

**Dr.-Ing. Muna Mirghani — Water Management Expert**

**Contact: E: [munamirghani@yahoo.de](mailto:munamirghani@yahoo.de) ; T: +249 912  
658768**

Dr. Muna is a consultant, researcher and educator who has served the water community since 1988. She consults to projects in hydrological analysis and water resources assessment and development in Sudan and internationally in the Nile Basin countries. Currently she is a Lead IWRM specialist at WaterTrac co. ltd. The WaterTrac is a resource and consulting center with core competencies in water Business management including projects on IWRM governance systems and water infrastructure. The center operates in various states of the Sudan, east Africa countries and Basin organizations. WaterTrac provides professional education, research and advisory services in collaboration with national universities and regional capacity building programs. Dr. Muna is in charge of:

- Managing WaterTrac projects vis-à-vis consulting or research and training activities on different Water Engineering & Management themes.
- Develop technical proposals and lead the delivery of all water related projects. These include assessments, integrated water resources planning, policy, institutional capacity building, hydrological modeling, water infrastructure, results- based program design, implementation, monitoring and evaluations, etc.
- Design of technical content for multidisciplinary capacity building programs for water managers.
- Jointly facilitate professional education and research programs in the Nile countries on various IWRM themes, hydrology analysis/ design, groundwater modeling, and climate change.
- Facilitate professional development trainings, coaching and guidance to national offices/ regional project staff.
- Networking and partnership building: e.g. focal point of a capacity building network implementing Cap-Net/UNDP program in the Nile Basin, co-founded AGW-Net, Africa climate change adaptation network, and maintain active membership in regional and thematic networks.

Dr. Muna contributed to research programs in integrated water resources management addressing flood and drought risk in various watersheds; as well as in simulating surface/ groundwater hydrodynamic and prediction of aquifer response to different stresses vis-à-vis recharge and pumping. She has modeled a number of groundwater basins under different projects, tested potential use, designed site and sustainable abstraction.

Dr. Muna has been involved in many interdisciplinary projects combining institutional and engineering solutions, conducted both individually and as part of teams (e.g. to basin organizations, utilities, line water related ministries and local government) as well as supervised and evaluated post-graduate thesis and research projects under different employers/ associates.

Internationally, Dr. Muna provides technical studies, reviews and professional development services on integrated water resources management to many regional and development partners, consulting firms, NGOs, IGOs and UN agencies.

From 2002 to 2005, she worked for the UNESCO Chair in Water Resources, which is initiated under the UNITWIN / UNESCO Chairs Program to promote international inter-university cooperation, knowledge sharing and collaborative research. The Chair is hosted by the Faculty of Civil Engineering of Omdorman

Islamic University in Sudan. Dr. Muna duties included but not limited to joint research projects in the IGAD region and the Nile basin countries. Selected relevant assignments are:

- Resource person for post graduate and Master level courses; supervision of degree (MSc & PhD) research on Hydrology/ hydrogeology, Groundwater modeling and Water management systems (information, legal, institutional, etc.).
- Coordinator of a regular MSc program on sustainable water resources development.
- Design and coordinate collaborative project proposals and budgets for international grants and donor funding.
- Manage, plan and facilitate the Chair's professional development trainings on water resources development and IWRM at national and regional level.;
- Principal researcher at the chair's key projects, namely: the FRIEND/Nile program sponsored by the Flemish Government of Belgium and implemented by UNESCO Cairo Office ; and the Nile Basin Capacity (NBCBN) implemented jointly with UNESCO-IHE, HRI-Egypt and Nile Partners, sponsored by DGIS.
- Lead research proposal of three river basins namely: Atbara, Blue Nile and Gash River Basins research at the UNESO-HELP program.

From 1998 to 2001, Dr. Muna carried out research on groundwater modelling as part of a PhD degree on the Management of the Nubian sandstone aquifer in East of Sudan. Trained in Hydroinformatics Systems; software development and application of hydro-informatics systems such as numerical simulation, GIS and digital image interpretation.

From 1993 to 1997, Ms Muna became responsible for the Nile river monitoring inside Sudan; Established the River Nile database and was responsible of monitoring and evaluation of the Nile hydrological network (gauge, discharge & Sediment) and publishing the Nile year-book. She was also in charge of the operation of the real time flood forecasting system (FEWs) of the River Nile including estimating rainfall from ccc and ccd, using rainfall-runoff model, flood routing package plus data assimilation techniques. Low flow prediction using various statistical methods to advice on strategic Nile water management. In

1988 Muna was appointed as assistant Engineer and reached the grade of Specialist Engineer at the Nile Water Management Department, the Ministry of Water Resources & Irrigation. During this period obtained an MSc degree and was trained extensively in river hydrology. Core function was on hydrological data management, hydrological monitoring / surveys, water balance study, hydrologic and hydrodynamic modeling using stochastic as well as deterministic methods.

Dr. Muna produced over 20 research papers and a considerable number of technical/ advisory reports through her engagement in various projects.

She is a Certified Consultant Engineer – Register No. ( 273 – Sudan Engineering Council. Obtained Dr.-Ing. (Doctorate of Engineering) – Technical University of Berlin, Faculty VI Planning Building Environment, April 1998 – Dec. 2001. Completed a Diploma of Advanced Studies in the Hydrogeology of Tropical and Sub-Tropical Regions – Eberhard Karls Universität Tübingen, Germany, Chair of Hydrogeology, Oct. 1995 –Sept. 1996. Granted M.Sc. Hydrological Engineering – IHE Delft, Holland, Oct. 1991 – April 1993; and B.Sc. Honors in Civil Engineering – Faculty of Engineering and Architecture, University of Khartoum, Oct. 1982 – Sept. 1987.

# Background Information

Name	Education	Appointment	Research Interests
<p>- Muna MO Mirghani</p>	<p>Doctorate of engineering (Dr.-Ing.) – 2002</p> <p>MSc. Hydrological Engineering – 1993</p> <p>BSc. Civil Engineering – 1987</p>	<ul style="list-style-type: none"><li>- IWRM Expert, WaterTrac Co. Ltd.</li><li>- Sudan Academy of Sciences (SAS)</li><li>- UNESCO Chair in Water Resources</li><li>- Ministry of Water Resources and Electricity</li></ul>	<p>WaterTrac co. Ltd. supports sustainable WRD</p> <p>IWRM implementation systems &amp; supporting Technology</p> <p>Science policy interface for water/ Environmental governance</p>

# Research/ Educational Interests

