

**Name:** Mojahid Mohammed Siddig Almahi  
**Year of birth:** 20.11.1986  
**Nationality:** Sudanese  
**Family status:** Married  
**Present position:** Researcher Engineer, HRC-Sudan  
**Years with the firm:** Since 2015 with HRC-Sudan  
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**Education:**

PhD candidate majoring in Hydrology and Water Resources, Hohai university, China.  
MSc in Water Management – Water Management and Irrigation Institute – University of Gezira, June 2021.  
BSc Degree (honors) of science in water resources engineering, Sudan university of science & technology - college of water & environmental engineering- department of water resources engineering  
- Grade: very good  
- Graduation date: May 2009  
- Graduation Project: Sprinkler irrigation.

**Membership in Professional Societies:**

- Member of the Sudan Engineering Council.
- Member of Sudanese Engineering Society.
- Member of federation Sudanese engineers.
- Member of society of water resources engineers.

**Key qualifications:**

I received MSc in Water Management, Water Management and Irrigation Institute, University of Gezira, Sudan in 2021. Research topic titled “Sustainable Management of Groundwater Resources in The Gash Basin, Sudan”. And I received BSc of Science degree in Water resources engineering (very good) from the Sudan University of science and technology in 2009.

Expertise: I have good experience in ground water, groundwater modelling, geology, drilling and designing water wells; I also an experience in the management of drinking water plants. I worked with companies of implementation of water supply networks, also in consultant works in urban water networks. I am a researcher joining the Hydraulics Research Centre in 2015. During this period, I have been involved in several projects such as Calibration of Hydraulic Structures in Rahad Agricultural scheme (field work team leader), Rivers Navigation Project for the reach (Kosti – Khartoum) along the White Nile River, and drainage in Gazira scheme (field work & data analysis), also I participated in writing technical reports. Also, I was supervisor of the construction of new intervention in the irrigation system following the on-farm water management study in Gash Agricultural Scheme and I participated in the design and construction of a calibration tank for Hydraulic Research Centre. I participated in Environmental hydrology course in Egypt and got trainings in different software that related to the water resources field (GIS & RS and Hydrodynamic models); and I have ability to work under pressure & work with team.

**Other skills:**

- Microsoft Office: Proficient user
- Good skills in specialized computer programs: MODFLOW, and modest skills in ArcGIS, Surfer, AutoCAD, GMS, SOBEK, RIBASIM and River Ware.
- Attended many training courses and practical training on Water resources engineering including Management of projects in design and implementation of water networks, drilling of water wells and geology, Wells Pumps were organized by Governmental water corporations and private sector companies.  
GIS & RS, River basin models including SOBEK and RIBASIM were organized by HRC.  
Environmental hydrology for arid and semi-arid Regions were organized by HRI, Egypt.  
Water Harvesting Structures- Subsurface Dams Training were organized by UNESCO Category & RCWH. Agricultural water productivity analysis using FAO WaPOR database and Open-source tools Capacity Belding program were organized by HRC. RiverWare Training and application to the Eastern Nile Basin RiverWare model organized by Water Research Center, university of khartoum with CADSWES and Oxford university.
- Attended a number of workshops and seminars on Groundwater resources were organized by Ground Water and Wadis Directorate.
- Attending several workshops and seminars in the field of water organized by the Ministry of Irrigation and Water Resources, Sudan.

**Languages:**

Language	Reading	Speaking	Writing
Arabic	Mother Tongue		
English	Very Good	Good	Good

**Employment Record:**

From: Mar 2015 To: ongoing

Employer: The Hydraulics Research Center, Wad Medani, Sudan.

Positions held: Assistant Researcher.

From: Jan 2015 To: Mar 2015

Employer: Technomax Consultant, Khartoum,Sudan.

Positions held: Supervising engineer, Khartoum water supply networks Project.

From: Mar 2014 To: Jan 2015

Employer: Gazira state water corporation, Wad Medani, Sudan.

Positions held: Department Engineer, Office of the East of Gazira.

From: May 2013 To: Sep2013

Employer: Alrazi CO.Ltd, Khartoum,Sudan.

Positions held: Site engineer, Khartoum water supply networks Project.

From: May 2010 To: Jun 2012

Employer: ALWOSTA DRILLING, ALRAKHI INTERNATIONAL CO.LTD, AMICO INTERNATIONAL CO.LTD, Khartoum,Sudan.

Positions held: Head of Drilling Unit: JICA Projects of Kassala State, Upper Atbara and Setit Dam Complex (Associated projects), several projects in Darfur, Kordofan and Khartoum States.

Projects Undertaken that Best Illustrates Capability to Handle the Tasks Assigned
<p><b>Name of assignment or project:</b> Quantification of silt removed from minor canals <b>Year:</b> June 2020. <b>Location:</b> Gezira Scheme, Sudan <b>Client:</b> Ministry of Irrigation and Water Resources, Sudan. <b>Main project features:</b> The main objective of this study is to evaluate claimed silt removed quantities in red certificates by the actual sediment removed using land and bathymetric survey. <b>Positions held:</b> Assistant Researcher. <b>Activities performed:</b></p> <ul style="list-style-type: none"><li>- Field work and Data collection.</li><li>- Data analysis.</li><li>- Participate in writing the report.</li></ul>
<p><b>Name of assignment or project:</b> Evaluate the possibility of applying automatic control to irrigation regulators <b>Year:</b> Nov2020. <b>Location:</b> Gezira Scheme, Sudan <b>Client:</b> Ministry of Irrigation and Water Resources, Sudan. <b>Main project features:</b> The main purpose of the study is to evaluate the possibility of applying automatic control of the gates currently existing in irrigation projects in Sudan such as the Gezira scheme. The special goal is selection of suitable types of the gates that allow the applying of automatic control: <b>Positions held:</b> Study team leader <b>Activities performed:</b></p> <ul style="list-style-type: none"><li>- Collecting information and data.</li><li>- Field visits - hydraulic and design data collection.</li><li>- Data analysis and evaluation of the mechanical, electrical, electronic and computer software capabilities.</li><li>- Report writing.</li></ul>
<p><b>Name of assignment or project:</b> Sustainable Management of Groundwater Resources in The Gash Basin, Sudan. <b>Year:</b> Nov2017. <b>Location:</b> Kassala, Sudan <b>Client:</b> M.Sc. Thesis/Water Management and Irrigation Institute, University of Gezira, Sudan. <b>Main project features:</b> The overall objective of this research is to recommend sustainable management approach for groundwater by protecting it from depletion, and to find the best way for water allocation. Therefore, the specific objectives are:</p> <ul style="list-style-type: none"><li>- To determine the safe amounts of groundwater to be abstracted from the Gash aquifer for the different purposes.</li><li>- To establish a clear program for the operation of abstraction wells in the Gash Basin.</li></ul> <p><b>Positions held:</b> M.Sc. candidate. <b>Activities performed:</b></p> <ul style="list-style-type: none"><li>- Data collection, Literature review, Field measurements, Data analysis and building of groundwater model.</li><li>- Analysis of the results.</li><li>- Thesis Writing.</li></ul>
<p><b>Name of assignment or project:</b> Hydrological and related catchment studies to support catchment management plans and infrastructure planning and development in North and South Darfur <b>Year:</b> Oct 2019. <b>Location:</b> Darfur, Sudan.</p>

**Client:** ZOA-International

**Main project features:** Improved conditions for peaceful and inclusive societies at the local level, including land rights; Increased sustainable management of water resources, and increased access to water; Increased capacity on local levels to sustainably manage and protect natural resources and prevent environmental degradation, and increased sustainable agricultural productivity and improved food security.

**Positions held:** Assistant Researcher.

**Activities performed:**

- Field work and Data collection.
- Data analysis.
- Creation of geological and hydrogeological maps.
- Participating in the report writing.

**Name of assignment or project:** Calibration study of water pumps in major irrigation Schemes (Gizera, Rahad and New Halfa).

**Year:** May 2017.

**Location:** Gizera, Rahad and New Halfa, Sudan.

**Client:** Ministry of Water Resources, Irrigation and Electricity, Sudan.

**Main project features:** The study aims, in general, to assess the discharge of pump units in the maximum operational cases (maximum static head). and access to recommendations that will improve operating output

**Positions held:** Assistant Researcher.

**Activities performed:**

- Field work and Data collection.
- Data analysis.
- Participating in writing the report.

**Name of assignment or project:** Drainage problems of Sabir Protective drain in new Halfa Irrigation Scheme.

**Year:** Mar 2017.

**Location:** New Halfa, Sudan.

**Client:** Ministry of Water Resources, Irrigation and Electricity, Sudan.

**Main project features:** Diagnosing of the problems of drainage in Sabir protective drain and suggestion of suitable solutions for the identified drainage problems.

**Positions held:** Assistant Researcher.

**Activities performed:**

- Participation in preparing the study proposal.
- Field visits and Data collection.
- Equipment for field work.

**Name of assignment or project:** On-farm Water Management in Gash Agricultural Scheme.

**Year:** May2017.

**Location:** Kassala, Sudan

**Client:** International Fund Agriculture Development (IFAD)

**Main project features:**

The project is part of IFAD funded research project titled "From Africa to Asia and Back Again: Testing Adaptation in Flood-based Farming Systems". The research aims to evaluate the performance of the existing conventional irrigation system in the Gash Agricultural Scheme on farm level and to introduce a newly effective irrigation scheduling instead of the current one.

**Positions held:** fieldwork team leader

**Activities performed:**

- Responsible of the construction of new intervention in the irrigation system following the on-farm water management study in Gash Agricultural Scheme.
- Land survey.

- Participating in engineering designs of canal and weir.
- Data analysis.
- Writing of the report.

**Name of assignment or project:** Construction of Calibration Tank.

**Year:** sep2016.

**Location:** Wad Medani, Sudan

**Client:** The Hydraulics Research Center, Wad Medani, Sudan.

**Main project features:**

Sudan used to send measuring equipment (e.g., current-meters) to outside the country for calibration. This has many drawbacks: it was costly, and time consuming, and perhaps equipment are not back again.

However, the ministry decided to build a calibration tank within the country to be able to do calibration internally.

**Positions held:** Supervising Engineer.

**Activities performed:**

- Participating in engineering designs of Calibration Tank.
- Prepare bills of quantities.
- Supervision of civil works.
- Training to (current-meters) calibration.

**Name of assignment or project:** Drainage problems of El Shawal major Protective drain.

**Year:** Feb2016

**Location:** Gazira, Sudan.

**Client:** Ministry of Water Resources, Irrigation and Electricity, Sudan.

**Main project features:** The study aims to find solutions for drainage in El Shawal major Protective drain.

**Positions held:** Assistant Researcher.

**Activities performed:**

- Data collection.
- Leader of the Land survey teams.
- Participating in data analysis.
- Drawing sections and compares them with the design sections (by AutoCAD).

**Name of assignment or project:** Navigation Study of reach, Kosti–Khartoum

**Year:** Dec 2015.

**Location:** White Nile River, Sudan.

**Client:** River Transport.

**Main project features:**

The main objective of this study is to investigate the potential of inland river transportation in Sudan.

The specific objectives for the two river reaches are: Khartoum and Kosti line:

Identify and mark the best navigation path (30 m width and 3 m depth),

Identify and mark the location of obstacles in maps and tables.

**Positions held:** Assistant Researcher.

**Activities performed:**

- Participating in preparation for field work on the White Nile.
- Leader of one of the Land Survey teams.
- Participating in data analysis.

**Name of assignment or project:** Calibration of Some Hydraulic Structures in Rahad Agricultural Scheme

**Year:** April 2015

**Location:** Gazira and Gadarif states, Sudan

**Client:** The Project Implementation Unit (PIU) of the Rahad Irrigation Rehabilitation Project (RIRP)

**Main project features:**

This is a consultancy service aims to:

- a. Calibration of selected hydraulics structures (sluice gates and weirs) within the scheme (twenty in total).
- b. Erection of water level gauges upstream and downstream the structures already selected for calibration.
- c. Organizing and conducting training course on selected topics of relevance (calibration, crop water requirements, operation and maintenance ... etc.) to target groups of engineers and technicians employed at the scheme and responsible for irrigation water management through operation and maintenance of existing irrigation and drainage networks and their associated hydraulic structures.

**Positions held:** Team Leader Field Measurements and Engineering Constructions.

**Activities performed:**

- Field Measurements.
- Supervisor Engineer for installation of measurements in hydraulics structures.
- Data analysis.
- Writing of the reports.
- Participation in the training course of engineers of Al-Rahad Agricultural Project.

**PUBLICATIONS:-**

**PAPERS:**

**Mojahid M.S. Almahi**, Mohieldin A.E. Al Kabier, Shamseddin M. Ahmed (2021). Sustainable Management of Groundwater Resources in the Gash Basin, Sudan. Gezira Journal Of Engineering And Applied Sciences, 15(1), 63-78. Retrieved from.

**RESEARCHES AND TECHNICAL REPORTS:**

**Mojahid M.S. Almahi**, Ahmed A. Alamin, Minha Okasha and Abu Obieda B. Ahmed "Evaluate the possibility of applying automatic control to irrigation gates (for example: Al Gezira Irrigation Scheme) ", HRC Preliminary report, Nov 2020.

**Mojahid M.S. Almahi**, "Sustainable Management of Groundwater Resources in the Gash Basin, Sudan ", Msc Thesis Oct 2020.

**Mojahid M.S. Almahi** "Evaluate the possibility of applying automatic control to irrigation regulators ", Study proposal Apr 2020.

Abu Obieda B. Ahmed, **Mojahid M. Siddig** and Yasir A. Mohamed Ali "Calibration of Some Hydraulic Structures in Rahad Agricultural Scheme (RAS)", Technical report, September 2018.

**Mojahid M. Siddig** "Installation of water gauges in Rahad Agricultural Scheme (RAS)", HRC fieldwork report, Apr 2018.

Ahmed A. Cabo, Abu Obieda B. Ahmed, **Mojahid M. Siddig**, Mohamed Y. Abbas and Mirghani H. Al Zein "The calibration of water pumps in major irrigation Schemes (Part 2:Gazira, New Halfa and Engineers Project)", technical report, Oct 2017.

**Mojahid M. Siddig** and Ahmed A. Alamin, "Canal and weir Implementation report, Gash Agricultural Scheme, kassala", HRC fieldwork report, Aug 2017.

Ahmed A. Cabo, Abu Obieda B. Ahmed, **Mojahid M. Siddig**, Mohamed Y. Abbas and Mirghani H. Al Zein "The calibration of water pumps in major irrigation Schemes (Part 1: Miana and Alsoki)", technical report, May 2017.

**Mojahid M. Siddig** and Ahmed A. Alamin "Survey work report (Masga 14 East - Kassala Inspection) Al-Gash Agricultural Scheme", HRC fieldwork report, Mar 2017.

Almutaz Abdelkarim, Abu Obieda B. Ahmed **Mojahid M. Siddig** and Yasir A. Mohamed Ali "Sabir Protective Drain Problems in New Halfa Irrigation Scheme", Study proposal 2017.

**Mojahid M.S. Almahi**, Ahmed A. Cabo, Mohieldin A.E. Al Kabier "Interaction between the reservoir and groundwater in the Merowe Dam ", Study proposal 2016.

**Mojahid M. Siddig** and Study team "Study of effects of drowning and drainage problems in Gazira and el-manaqil scheme (Engineering designs of el-manaqil Protective drain ) ", technical report, Jul 2016.

**Mojahid M. Siddig** and Study team "Study of effects of drowning and drainage problems in Gazira and el-manaqil scheme (Land Survey of el-manaqil Protective drain ) ", technical report, Mar 2016.

**Mojahid M. Siddig** and Study team "Study of effects of drowning and drainage problems in Gazira and el-manaqil scheme (The current situation and problem diagnosis) ", technical report, Dec 2015.