of the natural sciences or equivalent. A post-graduate qualification would be an added advantage;

- Computer literacy: Competency in word processing and spreadsheet applications is essential with experience with the development and maintenance of databases an added advantage;

General professional experience

- Should have seven (7) or more years practical experience in surface or groundwater water quality assessments;

Specific professional experience

- He/She should have proven experience in the area of aquatic ecosystem health monitoring and reporting, or in water quality monitoring, project and / or monitoring survey planning, or water resource management
- Experience in maintaining, operating and data capture of water quality monitoring systems

c) *Stakeholder Engagement Specialist – responsible for planning and implementation of the Stakeholder Engagement to develop RWQOs and working with Pollution Champions*

Qualifications and skills:

- Written and oral fluency in the English and a local language is essential;
- The Specialist must have a tertiary qualification in education, communications, marketing, performance arts or a relevant field;
- Computer literacy: Competency in word processing is essential;

General professional experience

- The expert should have proven experience in the area of stakeholder mobilization and engagement, including working with communities and governments

Specific professional experience

- The specialist must have at least 3 years' experience in the implementation of stakeholder engagement projects;
- Previous experience with and demonstrable contacts with national and local media;
- Familiarity with government engagements protocols;
- Knowledge of the water sector will be an advantage.

The assignment also requires an array of natural sciences qualifications which will add value to the quality of the products/ deliverables.

The following expertise are required with at least a Bachelor's Degree and five (5) years' experience in the relevant fields;

- Biologist
- Geomorphologist / Sedimentologist
- Ecologist (Botanical and/or macroinvertebrate)
- Fish Ecologist
- Mammalogist

Also two (2) Technical Assistants with at least a Diploma and two years relevant experience.

6.0 TIMING SCHEDULE AND MILESTONES

The Consultancy will be undertaken within a period of 12 months starting from 01 July 2021 and ending on the 30th June 2022. The Project will pay for a maximum of **60 Consultancy days** per specialist spread over the 12 months period. The Consultant shall commence on 01 July 2021. The Consultant must deploy necessary manpower, logistics and all other necessary items to complete the assignment within the stipulated time.

Since there will be several parties involved in the project whose views and interests are to be considered and reflected in the study, the schedule must allow for sufficient time for the discussion and approval of the various reports. There shall be progress reports and meetings between the Client and Consultant during the implementation of the project.

All reports shall be submitted as Draft and will receive comments from ORASECOM. Where not defined otherwise, the Consultant is obliged to present the final version of any report not later than 2 weeks after receiving the ORASECOM's comments to the respective Draft Report.

7.0 Reporting and Communication

All communications between ORASECOM and Consultant shall be done through the ORASECOM Water Quality and Environment Expert and the Consultant's Team Leader(s) for the various tasks.

All deliverables shall be submitted in a report form (soft copies) and make presentations to ORASECOM. All communication and reports shall be in the English language and should be submitted electronically.