

1. OBJECTIVE OF THIS STUDY.

The objective of the study is to validate water use and to verify the lawfulness and extent of existing water uses in the following quaternary catchments of the Breede-Gouritz Water Management Area:

H80A, H80B, H80C, H80D, H80E and H80F

H90A, H90B, H90C, H90D and H90E

K10A, K10B, K10C and K10D

K30A, K30B, K30C and K30D

K40A, K40B, K40C, K40D and K40E

K50A and K50B

K60A, K60B, K60C, K60D, K60E, K60F and K60G

K70A and K70B

J31A, J31B, J31C and J31D

J32A, J32B, J32C, J32D and J32E

J33A, J33B, J33C, J33D, J33E and J33F

J34A, J34B, J34C, J34D, J34E and J34F

J35A, J35B, J35C, J35D, J35E and J35F

J40A, J40B, J40C, J40D and J40E

2. PURPOSE OF THESE TERMS OF REFERENCE

The purpose of this Terms of Reference is to provide a framework for the functions and responsibilities of the Professional Service Provider (PSP) undertaking all aspects of the Study. The PSP therefore must provide the diverse skills and expertise required to undertake this study.

3. GENERAL INFORMATION

3.1 Client and Study Name

The Breede- Gouritz Catchment Management Agency (BGCMA) will act as the Client for the proposed study.

The assignment shall be called: "Validation and Verification of water use in the Breede – Gouritz Water Management Area".

4. INSTITUTIONAL ARRANGEMENTS

4.1 *Study management*

4.1.1 Study Manager

The Study Manager will be appointed by the Chief Executive Officer of the Breede-Gouritz Catchment Management Agency.

4.1.2 Study management

The PSP will assist the Client in administering and managing all the necessary work to comply with this brief.

Together the Study Manager (BGCMA) and the Study Leader (PSP) will form the Study Management Team (SMT). If the need arises the Study Management Team can be extended to incorporate more members.

4.1.3 Liaison and supervision

The Client will be responsible for the general liaison and supervision of the study. Sub-consultants and/or co-consultants that may be required to render specialist services will be appointed by and directly responsible to the PSP.

The PSP will attend progress meetings with the Client in Worcester, or at other agreed locations with the client, at intervals specified by the Study Manager (not more frequently than monthly) to report on study progress and expenditure against the programme and receive any supplementary brief directives. The PSP must submit a monthly detail progress report regardless of whether there is a progress meeting.

Meetings of the Study Management Team will be held in Worcester from time to time, as the need arises, to resolve specific problems associated with the study management and co-ordination. The SMT meetings will be convened at the discretion of the Breede-Gouritz Catchment Management Agency, usually upon request of the Study Leader.

5. SCOPE OF SERVICES TO BE PROVIDED BY THE PSP

5.1 *General*

The services to be provided by the PSP must be in accordance with these terms of reference.

The study shall be undertaken in a phased manner as follows:

- Phase 1: Study Planning and Process Initiation
- Phase 2: Study Implementation
- Phase 3: Study Termination

5.2 *Phase 1: Study Planning and process initiation*

The primary purpose of this phase is to plan the study and to compile an Inception Report.

During the Inception Phase the selected service provider is expected to familiarise themselves with the registration process and the Water Authorisation and Registration Management System (WARMS) in the Breede-Gouritz Water Management Area.

It is recognised that some areas will need more highly accurate spatial data than others. The PSP is therefore also expected to work with the Breede-Gouritz Catchment Management Agency to identify areas where greater detail and accuracy is required.

The service provider will also be expected to familiarise themselves with the literature and processes on how to determine the lawfulness of existing water use, during the Inception Phase. After the inception phase the PSP should review the assignment to establish whether the ToR are still relevant, or if additional tasks have been identified that will add value to the study. This will allow the client the opportunity to take the necessary steps in order to meet these additional tasks.

The PSP shall compile and submit to the Client an Inception Report containing *inter alia* the Study Plan and deliver a presentation thereon to the Study Manager. The Client must approve the Inception Report before the contract for professional services is entered into and the implementation phase (Phase 2) commences. The Client may, at his discretion, terminate the study at this point if the Study Plan reflected in the Inception Report does not give the Client a reasonable assurance that the objectives of the study will be achieved within the time and budget allocations set for it.

The requirements for the tasks in Phase 1 are set out hereunder:

- Prepare preliminary plans (a Study Plan to be documented in the Inception Report) to serve as a basis for a detailed description of the various tasks that must be undertaken and deliverables produced in order to achieve the objectives of the assignment.
- Derive a consolidated module budget and schedule using the work plans developed in the sequence above. The consolidated schedule must be based on the individual schedules of the various activities that make up this Study.
- Develop a precise description of all study status reports and indicate when they are to be delivered.

The Study Plan must include but not be confined to the following elements:

Overview - A detailed statement of the objectives and scope of the assignment.

General Approach - The strategy and managerial approach to be followed to achieve the objectives of the assignment.

Contractual Aspects - A description of all the reporting requirements, client supplied information, liaison arrangements with various role players (stakeholders), study review procedures, expected technical deliverables, their specifications and delivery schedule. This section shall contain milestones, the overall work breakdown structure and linear responsibility charts.

Resources - A clear description of the personnel, financial and other resources required for the assignment. Availability of specialist skills during the duration of the study must be highlighted. A study budget must be **formulated by study activity or work module. The financial control procedures must be described.**

Evaluation methods - a brief description of the procedure to be followed in monitoring, collecting, storing and evaluating the study history must be provided.

Deliverables - a description of all deliverables must be provided.

5.3 Phase 2: Study implementation

This phase will only commence once the Inception Report is approved by the Client and the PSP is formally instructed to proceed with the assignment. The Inception Report shall form the basis upon which the final contract between the Client and the PSP will be drawn and entered into.

In this phase the following aspects have to be addressed (according to the approach and philosophy proposed in the Inception Report).

5.3.1 Validate actual water use in the quaternary catchments

The intent of this task is to determine the water use per property that actually took place in 1998 (or 1999 in some instances) and subsequent to this date. To do this the PSP will have to make use of applicable satellite imagery and/or aerial photography as well as ground surveyed data as appropriate. Cadastral information has to be compiled for each property. Information must also be obtained from Agricultural Co-operatives and Water Users Associations/Irrigation Boards. The approaches and levels of accuracy required for different parts of the catchment must be identified in consultation with the Breede-Gouritz Catchment Management Agency.

This work must also identify current water use and actual water use that took place in the period 1 October 1996 to 30 September 1998, (or 30 September 1999, where applicable), but which is not registered. PSPs must also include water used by bulk water suppliers, industrial use, irrigation use and commercial forestry areas. Service providers must also include properties where permits had been issued but where this use was not taken up.

This information should be captured in an alphanumeric database that clearly indicates per property and per water use volumes and a true/false field:

- correctly registered water use;
- under registered water use;
- over registered water use;
- unregistered water use;
- **demographics of the water use** ;
- the source of the water;
- water use registration (WARMS) data as per start of the study and
- Authorisations in terms of previous and current water legislation.

The data in the database must be easily exportable to enable import into a GIS application.

Hard copies of the source documents should be placed on the water user's file.

Water users must also be consulted and the public participation process is necessary to ensure co-operation of the stakeholder towards availing information required for the validation and verification of actual water use.

The outputs of the study must also summarise (includes spatially) the current water allocation practices in the catchment with respect to:

- government irrigation schemes;
- Government Water Control Areas;
- other Proclamations and Government Notices forbidding the development of further storage or irrigation in the controlled, restricted or prohibited areas;
- entitlements under Section 9B and 9B 1c of the Water Act, 1956;
- entitlements under Section 9C of the Water Act, 1956;
- permits, and
- Section 33 applications for declaration of existing water use under the National Water Act, 1998.
- General Authorisations granted in terms of the National Water Act, 1998.

The following subtasks are envisaged:

Remote Sensing

- collate the relevant remote sensing data
- standardise and classify the imagery to identify water use;

- analyse the (cultivated area) coverage for the years 1996 to 1998; (1999)
- analyse the current (cultivated area) coverage's; and
- reporting

Collate data into GIS

- collate and review WARMS data;
- build GIS database per cadastral property (if necessary for irrigated lands only) including WARMS and remotely sensed data;
- field survey and client interviews of properties requiring more detailed analysis (hotspots);
- validate the registered water use against the actual current use.

Model water volumes used

- determine the most suitable methodology in consultation with relevant stakeholders;
- determine and collate the data required;
- model water use per property using SAPWAT or similar models;
- include water volumes into the GIS database.

Install GIS database in the offices of the Breede-Gouritz Catchment Management Agency.

The Breede-Gouritz Catchment Management Agency uses ArcGIS format.

- Train BGCMA staff; and
- Install the database on the BGCMA system.

5.3.2 Verify the lawfulness of the water use

This work must assess, for each water use, the lawfulness of the use in terms of Sections 32-35 of the National Water Act. However, the lawfulness of existing use is determined not only by the water use that was registered by the user, but also by provisions in the Water Act of 1956 and a series of amendments to this Act over the years, as well as water use authorised by any other law. This includes Water Court Orders, DWS policy, Ministerial decisions, etc.

The process of verifying the lawfulness of water use in the quaternary catchments will therefore be informed by the 'Guide to Determining the Lawfulness of Existing Water Use', which has explored these complexities and provided a series of process diagrams, to guide the verification process. This document is available on the website of the Department of Water and Sanitation. This work should include assessment of the lawfulness of both registered and any un-registered water use in terms of present day and the period 1996-1998 (1999).

This information must be captured in the GIS database clearly indicating the lawfulness of the water use. In consultation with the BGCMA office, this information should be placed on the water users file, and should be communicated to the water user. Copies of all correspondence sent and received must be kept on the hardcopy file for each user.

The following subtasks are envisaged:

- familiarisation with the Guide to Determining the Lawfulness of Existing Water Use;
- identification of the level of determination required for different areas;
- verification of the lawfulness of water use in these areas; and

- consultation with water users.

Compliance and enforcement in terms of the verification process is not part of the scope of this study.

5.3.3 Outline the current water use patterns in the catchment

The intent of this output is to provide a summary of the water use in the catchment by sector, gender and race. This should also indicate the comparisons between the registered water use, the lawfulness of this use, as well as under registrations and failures to register.

5.3.4 Skills Transfer and Capacity Building.

It is important that this capacity to execute validation and verification processes is built in staff of the BGCMA. Service providers must therefore outline their plans to help entrench the skills required to undertake the work outlined above in this group. This must include plans to build the capacity in BGCMA.

5.3.5 Study Management

One of the key factors for achieving the objectives of such studies on budget and on time is the study management expertise and experience that the PSP is able to command. It should therefore be noted, that great emphasis must be put on this aspect during proposal/quotation evaluation, and during the execution of the work thereafter.

The PSP will be responsible for the detailed planning, monitoring and controlling of the activities carried out under this assignment. The PSP must therefore have a Study Leader with proven study management skills and experience on the team.

The study management function entails performing a variety of activities that are described hereunder:

a) Monitoring

The PSP's Study Leader must collect, record and report information concerning all aspects of the assignment that the SMC wishes to know. In order to achieve this, the PSP must design a performance monitoring and information gathering system based on the key performance indicators for the study. The monitoring system must concentrate primarily on measuring various facets of output rather than intensity of activity. The PSP must indicate the type of information that will have to be collected in order to evaluate progress against the set of goals stated in the Study Plan.

b) Study Control

The PSP must indicate, based on the monitoring system, the basic structure of the process of control for performance, time and cost. The structure must indicate at what points in the module, what is to be controlled, how it will be measured, how much deviation from the work plan will be tolerated before remedial action is taken and what kinds of management interventions should be used.

c) Day to day co-ordination of all activities

In order to achieve the study management objectives, the PSP shall be responsible for day to day monitoring and co-ordination of all the activities undertaken under this assignment. This involves the following:

- ▶ monitoring progress on each of the tasks being executed against baseline;
- ▶ reviewing actual outcome against the planned outcome and taking corrective action in time;

- ▶ analysing the impact of deviations from the original Study Plan and/or budget and assessing what must be done, at what cost and when to get back on course. (The PSP shall be required to prepare a revised inception report if these deviations are significant.);
- ▶ giving advice on any changes to the process and programme that need to be made to avoid delaying the progress;
- ▶ controlling costs and performing quality audits of the various tasks;
- ▶ co-ordinating the flow of data and information between the PSP and the Client; and
- ▶ providing guidance and direction to the task teams, integrating the findings and making recommendations to the Client.

To achieve the above the PSP shall prepare periodic progress and financial reports and submit these to the Client in a format prescribed by the Client. Progress meetings with the Client will be held at the intervals specified by the Study Manager (not more frequently than monthly).

After completion of the study a “wrap-up” workshop will be held.

5.4 Phase 3: Study termination

Upon finishing the study the PSP must compile a Report. In this report the PSP must summarise the theoretical assumptions made during conceptual design as well as unit rates applied in the costing analysis.

Prioritisation of all options must be clearly presented and a summary and recommendations provided.

The report must be concise and written in an intelligible manner.

5.4.1 Units

All units used throughout the study as well as paper sizes shall be in accordance with the SI system.

5.4.2 Data Capturing

Any data collected in the process of the study shall be captured into the BGCMA system.

Spatial information shall be compiled and saved into the BGCMA spatial database.

Access or installation of to the BGCMA systems for the PSP can be arranged through the Study Manager.

6. INFORMATION TO BE PROVIDED IN THE PROPOSAL/ QUOTATION BY THE PSP

6.1 Extent of proposal/quotation

The text of the Proposal, including a Work Programme Schedule and a detailed Schedule of Resources versus Costs, should be to the point at a font-size of 11 and 1.5 line spacing.

6.2 Scope of work

The Scope of Work must reveal the PSP understands of the Study. The proposed approach, methodology and models to be used during the Study should be outlined. The PSP is encouraged to use this Section in the Proposal to present innovative approaches or other special features of the PSP’s response to the terms of reference.

6.3 Study team and summary of capacity, capability and experience

The Proposal must present the Key Components of the Study Team in the form of an Organogram. The Proposal must also contain explicit information about the relevant capacity, capability and experience of Key Personnel, with particular reference to:

- experience in and knowledge of Geographical Information Systems
- experience in the compiling and management of databases
- experience in the use of remote sensing images and analysis
- experience in and knowledge of crop water requirements and irrigation practices
- experience in and knowledge of present and past water legislation
- experience in and knowledge of historical or current water resource investigations and/or management in the Study Area;
- the roles of individual Key Personnel in the study; and
- experience of working in multi-disciplinary teams in the water resources domain.

6.4 CVs

Abbreviated CVs of all Key Personnel included in the study team must form attachments to the Proposal. CVs must be presented in font-size 11 and 1.5 line spacing.

6.5 Certification of association or of joint venture

In the case of collaboration among different PSPs, a suitably worded letter shall accompany the proposal from each participating firm, confirming their participation in the Association or Joint Venture, signed by a Principal of each participating firm.

6.6 Tax clearance certificate

No contract may be awarded to a person who has failed to submit an original Tax Clearance Certificate from the South African Revenue Service ("SARS") certifying the taxes of that person to be in order or those suitable arrangements have been made with SARS.

6.7 Retention on PSP contracts

An amount equal to 10% of the approved contract amount shall be retained where the final products have not yet been submitted or approved by the Breede- Gouritz Catchment Management Agency. The retention clause comes into effect near the end of the study, reference to the appropriate clause in the contract document needs to be made. It is mentioned here to assist with the planning of cash flow for the study.

6.8 Work program

A detailed Work Program, broken down to individual tasks and indicating the contributions by all Study Personnel, shall be presented. The Work Program must indicate all Study landmarks and target dates for deliverables.

6.9 Study budget

The Study budget shall present the full resourcing (both professional fee [time-based] costs and disbursements) associated with each major component and each primary task in the Study, as well as the timing of the costs involved. The resourcing must provide details of the employment of all Study personnel on a primary task basis. The hourly fee rates of all Study personnel must be stated. CPIX-related escalation of fees may be allowed for. The Study Budget must include VAT at 14%.

There must be no contingency allowance in the Study cost estimate. All approved cost increases will be handled as Variation Orders on the original cost estimate after approval by the BGCMA.

The Study Budget must provide a breakdown by Study team member of fees to be earned on the basis of the following categories: Black Male; Black Female; White Female; Disabled Person; White Male. .

7. PROGRAM OF WORK

This assignment is expected to be completed within 24 months.

8. PROPOSAL EVALUATION AND ADMINISTRATIVE DETAILS

8.1 Evaluation system

The applicable preferential points system as set out in the Procurement Policy of the Breede-Gouritz Catchment Management Agency will be used to evaluate individual proposals/quotations.

The Evaluation System and Guideline Weighting Points that will be used to evaluate the acceptability of the Study proposal are detailed in **Table 2**.

Table 2: The evaluation form for the study proposal of the PSP

Criteria		Weighting Points
Functionality	Past Experience	50
	Methodology	20
	Team Capability	30

The PSP needs to achieve a score in excess of 60% for each of the evaluation criteria for the Proposal to be considered acceptable.

8.2 Contact person in the Breede-Gouritz Catchment Management Agency.

This Terms of Reference and Proposal Invitation are being administered by the Breede-Gouritz Catchment Management Agency. The contact person for enquiries about this Study is:

Mr. Jan van Staden
Private Bag X3055
WORCESTER
6850
Tel. 023-3468005

9. GLOSSARY OF ABBREVIATIONS

BGCMA	The Breede-Gouritz Catchment Management Agency
CMS	Catchment Management Strategy
DWS	Department of Water and Sanitation
HDI	Historically Disadvantaged Individual
IAP	Invasive Alien Plants
IFR	In-stream Flow Requirements
NWA	National Water Act
PSP	Professional Service Provider
SFR	Stream flow Reductions
SMC	Study Management Committee
SMT	Study Management Team

ToR	Terms of Reference
WMA	Water Management Area
WRC	Water Research

10. Please make sure the company is registered on the National Treasury Central Supplier Database (CSD).