



## JOB DESCRIPTION

### POSITION TITLE: WATER RESOURCE MODELLER

<b>Department:</b>	Basin Wide Program	<b>Location</b>	NBI Secretariat-Entebbe, Uganda
<b>Reports To:</b> Deputy Executive Director/Head of Program & WRM			
<b>Job Group</b>	Regional Profession	<b>Career Family:</b>	Water Resource Management
<b>Date Reviewed:</b> July 2023			
<b>Direct Reports</b> <ul style="list-style-type: none"> <li>None</li> </ul>			
<b>Job Purpose/Role</b> <p>The Water Resources Modeller is responsible for analytical work in the WRM Department focusing on the operational use and further customization and refinement of the Nile Basin Decision Support System (NB-DSS) and other modelling tools. S/He contributes to technical analysis for addressing strategic water resources issues in the Nile Basin, including climate change impacts and adaptation.</p>			
<b>Key Responsibilities</b> <p><b>1) Maintenance and further enhancement of NBI modelling tools, especially the NB DSS</b></p> <ul style="list-style-type: none"> <li>Provide first level DSS user support through the DSS helpdesk. The Modeler shall provide technical support and address issues raised by DSS users in the Nile Basin countries.</li> <li>Contribute to DSS and water resources modelling community activities through sharing of experiences, providing training, and resolution of DSS use related issues</li> <li>Plan, organize and implement periodic technical workshops and trainings on the application of the NB modelling tools to the community of water resources modelers.</li> <li>Contribute to the smooth running of the DSS helpdesk and other help desks, including</li> </ul>			

clarification of known related issues, troubleshooting use related problems, and liaising with vendors/developers to resolve bugs in the software framework(s)

- Provide expertise in the development of new add-ons for the NB DSS; lead the development, testing and integration of such new add-ons
- Contribute to the quality assurance of new add-ons developed by the DSS user community and shared with the Nile-SEC;
- Plan, organize and administer e-courses on Nile Basin DSS and other NBI modelling tools

## **2) Operational Application of Analytic Tools to support strategic water resources analysis**

- Provide analytical expertise for the realization of the results planned under the next Nile-SEC five-year strategic plan, including compilation and quality assuring water resources and related data, developing model setups, scenario analysis and evaluation of strategic options for basin-wide water resources management
- Plan, organize and carry out modeling and analytic work to support the strategic water resources analysis being carried out under the WRM department. The modeling work shall cover hydrologic, hydrodynamic and water balance modeling of the Nile Basin or its tributaries as required by the specific application for which the models are required.
- Compile up to date Climate Change datasets relevant for the Nile Basin from available data globally (both GCM outputs as well as downscaled data). Develop a systematic archiving scheme for these climate change datasets for easy reference and access.
- Plan, organize and carry out modeling of climate change impacts on hydrology of the Nile Basin and development of Climate Change resilient water resources development and management options
- Contribute to the preparation of strategic papers, policy briefs and technical reports based on the results of analytic work under the WRM department.
- Develop models, scripts and toolkits to support implementation of the water resources management program of NBI
- Support the SAPs and the riparian countries in conducting and evaluating basin-wide trans-boundary versus national water resources planning, management and development studies to support strategic planning and project implementation at sub-regional and national levels.

## **3) Knowledge Management**

- Provide technical/analytic inputs to the preparation of knowledge products to address specific water resources management issues in the Nile Basin;
- Contribute to the preparation of training modules on water resources modeling, in general, and use of NB DSS, in particular

#### 4) Project Management

- Prepare work plan, budget and reports as contribution to the WRM departments annual planning cycle
- Supervise consultants' performance, relevant to specialty, to ensure the relevance and quality, including reviewing of technical documents.
- Contribute to the periodical reports prepared by the WRM Department.
- Carry out other related tasks as requested by the Head of the Water Resources Management Department.

**Job Complexity:** The jobholder is required to carry out water resource modelling setups for the entire Nile Basin, calibration, analysis and results as well as carry out data organization, processing and harmonization.

**Creativity, Innovation & Problem Solving:** The job requires modelling a complex and highly dynamic Nile River system. Therefore, it requires innovative solutions to be developed to accurately model the system and generate information products acceptable to stakeholders.

**Consequences of Error:** Errors in modelling and analysis of results can miss-inform the decision-making process and defame the institution thereby causing loss of time repeating a task or refusal of results by stakeholders.

**Leadership & Human Capital Development:** The jobholder is responsible for supervision of consultants, interacting with other colleagues and ensuring they work together in planning and executing the work. There is also room for coaching to help other staff member understand modelling. S/he also has a task in development and training of country specialists on NB DSS and other modelling tools.

**Service Delivery & Customer Focus:** The jobholder is responsible for answering any queries related to modelling and analysis, technical findings to help the different stakeholders who benefit from modelling information and forecasts.

**Information Resources:** The jobholder handles a lot of data and information about physical characteristics and infrastructure within the whole basin region. Some of these data can be sensitive and confidential.

**Financial & Physical Resources:** The jobholder accounts for money given when travelling to

cover training costs in different Nile basin countries. S/he is responsible for various company assets given to him to facilitate him/ her in performance of the duties as required by the office e.g. computer, laptop, computer server and telephone

**Dexterity:** The jobholder requires having high concentration and to be alert as his/her role requires high accuracy and attention to detail in modelling, forecasting, report writing, and document review. The jobholder uses a computer keyboard.

**Mental/Sensory Demand:** The jobholder expends mental and sensory efforts in report writing, ensuring work quality, reading, monitoring, writing concept notes and proposals, preparing presentation and program evaluations and modelling.

**Physical Exertion:** The jobholder will normally work in an office sitting continuously for long hours, working on a computer, carrying out his/her duties and also has periods of moderate travel.

Working Environment & Occupational Hazards: works in an office environment.

### **Job Specification**

#### **Academic/Professional Qualification and Experience**

- An MSc in relevant fields of Water resources such as Civil Engineering, Water Resource Engineering and management, Hydrology or other technical related field.

#### **Minimum Experience Required**

- At least ten years of working experience in water resources engineering, or a related field, with recognized technical expertise. In addition, seven years post MSc hands on experience in the above fields is desirable.
- Proficiency in at least two modelling systems, such as RiverWare, RIBASIM, SWAT, Mike Hydro, GAMS, WEAP, TALSIM-NG
- Wide experience with water resources modelling for watershed and riverine applications; experience in database development, and Geographical Information System is an advantage.
- Working knowledge of the Nile Basin DSS is an advantage
- Proficiency in at least one modern computer programming language

#### **Skills Required**

- Water resource modelling skills
- Data processing and analysis
- Technical writing

- Hydrology
- Processing and using climate change data in water resources modelling
- Excellent written and spoken English.
- Strong analytical and presentation skills.
- Excellent sense of initiative, ability to set priorities and work under pressure with accuracy and dedication

**Communication/Contacts**

**Internal Contacts**

- DED/HBSWP & WRM
- Earth Observation and Remote Sensing Specialist
- Information Management Specialist
- Senior Water Resource Management Specialist
- IT Officer

**External Contacts**

- Consultants
- Trainees
- DSS Community

**APPROVAL:**

No.	Designation	Name	Signature	Date
1.	Jobholder			
2	DED/HBWP & WRM			
3	Head Corporate Services			