

DRAFT TERMS OF REFERENCE

TECHNICAL ASSISTANT - WATER RESOURCE MANAGEMENT

1. BACKGROUND

4.01 Under the supervision of the component/team lead - In-depth Evaluation of Surface and Groundwater Resources, the Technical Assistant will provide support for the collection and analysis of fieldwork data, modelling of surface and groundwater resources as well as the dissemination of results. The Technical Assistant is expected to possess postgraduate training with skills, knowledge and competence in geographic information system (GIS) based surface and groundwater modelling, water resources and CC research. The goal is to contribute to building up the competence of young professionals to engage in the urgent issues of CC and water resources.

2. OBJECTIVES

2.01 To assist the component lead with data analysis (rainfall, streamflow and groundwater abstraction data), and the creation and use of soil and water assessment tool (SWAT) and groundwater flow (MODFLOW) models. The Technical Assistant will also assist the component lead in writing reports and research publications.

3. SCOPE OF WORK

3.01 The duties of the Technical Assistant are:

- (a) Research Duties - Secondary research and background document reviews
 - (i) Drafting of reports and summaries.
 - (ii) Assisting with field and secondary data collection on rainfall, surface and groundwater resources.
 - (iii) Modelling of water resources using SWAT, WEAP, hydrologic modelling system (HEC HMS) and MODFLOW.
- (b) Data entry and Analysis
 - (i) Data entry using quantitative software packages.
 - (ii) Assessment of data quality control.
 - (iii) Mapping using GIS software.
 - (iv) SWAT model for surface water resources using present and future climate scenarios.
 - (v) MODFLOW for groundwater resources under scenarios of climate change and demand.
 - (vi) WEAP modelling for demand and supply for surface and groundwater under impacts of climate change and population growth.
 - (vii) Appropriate illustration of project findings.
- (c) Writing
 - (i) Co-authoring research reports and manuscripts for journals.
 - (ii) Dissemination of data for various purposes e.g., workshop and conference presentations.

- (d) General Administration
 - (i) Assist with tracking of fieldwork progress.
 - (ii) Secure management of data collection and storage.
 - (iii) Support the organisation of meetings and contacting stakeholders.
 - (iv) Support with the organising of research trips.
 - (v) Develop presentations and related materials.

4. QUALIFICATIONS AND EXPERIENCE

4.01 The Technical Assistant shall have the following:

Required:

- (a) Postgraduate degree in Hydrology, Hydrogeology, Water Resources or Master's degree closely related to the primary area of q
- (b) Five years of experience in carrying out research on water resources using modelling tools.
- (c) In depth knowledge of GIS, SWAT, WEAP, HEC and MODFLOW modelling tools.
- (d) Willingness to travel and availability for training.

Desirable:

- (a) At least five years of experience in quantitative research, including data collection, modelling and mapping.
- (b) Proven knowledge of quantitative software packages.
- (c) Ability to communicate effectively in English.

Skills:

- (a) Excellent writing and analytical skills.
- (b) Ability to write reports, research papers and presentation skills.

5. DELIVERABLES

5.01 The Technical Assistant will prepare monthly reports that will underscore inter-alia:

- (a) Main activities undertaken, and key results achieved, and
- (b) Key challenges and opportunities.

6. DURATION

6.01 The Technical Assistant will be hired for 16 consecutive months and paid on a monthly basis.