

Amr Mossad

Professor of Agricultural Engineering

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Prof. Dr. Amr **Mossad** is a water and biosystems engineering faculty member with over 20 years of substantial agricultural experience in many local and international institutions (Egypt, Saudi Arabia, Italy). Dr. **Mossad** focuses mainly on the combined topics of water management and irrigation engineering, emphasizing both contemporary trends and practical applications of the latest technologies available used in mega agrarian projects to sustain the environment, economics, and optimal engineering design processes.

PERSONAL INFORMATION

Name: Amr Mossad Abdel-Maksoud Abdel-Bary
Date of Birth: June, 18th 1981
Nationality: Egyptian
Marital Status: Married

EDUCATION

- PhD of agricultural science, 2011, Faculty of Agriculture, University of Palermo, Italy.
- M.Sc of Environment and Health, 2006, Faculty of Science, University of Tuscia, Italy.
- B.Sc of Agriculture Mechanization 2002, Faculty of Agriculture, Ain Shams University, Cairo, Egypt.

PROFESSION

- A member of the Appeals Committee reviewing grievances submitted by stakeholders against administrative decisions issued by the National Food Safety Authority, representing the Authority by a decision from the Prime Minister's Office, June 2025 till now.
- Executive Director of National Food Safety Authority (NFSA)- Egypt, January 2025 till now.
- Member of the Board of Directors of the Ain Shams University Experience House Since 2022 - 2025.
- Director of Center of Agricultural studies and consultancy (CASC), Faculty of Agriculture, Ain Shams University, Cairo, Egypt Since 2021 - 2025.
- Coordinator of International Relation Office (IRO), Faculty of Agriculture, Ain Shams University, Cairo, Egypt Since 2020 - 2025.

- Director of International Student Office (ISO), Faculty of Agriculture, Ain Shams University, Cairo, Egypt Since 2020 - 2025.

LANGUAGES

- Arabic (mother tongue)
- English.
- Italian.

PROFESSIONAL EXPERIENCE

Academic:

- Professor (2025-), Agricultural Engineering Department at Ain Shams University, Cairo, Egypt.
- Associate Professor (2020-2025), Agricultural Engineering Department at Ain Shams University, Cairo, Egypt.
- Assistant Professor (since 2012-2019), Agricultural Engineering at College of food and agricultural sciences, King Saud University, Riyadh, Saudi Arabia.
- Lecturer (2011-2020), Agricultural Engineering Department at Ain Shams University, Cairo, Egypt.
- Teacher Assistant (2007-2011), Agricultural Engineering at Ain Shams University in Cairo, Egypt.
- Demonstrator (2003- 2007), Agricultural Engineering at Ain Shams University in Cairo, Egypt.

Research project

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| 2021-2025 | Hydrologic Characteristics and Flood Risk Analysis for Major Watersheds in the Arabian Peninsula. Funded by King Abdulaziz City for Science and Technology (KACST), Saudi Arabia. (Co-principal Investigator). |
| 2014-2019 | Integrated Web-based Program for Water-Energy Management and Conservation in Irrigated Area, Funded by King Abdulaziz City for Science and Technology (KACST), Saudi Arabia. (Co-principal Investigator). |
| 2014-2019 | Assessment of Emerging Organic Contaminants Occurrence for Wastewater Treatment Plants in Saudi Arabia, Funded by King Abdulaziz City for Science and Technology (KACST), Saudi Arabia. (Co-principal Investigator). |

- 2012-2013 Incentives-Based Integrated Rural Development in Minia Governorate, Funded by Europe Aid/131-645/M/ACT/EG. (Co-coordinator of the project management unit).
- 2012-2013 Establishment of Plantation Forests and Development of Sustainable Forestry in Desert Lands of Egypt Using Sewage Water, DAAD. (Researcher).
- 2012-2013 Value-chain Project for Agricultural Technical Schools, USAID and MUCIA “Midwest Universities Consortium for International Activities”. (Consultant).
- 2004 - 2007 Priorities of Modern Irrigation Systems Utilization in Old Land of the Nile Delta and Valley. Funded by Ain Shams University and Academy of Scientific Research and Technology. (Research Assistant).
- 2003 -2006 Minimizing Environmental Pollution in Agro-Chemicals by Using Chemigation Techniques in Newly Planted Lands. Regional Council of Agricultural Research and Extension in Egypt. (Research Assistant).

Consultation:

- General consultant for the Agricultural and landscape projects advisors (ALPA), 2021.
- Consultant of Canal Sugar company to improve agricultural productivity and sustainability across 32000 feddan (Phase 1), 2024.
- Drainage Consultant of JK Company for agricultural investment, Bahariya Oasis, 2024.
- Irrigation and Drainage Consultant of El Borai Farms, Menia, 2024.
- Irrigation and Drainage Consultant of First Grain Company for Livestock Development and Agricultural Investment, Menia (3000 feddan), 2022-2023.
- Designing and implantation of the irrigation networks for Eng. Mohamed Lamloom’s farm in Menia, 2023.
- Irrigation and Drainage Consultant for the land of the Agricultural Professions syndicate in the Kharga Oasis in the New Valley, 2022.
- Design, develop of the landscape drainage network of the Oasis R3, New Administrative Capital 2022.
- Participated in a two-dimensional geoelectrical exploratory study of subsurface layers and development of applicable solutions for landscape drainage for El-Mansoura2, New Administrative Capital 2022.

- Design, develop of the landscape drainage network of the R1 compound, New Administrative Capital 2021.
- Expert review of documents pertaining to the Lake Bardawil and Sinai Restoration Initiative (Dredging International NV), A strategic ‘living systems’ approach to biosphere restoration for local water cycle regeneration, global climate stabilization and transformative land development (2022-2023).
- A survey of the bio-diversity – plants, reptiles, insects, and animals of the area of land roughly 110,000 m² that surrounds our War Cemetery at El Alamein (Commonwealth War Graves Commission) - 2024.
- Irrigation and drainage consultant of the Higher Institute for Agricultural Cooperation’s farms – 2024 till now.
- Irrigation and landscape consultant for the lotus park site of the Egyptian Refining Company (ERC).
- Participated in the reformation of the Al-Hashemiya Company's farm in Wadi Al-Natrun (10000 ha).
- Preparing a proposal to develop university housing gardens of Ain Shams University.
- Participated in preparing a preliminary study for IFFCO to determine the economic and technical feasibility of cultivating tomatoes under the pivot irrigation system.
- Participated in a field study to modernize irrigation networks for the Kingdom Dates Company in the Qassim region, KSA.
- Participated in the renovation of Prince Ahmed bin Abdulaziz farm's irrigation system in Riyadh city, KSA.
- Participated in the soil studies of AlDahra agricultural company, Salhya, Egypt (650 ha).
- Participated in the soil studies of AlDahra agricultural company, Tushki, Egypt (10500 ha).
- Participated in establishing the Italo-Egyptian agricultural company (Green Gold), Egypt (10500 ha).

ASSOCIATION MEMBERSHIPS

- Member of Agricultural Association, Egypt, since 2002.
- Member of Misr Society of Agricultural Engineering, Egypt, since 2003.
- Member of Natural Protectorates Pioneer Society, Egypt, since 2004.
- Member of Academia Kronos, Italy, since 2006.
- Member of Agricultural Chemistry and Environment Protection society, Egypt, since 2006.

MISSION AND VISITS

- Staff Training Week in the framework of the ERASMUS+ programme, Philipps-Universität Marburg (March, 2023)
- Visiting PhD student, university of Padova, Italy (May, 2010).
- Visiting PhD student, Technical University of Valencia (July, 2010).
- 200th anniversary in 2010 of Humboldt-University, Faculty of Agriculture and Horticulture , Berlin, Germany (October, 2010).

TEACHING COURSES

- Biosystems engineering.
- Computer application in agricultural engineering.
- Soil mechanics.
- Drainage engineering.
- Environmental engineering.
- Water resource management.
- Irrigation and drainage engineering.
- Information and communication network
- Fundamentals of agricultural engineering
- Innovation in agricultural product

TRAINING PROGRAMS

- Training course on International publishing of research, faculty and leadership development center, Cairo University, 13-15 August 2011.
- Training course on Strategic planning, faculty and leadership development center, Cairo University, 16-18 August 2011.
- Training course on communication skills, faculty and leadership development center, Cairo University, 23-25 August 2011.
- Training workshop on the socio-economic and household surveys of water benchmark project (WBM) and water & livelihood initiative (WLI) in Egypt (11-15, September, 2011).
- Workshop on research activity at the university of cukurova, Adana Turkey, by professor Turgut Yesiloglu held in 14 September 2010 Dipartimento S.EN.FI.MI.ZO.

Sezione Frutticoltura Mediterranea, Tropicale e Subtropicale, University of Palermo, Italy.

- Workshop on biotechnology research in horticulture department in Cukurova University Adana Turkey, by professor Yildiz Aka Kacar held in 28 September 2010 Dipartimento S.EN.FI.MI.ZO. Sezione Frutticoltura Mediterranea, Tropicale e Subtropicale, University of Palermo, Italy.
- Participated in the course of applied statistics, Palermo University, 9-18 June 2008.
- Training course on technical research in agricultural sciences, Centro Studi ALIAS, 39/A, Via dei leoni - 90146 Palermo, 2008.
- Aquaculture, principles and practices, world fish center, Abbassa, Abou-Hammad, Sharkia, EGYPT July 2007.
- Integrated training course in information technology, scientific computer center, Ain Shams University, 2005-2006.
- Management of chemigation systems, Faculty of agriculture, Ain Shams University, 2005.

COMPUTER SKILLS

- Microsoft office
- ArcGIS and QGIS
- Global mapper
- Watershed modelling system (WMS)
- R and Rstudio
- SPSS
- SigmaPlot 10.0
- Auto CAD

INTERNATIONAL PEER REVIEWING

- International Commission of Agricultural and Biosystems Engineering (CIGR)
- International Journal of Agricultural and Biological Engineering (IJABE)
- Desalination and Water Treatment
- Journal of Hydrologic Engineering

SCIENTIFIC PRODUCTION

Publications:

- Alazba, A. A., **Mossad, A.**, Geli, H. M., El-Shafei, A., Alrdyan, N., Ezzeldin, M., & Radwan, F. (2025). Long Term Rain Patterns of Major Watersheds in Saudi Arabia. *Water*, 17(21), 3086. <https://doi.org/10.3390/w17213086>
- Abd El-Aziz, S. T., Bedair, O. M., **Mossad, A.**, Ahmed, H. E., El Sawah, K. M., & Salama, A. M. M. (2025). EFFECT OF USING AN ELECTROMAGNETIC FIELD ON THE PERFORMANCE OF REVERSE OSMOSIS MEMBRANES IN BRACKISH WATER. *Misr Journal of Agricultural Engineering*, 42(4), 229-246.
- Alazba, A. A., **Mossad, A.**, Geli, H. M. E., El-Shafei, A., Elkatoury, A., Ezzeldin, M., Alrdyan, N., & Radwan, F. (2025). Mapping Land Surface Drought in Water-Scarce Arid Environments Using Satellite-Based TVDI Analysis. *Land*, 14(6), 1302. <https://doi.org/10.3390/land14061302>
- Alazba, A. A., **Mossad, A.**, Geli, H. M. E., El-Shafei, A., Ezzeldin, M., Alrdyan, N., & Radwan, F. (2025). Transboundary Urban Basin Analysis Using GIS and RST for Water Sustainability in Arid Regions. *Water*, 17(10), 1463. <https://doi.org/10.3390/w17101463>
- Elkatoury, A., Alazba, A.A., Radwan, F., Kayad, A., Mossad, A. (2024). Evapotranspiration Estimation Assessment Using Various Satellite-Based Surface Energy Balance Models in Arid Climates. *Earth Syst Environ* 8, 1347–1369. <https://doi.org/10.1007/s41748-024-00501-1>
- Mossad, A.**, & Abdou, S. H. (2024). PREDICTING STANDARDIZED PRECIPITATION EVAPOTRANSPIRATION INDEX (SPEI) USING SVM AND ARIMA MODELS: A COMPARATIVE STUDY. *Misr Journal of Agricultural Engineering*, 41(4), 263-278.
- Saeed, A., Abdel-Aziz, A.A., **Mossad, A.**, Abdelhamid, M.A., Alkhaled, A.Y., Mayhoub, M. (2023). Smart Detection of Tomato Leaf Diseases Using Transfer Learning-Based Convolutional Neural Networks. *Agriculture*, 13, 139. <https://doi.org/10.3390/agriculture13010139>
- Radwan, F., Alazba, A.A., Alotaibi, M. & **Mossad, A.** (2022). Site suitability analysis for desalination plants based on the complementarity of GIS, RST, MCE, and spatial AHP in arid and semiarid regions. *Arab J Geosci* 15, 1763. <https://doi.org/10.1007/s12517-022-11038-w>
- Radwan, F., Alazba, A.A. & **Mossad, A.** (2020). Analyzing the geomorphometric characteristics of semiarid urban watersheds based on an integrated GIS-based approach. *Model. Earth Syst. Environ.* 6, 1913–1932. <https://doi.org/10.1007/s40808-020-00802-0>
- Radwan, F., Alazba, A.A. & **Mossad, A.** (2020). Analyzing urban watersheds morphometric in arid and semiarid regions using the complementarity of RST and GIS. *Arab J Geosci* 13, 1237. <https://doi.org/10.1007/s12517-020-06161-5>
- Mossad, A.**, Farina, V., Lo Bianco, R (2020). Fruit Yield and Quality of ‘Valencia’ Orange Trees under Long-Term Partial Rootzone Drying. *Agronomy*, 10, 164. <https://doi.org/10.3390/agronomy10020164>

- Elkatoury, A., Alazba, A.A. & **Mossad, A.** (2020). Estimating Evapotranspiration Using Coupled Remote Sensing and Three SEB Models in an Arid Region. *Environ. Process.* 7, 109–133. <https://doi.org/10.1007/s40710-019-00410-w>
- Elkatoury, A., Alazba, A. A., & **Mossad, A.** (2020). Evaluating the performance of two SEB models for estimating ET based on satellite images in arid regions. *Arab J Geosci* 13, 74. <https://doi.org/10.1007/s12517-019-5019-3>
- Radwan, F., Alazba, A. A., & **Mossad, A.** (2019). Flood risk assessment and mapping using AHP in arid and semiarid regions. *Acta Geophysica*. doi: 10.1007/s11600-018-0233-z
- Radwan, F., Alazba, A. A., & **Mossad, A.** (2019). Flood risk assessment and mapping using AHP in arid and semiarid regions. *Acta Geophysica*. doi: 10.1007/s11600-018-0233-z
- Radwan, F., Alazba, A. A., & **Mossad, A.** (2018). Estimating potential direct runoff for ungauged urban watersheds based on RST and GIS. *Arabian Journal of Geosciences*, 11(23), 748. doi: 10.1007/s12517-018-4067-4
- Mossad, A.**, & Alazba, A. A. (2018). Determination and prediction of standardized precipitation index (SPI) using TRMM data in arid ecosystems. *Arabian Journal of Geosciences*, 11(6), 132. doi: 10.1007/s12517-018-3487-5
- Mossad, A.**, Scalisi, A., & Lo Bianco, R. (2018). Growth and water relations of field-grown ‘Valencia’ orange trees under long-term partial rootzone drying. *Irrigation science*, DOI 10.1007/s00271-017-0562-8
- Lo Bianco, R.; Grilo, F. S.; **Mossad, A.** (2018) Deficit irrigation does not affect alternate bearing of ‘Valencia’ orange trees. In : *Acta Horticulturae*, n° 1229, p. 325–330. DOI: 10.17660/ActaHortic.2018.1229.49
- Radwan, F., Alazba, A. A., & **Mossad, A.** (2017). Watershed morphometric analysis of Wadi Baish Dam catchment area using integrated GIS-based approach. *Arabian Journal of Geosciences*, 10(12), 256.
- Mossad, A.** & Alazba, A. A. (2016). Simulation of Temporal Variation for Reference Evapotranspiration under Arid Climate. *Arabian Journal of Geosciences*, 9, 386.
- Mossad A.**, Elhelw W., Elshashtawy H., Farina V. (2016). Mass Modelling by Dimension Attributes for Mango (*Mangifera indica* cv. Zebdia) Relevant to Post-Harvest and Food Plants Engineering, *CIGR*, 18 (2), 219-229.
- Elshashtawy H., **Mossad A.**, Elhelw W., Farina V. (2016). Comparative Study on the Quality Characteristics of Some Egyptian Mango Cultivars Used for Food Processing. *Annals of Agricultural Sciences*, 61 (1), 49–56.
- Mossad, A.** & Alazba, A. A. (2015). Drought Forecasting Using Stochastic Models In A Hyper-Arid Climate. *Atmosphere*, 6, 410-430.
- Mossad A.**, Mehawed H., El-Araby A. (2014). Seasonal Drought Dynamics in Baheira governorate, Egypt. *Am. J. Environ. Sci.*, 10: 140-147.

Padoan D., **Mossad A.**, Khan P.S. Sha Valli, Chiancone B., Germanà M.A. (2013). Ploidy Levels in Citrus Clementine Affects Leaf Morphology, Stomatal Density and Water Content. *Theoretical and Experimental Plant Physiology*. *Theoretical and Experimental Plant Physiology*, 25 (4), 283-290.

Farina V. and **Mossad A.** (2011). Yield and Fruit Quality Characterization of Eight Old Sicilian Apple Cultivars. *International Journal of Fruit Science*, 11:264-275.

Farina V., Mazzaglia A., **Mossad A.**, Lanza C.M. (2010). Valorizzazione della Biodiversità Frutticola in Sicilia: Caratterizzazione Qualitativa di Vecchie Varietà di Melo.VIII Convegno AISSA – Udine, 24-26 Novembre.

Mossad A. (2011) Water Status, Growth, Yield and Fruit Quality of 'Valencia' orange Trees Under Partial Root-Zone Drying. PhD Dissertation, University of Palermo, Italy. (PhD thesis).

Mossad A. (2006). Valutazione del Rischio da Esposizione a Rumore negli Addetti alla Raccolta delle Nocciole. Tesi di Master, Università degli Studi della Tuscia, Italy. (MSc thesis).

Translated books:

Alazba, A. A. & **Mossad, A.** Irrigation and Drainage Engineering, Authored by Peter Waller, Muluneh Yitayew.

Thesis co-advisors:

- Assessment for Water Management and Hydraulics in Central Control Irrigation System of Landscape Based on the Geographic Information System (The thesis was discussed in 2016).
- Integrated Hydrologic Modelling using Geographic Information Systems to Mitigate Rainwater Flood Risk in the Riyadh Metropolitan Area (The thesis was discussed in 2018).
- Evapotranspiration Estimate via Surface Energy Balance Models Based on Satellites Data in Arid Climate Regions (The thesis was discussed in 2019)
- Characteristics Analysis of Water Desalination Plants via Web-Based Geographic Information System (The thesis was discussed in 2019).