


Curriculum Vitae

Name:	Khalid Elnoor Ali Hassaballah		
Place and year of birth :	Sinnar, 1975		
Nationality/Nationalities:	Sudanese		
Country of residence:	Sudan		
Employer	Ministry of Water Resources and Electricity, The Hydraulics Research Centre (HRC-Sudan). http://www.hrs-sudan.sd/		
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A. PROFESSIONAL EXPERIENCE

1. Working experience in full years and months		
Location, Employer, Position, Main duties	Years/when	Amount of months
Assignment 1. PhD Research Fellow : UNESCO-IHE Institute for Water Education-Delft/The Netherlands.The research topic is « Hydrological Impacts of Land Use Management on the Blue Nile River Basin/Downstream Tributaires (Rahad and Dinder)	11/2012 11/2016	48 months
Assignment 2. Water Resources Specialist : Eastern Nile Watershed Management Projects/Community Watershed Management Project (CWMP)_Sudan Component/Dinder Local Implementation Unit	10/2010 10/2012	24 months
Assignment 3. Research Engineer, Coordinator of the under establishment REGIONAL CENTER ON "CAPACITY DEVELOPMENT AND RESEARCH IN WATER HARVESTING" IN SUDAN, UNDER THE AUSPICES OF UNESCO hosted by the Hydraulics Research Centre	7/2010 – 9/2010	2 months
Assignment 4. UNESCO-IHE,The Netherlands MSc Program	10/2008 – 4/2010	18 months
Assignment 5. Part time training courses in water resources management (University of Gezira- Water Management and Irrigation	3/2007 – 9/2008	19 months

institute		
Assignment 6. Assistant Research Engineer, team leader for the Water Resource Planning and management consultancy works	4/2006 - 2/2007	11 months
Assignment 7. Training Course in Remote Sensing Technologies & GIS	4/2006	2 weeks
Assignment 8. Geoinformatics course (GIS, GPS and Remote Sensing) applications in Rural Development	2-3/2006	6 weeks
Assignment 9. Assistant Research Engineer, team leader for River morphology studies	7/2004 - 1/2006	19 months
Assignment 10. Design Engineer, Elgash River Training Unit	3/2004 - 6/2004	4 months
Assignment 11. Assistant Research Engineer	11/2003 - 2/2004	4 months
		<u>Total 103 months</u>

2. Employment record, additional to above

Duration:	11/2012 - 11/2016	Position:	PhD Research Fellow
Employer:	UNESCO-IHE Institute for Water Education-Delft/The Netherlands	Duty station:	Sudan/Netherlands
Main duties: Assignment 1.	<ol style="list-style-type: none"> 1. To obtain better understanding of Land Use Land Cover Changes (LULC) and its impacts on hydrology of Dinder and Rahad River basins. 2. To determine the cause of changes of land use and land cover if any. 3. To study the interaction between hydrology, river morphology of Dinder river and ecohydrology of Mayas. 4. To understand the filling mechanism of Mayas, and determine the causes of drought in some of the Mayas. 5. To predict the future changes in the hydrology and river morphology of the Dinder and Rahad rivers, and the resultant effects on the ecohydrology of selected (pilot) Mayas. 6. To find out the optimum solutions to manage the ecosystem to mitigate the impairment impacts of the hydrology and morphology of the river into the DNP ecosystem and vice versa. 		
Duration:	10/2010 - ongoing	Position:	Water Resources Specialist

Employer:	Eastern Nile Watershed Management Project (ENWMP) Sudan Component	Duty station:	Dinder Local Implementation Unit (DLIU)
Main duties: Assignment 2.	<p>The main responsibilities include the following:</p> <ul style="list-style-type: none"> • Undertake analysis of general physical conditions of the selected watersheds in terms of soil structure, water resources, gradient of the land etc and advise accordingly on the best watershed management practices to be followed. • Assist/participate in the design and construction of soil and water conservation structures such as check dams, terraces, small irrigation schemes, water harvesting structures etc.. • Ensure that the designs of works will be based on most appropriate technology and standards • Perform hydrological analyses, rainfall-runoff modeling (HEC-HMS), hydraulic modeling (HEC-RAS), floodplain modeling and flood hazard/vulnerability/risk mapping. • Review and advice on technical specification and engineering designs prepared by consultancy firms (or any other entity) and participate in reviewing technical sections of the tender documents • Develop frameworks including questionnaires, checklists, tool kits and other appropriate tools for collecting information on water resources development and field activities. • Coordinate with local NGO, other team members, and community people/organizations for providing necessary technical inputs, field surveys, data collection and compilation. • Participate in technical audits • Work with the VDCs for the selection of land to be irrigated, based on the soil properties and land tenure characteristics that would sustain traditional and possibly new crops; • Design the water extensions schemes in small scale irrigation, starting from the main storage tanks to the fields, prepare the specifications of equipment required and supervise the equipment acquisition and the subcontracting of the construction of these extensions,. • Ensures that appropriate environmental mitigation measures are incorporated in the design and implementation of SWC structures and monitor their environmental impacts. • Participate in and organize training programs for local entities on proper operation and maintenance of watershed management facilities including, but not limited to, SWC structures (terraces, check dams, gabions etc), water harvesting structures (ponds, diversion canals etc.) small scale irrigation schemes etc. • Design and conduct training on water use in small-scale irrigation schemes • Contribute to the technical strengthening water committees (if there are any) and ensure maintenance of the irrigation schemes and of access to water, including the drinking water supply and sanitation schemes; • Develop a systematic database to store and process information on water resources and water supply of the villages; • Assist in the preparation of TOR for subcontracts for expansion of IWM systems, as well as monitoring the execution of these subcontracts; 		

	<ul style="list-style-type: none"> • Prepare periodic progress reports, as per the M&E guideline, in the area under his/her responsibility; • Visit the selected locations/ sites of the project implementation in different localities, conduct field surveys, collect information and relevant data, and compilation of information to generate results. • Co-ordinate with team members and local partner in organizing dissemination workshops, conferences, symposiums and other similar events from the engineering point of view. • Perform field and desk study for structural and non-structural flood control measures. • Assist project coordinator in various aspects of project works. 		
Duration:	7/2010 – 9/2010	Position:	Coordinator of the under establishment REGIONAL CENTER ON "CAPACITY DEVELOPMENT AND RESEARCH IN WATER HARVESTING" IN SUDAN
Employer:	HRS-MoIWR	Duty station:	Wad Medani
Main duties: Assignment 3.	<p>The main objective is to attain food security, poverty alleviation and minimize conflict over resources through research, capacity development and information networking activities in the field of rain water harvesting at the local, national and regional levels. As such it will contribute to the achievement of UNESCO's strategic objectives and inter-sectoral activities.</p> <p>The specific objectives are to:</p> <ul style="list-style-type: none"> • Develop the human and technical research capacity in water harvesting in Sudan and the region. • Promote scientific research on water harvesting and its implementation at national and regional levels and create synergy mechanism with relevant national and regional water harvesting institutions. • Establish and reinforce regional network in water harvesting by taking the necessary cooperative arrangements, strengthening local capabilities, including indigenous practices and foster increased bilateral cooperation between regional institutions through joint research and training programs among scientists of the region to ensure mobility of researchers and greater accessibility to information and new technologies; and organize, facilitate and disseminate the water harvesting database. • Tap the vast rainfall resources and human potential in Sudan and the region as a whole and harvest these resources for the well being of the people and for the economic development of the region. • Generate and provide scientific and technical information on training in water harvesting in the region that would allow the formulation of sound policies and legislations leading to 		

	<p>sustainable and integrated water resources management at the local, national and regional level.</p> <ul style="list-style-type: none"> • Contribute to the efficient and sustainable use of the water through comprehensive studies and proper design and implementation of water harvesting projects. • Develop and enhance simple water harvesting techniques based on sound basic and applied research. • Generate manuals and toolboxes for the design, implementation and operation of water harvesting projects, including different techniques, storage ponds, small dams, soil water management practices, and the like. 		
Duration:	10/2008 - 4/2010 (18 months)	Position:	Researcher/MSc Student in Water Science and Engineering
Employer:	UNESCO-IHE	Duty station:	Delft, The Netherlands
Main duties: Assignment 4.	<p><i>Master degree in Water Science and Engineering, specialization Hydroinformatics</i> at UNESCO-IHE Institute for Water Education/Delft/the Netherlands.</p> <p>The title of the thesis is "<i>Model-Based optimization of Downstream Impact During filling of a New Reservoir: Case study of Roseires/Mandaya Reservoirs on the Blue Nile</i>".</p> <p>The main objective of the study, is to find an optimum solution for the trans-boundary water resources problem between Ethiopia and Sudan on the Blue Nile River.</p>		

Duration:	3/2007 - 9/2008 (19 months)	Position:	Researcher
Employer:	Water Management and Irrigation Institute	Duty station:	Wad Medani
Main duties: Assignment 5.	<p>To study, and gain some knowledge on the Agroclimatology, Soil-water relation, soil conservation, flow in open channel, crop water requirements, flow measurement&control structures, and other courses</p>		

Duration:	4/2006 - 2/2007 (11 months)	Position:	Researcher
Employer:	HRS-MoIWR	Duty station:	
Main duties: Assignment 6.	<ul style="list-style-type: none"> ○ field and office data collection; ○ data processing, validation and analysis; ○ documentation and findings reporting 		

Duration:	4/2006 (2 weeks)	Position:	Researcher
Employer:	HRS-MoIWR	Duty station:	Khartoum
Main duties: Assignment 7.	<p>To study the application of GIS and Remote Sensing technique on water harvesting and catchment delineation</p>		

Duration:	2-3/2006 (6 weeks)	Position:	Researcher
Employer:	HRS - MoIWR	Duty station:	NIRD, India
Main duties:	To study the application of GIS and Remote Sensing technique on water harvesting and catchment delineation in rural development (National Institute of Rural Development (NIRD) - Hyderabad- India).		
Assignment 8.			

Duration:	7/2004 - 1/2006 (19 months)	Position:	Researcher
Employer:	HRS - MoIWR	Duty station:	Wad Medani
Main duties:	Participating in the ongoing researches at HRS, such as: River morphology studies, water harvesting, water resource planning and managements...		
Assignment 9.			

Duration:		Position:	Designer
Employer:	HRS - MoIWR	Duty station:	Kasala
Main duties:	Elgash River training Unit, embankments designer		
Assignment 10.			

Duration:	11/2003 - 2/2004 (4 months)	Position:	Researcher
Employer:	HRS - MoIWR	Duty station:	Wad Medani
Main duties:	Participating in the ongoing researches at HRS, such as: River morphology studies, water harvesting, water resource planning and managements...		
Assignment 11.			

B. EDUCATION (Excluding short term and non relevant education)

Educational establishment	Duration of studies	Degree and Graduation Year	Main Subjects
UNESCO-IHE	10/2008 - 4/2010	MSc in Water Science and Engineering, 2010	Hydroinformatics
University of Sinnar	1996 - 2002	BSc in Civil Engineering Grade V.Good Honours 2 nd Div.1	General

C. LANGUAGE ABILITIES

Language	Mother tongue	Basic level 1 or 2	Intermediate level 3 or 4	Advanced level 5 or 6
Arabic	√			
English				√

D. OTHER SPECIFIC INFORMATION (Personal skills etc)

Research areas of interest:

- **Generally:**
- River Hydraulics and Morphology;
- Integrated Water Resources Planning and Management Researches.

- **Specifically:**
 - Water Balance Studies;
 - Integrated Water resources planning and management studies.
 - Sediment monitoring programmes;
 - Sedimentation in reservoirs and channels;
 - Soil and foundation investigation;
 - River flood management
 - Modelling theory and practice: building water system model, calibration and verification.
 - Real time control of the water system.
 - Data driven modelling and computational intelligence.
 - River basin management.
 - Groundwater Modelling.
 - GIS-GPS & Remote Sensing Applications in Rural areas; and
 - Others.

Programming and Modelling Software:

- Microsoft Office skills: WORD, EXCEL, POWERPOINT.
- GIS, GPS and Remote Sensing applications.
- MATLAB for solving differential equation, data analysis and statistical analysis, programming, optimization, graphical user interfaces and running external programs.
- Software Development in Pascal. **Delphi** rapid application development environment.
- **SOBEK 1D 2D** and **HEC-RAS** for river flood modelling and 1D for flood routing.
- **AQUARIUS** for Real Time Control of Water System.
- **LINGO** for solving optimization problems.
- **MODFLOW** for groundwater modelling; contaminant transport through advection and diffusion.
- **MIKE-BASIN** for river basin management.
- **NAM** for Rainfall Runoff modelling.
- **MIKE-SHE, MIKE 11** and **HEC-HMS** for Catchment modelling.
- **mDSS4** for decision support system.

Memberships:

- Sudan Engineering Society (MSES)
- Sudan Engineering Council (MSEC)
- NBI/DSSN National Member

E. Publications

Papers:

1. K .hassaballah, Jonoski A, Popescu I, Solomatine D (2011) "**Model-Based Optimization of Downstream Impact during Filling of a New Reservoir: Case Study of Mandaya/Roseires Reservoirs on the Blue Nile River**". *Water Resources Management: 1-21*

Technical Reports:

1. Younis A. Gismalla, Khalid Elnoor Ali "**The Sediment monitoring programme- 2006**", June 2008; HRS Tech. Report, Wad Medani – Sudan.
2. Younis A. Gismalla, Khalid Elnoor Ali "**The Sediment monitoring programme- 2007**", August 2008; HRS Tech. Report, Wad Medani – Sudan.
3. Younis A. Gismalla, Yasir Salih and Khalid Elnoor "**Investigation of a Pump Sites for El Mellaha Group – The White Nile Schemes**" HRS report, July 2006.
4. HRS Team "**Investigation of a Pump Site for North Omdurman Fodder Production Scheme**" HRS report, August 2006.
5. Younis A. Gismalla, Yasir Salih and Khalid Elnoor "**Investigation of a Pump Site for Kassab Agricultural Project – The Blue Nile**" HRS report, July 2007.
6. Mhamed Basheer Abdalla, Khalid Elnoor Ali "**Bathymetric Survey of Roseires Reservoir**" Tec. Report, February 2007.
7. Khalid Elnoor Ali Hassaballah, 2010. M.Sc. thesis, *Model-Based Optimization of Downstream Impact during Filling of a New Reservoir: Case Study of Mandaya/Roseires Reservoirs on the Blue Nile River*", IHE Delft, the Netherlands.
8. Khalid Elnoor Ali "**Assessment of water resources in Dinder National Park**" tec.Report, November 2011.

F. REFERENCES

1-Abu Obieda Babiker Ahmeh, Associate Prof. (HRS/Sudan)
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2- Prof. Y.A.Mohamed (HRS/Sudan),UNESCO-IHE Delft the Netherlands
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