

NASER ALMANASEER, PhD

Civil Engineering –Climate and Water Resources

Director - Office of Scientific and International Relationships

Faculty Memeber – Department of Water Resources and Environmental Management

Project Manager and Coordinator – two international research and developemnt projects in water resources management

Al-Balqa' Applied University, Al-Salt 19117 Jordan

Phone: +96253491111 ext. 3536, Fax: +96253532392, Mobile: +962796569927

almanaseer@bau.edu.jo & almanaseer@engineer.com

Hello, I have over twenty two years of accumulated academic, research and professional experience in water resources engineering and management. My **academic experience** is illustrated in the designing and teaching of fundamental and advanced courses in groundwater and surface water hydrology, integrated water resources management, rainwater harvesting, environmental impact assessment (EIA), and geographic information system. My **research abilities** are recognized in developing research proposals and terms of references for climate and water resources related projects. Also, I am proficient in developing and calibrating lumped and distributed hydrologic models dealing with climate-surface water-groundwater interactions at various temporal and spatial scales. My **research interests** include integrated water resources management (IWRM), climate variability and change and their impacts on water resources and environment, managed aquifer recharge (MAR) especially with treated wastewater, the development of alternative water resources management strategies such as rainwater harvesting, and treated wastewater. I am also interested in the applications of quantitative and qualitative hydrologic optimization-models in sustainable water resources management. In addition to teaching and research duties, I am working as the director of scientific and international relationships at Al-Balqa' Applied University <http://bau.edu.jo> and a project and site manager for Sustainable Management of Available Water Resources with Innovative Technologies (SMART) <http://smart.bau.edu.jo/index.html>. A project in collaboration with UFZ - Germany. Further, I am a council member in the International Research Center for Water, Environment, and Energy (IRCWEE) at Al-Balqa' Applied University and a steering committee member in several projects with the Jordanian Ministry of Water and Irrigation and the Jordanian Ministry of Environment. Further, I have **consultancy experience** in research and development projects related to environmental impact assessment (EIA), climate and water resources with national and international organizations in Jordan and abroad including UNDP, GIZ, USAID, UNRWA, and USGS. Finally, I have a good networking skills and strong relations with most of the Jordanian experts in water and environment related issues including academic and government officials. Also, with selected and pioneer private sector firms in water engineering, energy, and innovative technology. My position as a director of scientific and international relations strengthen my abilities to initiate collaborative activities ranging from capacity development programs to joint research and implementation projects.



Education

Doctor of Philosophy (PHD) in Civil Engineering 2011: Civil, Construction and Environmental Engineering Department, North Carolina State University, Raleigh, North Carolina, 27695 USA. PhD Dissertation: *“Role of Climate Variability in Groundwater-Surface Water Interaction over the Southeast United States”*

Master of Engineering in Hydrology and Water Resources 2001: International Institute for Infrastructure, Hydraulic and Environmental Engineering (UNESCO-IHE), Delft, The Netherlands. Master Thesis: *“Groundwater Flow Modeling as a Tool in Water Abstraction Management, Study Case in The Netherlands”*

Bachelor of Science in Geology and Chemistry 1993: Mansoura University, Egypt. Graduation Project: *“Groundwater Availability Assessment in the Egyptian Delta Region”*

Professional Experience

Director: Sep 2015 - Present. Scientific and International Relationships, Al-Balqa’ Applied University Al-Salt 19117 Jordan

Manage the Office of Scientific and International Relations (SIR) at Al-Balqa’ Applied University (BAU), coordinate the relations with international institutions, expanding effective partnerships with institutions and research centers around the globe in a wide range of academic and research collaboration fields, preparing and following up on agreements and memorandums of understanding, and facilitating exchange programs, grants, and international study abroad programs, and help connect faculty and researchers with funding agencies and provides technical advice in research proposal planning and writing.

Vice Dean: Apr 2013 – Sep 2015. Scientific Research Deanship, Al-Balqa’ Applied University AlSalt 19117 Jordan

Evaluate research proposals in the fields of **1)** water resources engineering and management, and **2)** centralized and decentralized wastewater treatment and management. Develop proposals and seek grants for research and development projects. Also, contribute to managing national and international research and development projects: **a)** Project manager – Al-Balqa’ Applied University component for Sustainable Water Integrated Management (SWIM) funded by the EU <http://swim-sustainable.eu/index.php?id=251>, and **b)** Technical advisor - Al-Balqa’ Applied University component for Sustainable Management of Available Water Resources with Innovative Technologies (SMART) sponsored by the German Federal Ministry of Education and Research (BMBF) <http://smart.bau.edu.jo/index.html>

Assistant Professor: Aug 2011–Present. Department of Water Resources and Environment Management, Al-Balqa Applied University AlSalt 19117 Jordan

Duties include **1)** Teaching courses: Rainwater harvesting, integrated water resources management, groundwater hydrology, hydrochemistry, and environmental science <http://www.bau.edu.jo/>. **2)** Research grants: A three-years project (Jan 2014 – Dec 2017) entitled “Effects of Climate Variability and Change on Groundwater Resources in Jordan” and sponsored by Scientific Research Support Fund

(SRSF) Jordanian Ministry of Higher Education and Scientific Research
<http://www.mohe.gov.jo/HomePage/tabid/36/language/en-US/Default.aspx>

PhD Candidate and Research Assistant: Jan 2007 – Aug 2011. Department of Civil, Construction and Environmental Engineering, North Carolina State University, Raleigh NC – USA
<http://www.ncsu.edu/>

PhD Dissertation covers three major topics: **a)** Climate-surface water-groundwater interaction over the Southeast United States, **b)** General Circulation Models (GCMs) role and utility toward improving seasonal and monthly streamflow and groundwater predictions, and **c)** Improving hydrologic modeling calibration using multi-objective optimization techniques

Hydrologist (Part time Internship): Oct 2007 – Mar 2010. United States Geological Survey (USGS), Raleigh NC – USA <http://www.usgs.gov/>

1) Managed large hydrological data sets in ArcGIS, with hydrological data representation and analysis, **2)** performed statistical techniques including principal component analysis (PCA) and singular spectrum analysis (SSA), and **3)** supervised field work including site investigation and hydrologic data collection

Instructor: Sep. 2005 – Dec. 2006. Department of Water Resources and Environmental Management, Faculty of Agricultural Technology, Al-Balqa Applied University, Al-Salt 19117 Jordan

1) Teaching courses: Applied geology, groundwater hydrology, water resources engineering, water harvesting, and environmental science. **2)** Research projects: The impact of phosphate mining activities in southern Jordan on the water resources quantity and quality

Hydrogeologist: Jan 2005 – Sep 2005, United States Geological Survey (USGS), Amman Office – Jordan <http://www.usgs.gov/>

a) Co-managed Jordan's National Groundwater Database, **b)** evaluated selected groundwater-flow models in Jordan, and **c)** trained geologists and Hydrogeologist on office and field tasks

Water Resources Specialist: Jun 2004 – Jan 2005. Jordanian Ministry of Environment in collaboration with the European Union - Integrated Watershed Management Project, Jerash – Jordan <http://www.moenv.gov.jo/EN/Pages/default.aspx>

1) Established hydrologic database for selected watersheds in Northern Jordan, **2)** defined the major water resource problems within the investigated watersheds, and **3)** supervised water and environmental awareness programs

Research and Teaching Assistant: Jan 1998 – Dec 2003. University of Jordan - Water Research and Environment Study Center, Jordan

a) Courses: Geology, hydrology, hydrogeology, GIS, and environmental Science. **B)** Research: Contributed to several development and research projects in the field of water and environment, and participated in conducting groundwater-flow models for multiple basins in Jordan

Geologist and groundwater modeler assistant: Mar 1994 - Jan 1998. United Nations Development Program (UNDP) - Azraq Oasis Conservation Project, Jordan

1) Developed and calibrated groundwater-flow model for Azraq Basin in Jordan in PMWIN, 2) Applied the developed model to predict aquifer system responses under different pumping scenarios, and 3) Determined the optimum spatial and temporal pumping schedule to restore the Azraq Oasis

Consulting Experience

Team Leader and Water Resources Expert: Environmental Impact Assessment (EIA) for the construction and operation of a decentralized wastewater treatment unit, sponsored by GIZ, 2013: This is a 60 working days assignment distributed over 3 months and conducted by a team of 5 experts. I supervised the development of the terms of references (ToR), managed the conductance of the EIA during pre-scoping and scoping stages, and designed a training material based on the implemented project.

Team Leader and Water Resources Expert: Environmental Impact Assessment (EIA) for the construction and operation of a decentralized wastewater treatment unit for Queen Alia Airport in Jordan sponsored by GIZ, 2014: This is a 40 working days assignment distributed over 2 months and conducted by a team of 4 experts. I supervised the development of the terms of references (ToR), managed the conductance of the EIA during pre-scoping and scoping stages.

Climate and Water Resources Expert - Team member: Jordan's Third National Communication to UNFCCC, Climate Change Vulnerability and Adaptation Assessment, sponsored by UNDP Amman, and managed by IUCN Amman, 2014. I provided my services as a climate and water resources expert for about five months (Jan - Jun 2014).

<http://www.jo.undp.org/content/jordan/en/home/presscenter/pressreleases/2014/11/27/undp-launches-jordan-s-third-national-communication-on-climate-change/>

My responsibilities were to assess the vulnerability of water resources sector to climate change in Jordan with the emphasis on the Zarqa River Basin, document the existing adaptive capacity for the water sector in Jordan and evaluate potential adaptive capacities including alternative water resources.

Climate and Water Resources Expert / Consultant on the preparation of ToR for the development and downscale Hydro-climate model sponsored by United Nations Development Programme (UNDP), Programme of Assistance to the Palestinian People, 2014

I provided my services as a climate and water resources expert to draft a ToR for the development and downscaling of hydroclimate models from global circulation models (GCMs) for three major basins in Israel, Jordan and Palestine

Climate and Water Resources Expert - Rainwater Harvesting Specialist: Study for Rainwater Harvesting Project in Jerash Refugee Camp - Jordan, sponsored and supervised by United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA) Amman, 2014: I am providing my services as climate and water resources expert - rainwater harvesting specialist. This is a 120 working days assignment distributed over one year (Apr 2014 - Mar 2015) and is one expert job. My responsibilities are to conduct a feasibility study for various rainwater harvesting schemes/alternatives, develop terms of references (ToR) for tendering, supervise the construction, and develop capacity building activities concerning water conservation for UNRWA Staff and for selected stakeholders and local residents

Climate and Water Resources Expert - Project Manager: SWIM Sustain Water MED Project, in collaboration between with GIZ Amman and Al-Balqa Applied University, sponsored by European Union and German Government. March 2013– Sept 2015. The main goal of this project is to provide alternative water resource (reclaimed water) for the public security department (PSD) in Amman, Jordan to cope with climate stresses on the allocated water resources at the PSD site. My services as a project manager span over the entire period of the project (Mar 2013 – Mar 2015), and working part time (50% of my time). My responsibilities are to assist in designing, constructing, installing, and implementing a decentralized waste water treatment plant with SBR technology. Also, to provide training on EIA and OM related to this plant. During this period, I co-developed four ToRs for the baseline study, for the Environmental Impact Assessment (EIA), for the wastewater treatment plant tendering, and for the water reuse

Awards and Scholarships

- 2000-2001 Netherlands Fellowship Program, Master Full Scholarship – The Netherlands
- 2007-2009 U. S. Geological Survey (USGS) Internship, Raleigh - North Carolina, USA
- 2007-2011 Al-Balqa' Applied University, PhD Full Scholarship, Raleigh - North Carolina, USA
- 2015 Erasmus Mundus, Post Doctorate, Berlin-Germany

Professional Memberships

- Jordanian Engineers Association
- American Society of Civil Engineers
- American Geological Union

Selected Training Courses

- International Training Workshop on Rainwater Harvesting and Utilization in Lanzhou City, China, from 11-29 October 2012. Sponsored by the Ministry of Science and Technology (MOST) of the People's Republic of China, Gansu Research Institute for Water Conservancy
- Application Measures to Reduce Climate Changes Impacts on Food Productivity in Jordan, Sep. 2012 sponsored and supervised by Food and Agriculture Organization (FAO) and Al-Shamil Engineering Office (SEO), Jordan
- Water and Evaluation Program Workshop (WEAP), Nov. 2011 sponsored by UNESCO, Amman-Jordan
- Integrated management for water resources by using mathematical models, Sep 2005, Sponsored by Al-Balqa Applied University (BAU), Jordan
- Introduction to ArcGIS I, Feb 2005, sponsored by United States Geological Survey (USGS), Jordan
- Introduction to ArcGIS II, Feb 2005, sponsored by United States Geological Survey (USGS), Jordan
- Advanced GIS-based water resources management, Dec 2002, sponsored by United States Agency for International Development (USAID) in collaboration with the University of Jordan, Jordan
- Advanced watershed tools, July 2002, sponsored by United States Agency for International Development (USAID) in collaboration with the University of Jordan, Jordan

Publications

Naser Almanaseer and Bassim Abbassi, Strategies and Measures for Decentralized Wastewater Management in Jordan, Regional Conference on Sustainable Integrated Wastewater Treatment and Reuse. 1-2, December 2014 Egypt

Dongyuan Sun¹, a, Chengyi Zhao, Yuanhong Li¹, Dongmei Peng and **Naser Almanaseer**, Fractal Study of Land Use Change in the Tailan River Basin, Xinjiang, China, *Advanced Materials Research Vols. 955-959* (2014) pp 3968-3973

Rakad A. Ta'any, Mohammad A. Alaween, Mustafa M. Al-Kuisi and **Naser Almanaseer**, GIS Based Model of Groundwater Vulnerability and Contamination Risk of Wadi Kufrinja Catchment Area, Jordan, *World Applied Sciences Journal* 24 (5): 570-581, 2014

Almanaseer, N., Sankarasubramanian, A., and Bales, J. "Improving Groundwater Predictions Utilizing Seasonal Precipitation Forecasts from GCMs Forced with SST Forecasts." *J. Hydrol. Eng.*, 10.1061/(ASCE)HE.1943-5584.0000776, 2014

Almanaseer, N., and A. Sankarasubramanian, Role of Climatic Variability in Influencing Interannual Groundwater Variability over Southeast US, *Journal of Hydrological Engineering*, 17(9), 1001-1010, 2013

Tarek G. Ammari, Rakad A. Ta'any, Samih Abu-Baker, Alaedeen B. Tahboub, **Naser Almanaseer**, Nedal Aloran, Raihan Abu Harb, Taleb R. Abu-Zahra, Saeid M. Abu-Romman, Issam M. Qrunfleh, and Maen K. Hasan, Vegetative bioremediation of extremely salt-affected calcareous soils, *Journal of Food, Agriculture and Environment (JFAE)* 11(2):1277-1281, 2013

T.G. Ammari, R. Tahhan, Samih Abubaker, Y. Al-Zu'bi, A. Tahboub, R. Ta'any, S. Abu-Romman, **N. Almanaseer**, and M.H. Stietiya, Soil Salinity Changes in the Jordan Valley Potentially Threaten Sustainable irrigated Agriculture, *Journal of Bedosphere*, 23(3), 376-384, 2013

Chapman M.J., **Almanaseer Naser**, McClenney Bryce, and Hinton Natalie, 2011, Fluctuations in groundwater levels related to regional and local withdrawals in the fractured-bedrock groundwater system in northern Wake County, North Carolina, March 2008–February 2009: U.S. Geological Survey Scientific Investigations Report 2010–5219, 60 p.

References

Formal Advisor: Prof. Dr. Sankar Arumugam, Professor of Hydroclimatology, North Carolina State University, North Carolina, USA [sankar_arumugam@ncsu.edu]

Formal Boss: Prof. Dr. Jerad Bales, Chief Scientist for Hydrology, U.S. Geological Survey, Reston, USA [jdbales@usgs.gov]

Current Boss: Prof. Dr. Bassim Abbassi, Professor of Environmental Engineering, Dean of Scientific Research, Al-Balqa' Applied University, Al-Salt 19117 Jordan [babbassi@bau.edu.jo]