

Shimaa Sayed Mohamed Azab

Assistant Professor of Structural Engineering and Environmental Planning,
Environmental Planning and Development Center, Institute of National Planning



PERSONAL DATA

Nationality	Egyptian
Date of Birth	March 24, 1988
Address	El-Maadi, Cairo, Egypt
Email	Shaymaa.azab@inp.edu.eg

CURRENT ACADEMIC AND ADMINISTRATIVE POSITION:

- Assistant Professor of Structural Engineering and Environmental Planning, Environmental Planning and Development Center, Institute of National Planning (INP), *October 2022 - to Date*.
- Director of the Economic Governance Unit, Institute of National Planning (INP), *February 2024 - to Date*.
- Head of Governance and Institutional Development Department, Quality Assurance and Accreditation Unit, Institute of National Planning (INP), *March 2024 - to Date*.

EDUCATION:

- **Diploma in Evidence-Informed Policy Making**, North African Systems Analytics Center (NAASAC), 2023.
- **Ph.D. in Structural Engineering**, Construction Engineering and Management Division, Structural Engineering Department, Faculty of Engineering, Cairo University, 2022.
Thesis Title: Assessment of Climate Changes Impact on Coastal Vulnerability for Feasibility of Developing New Communities.
- **Diploma in Microeconometrics**, Barcelona School of Economic, Barcelona, Spain, 2018.
- **M.Sc. in Structural Engineering**, Construction Engineering and Management Division, Structural Engineering Department, Faculty of Engineering, Cairo University, 2013.
Thesis Title: Environmental and Economic Impact Assessment of Construction and Demolition Wastes using System Dynamics.
- **B.Sc. in Civil Engineering** (with Highest Honors and Ranked First in the Graduating Class).
Graduation Project: Construction Project Management (Excellent)

WORK EXPERIENCE:

- Assistant Professor of Structural Engineering and Environmental Planning, Environmental Planning and Development Center, Institute of National Planning (INP), *October 2022 - to Date*.
- Director of the Economic Governance Unit, Institute of National Planning (INP), *February 2024 - to Date*.
- Head of Governance and Institutional Development Department, Quality Assurance and Accreditation Unit, Institute of National Planning (INP), *March 2024 - to Date*.

- Assistant Lecturer, Environmental Planning and Development Center, Institute of National Planning (INP), *November 2016- October 2022.*
- Project Engineer, National Authority for Remote Sensing and Space Sciences (NARSS), *December 2014 - October 2016.*

HONORS AND AWARDS:

- **Graduate Studies Excellence Prize** – Awarded for the *Best Scientific M.Sc. Thesis* in the Structural Engineering Department, 2013. Center for Advancement of Postgraduate Studies and Research in Engineering Sciences - Cairo University, Faculty of Engineering - Cairo University.
- **A Shield of Appreciation** from the President of Institute of National Planning (Egypt) for participation in preparing the 2nd Annual Conference entitled “*Industrialization and Sustainable Development*”, 18 May 2018.

PUBLICATIONS AND ACADEMIC METRICS:

ACADEMIC METRICS:

Database	H-index	Publications	Total Citations	Citations (without-Self Citations)
Scopus	10	13	733	—
Web of Science	9	13	591	581
Google Scholar	10	14	1112	—

PUBLICATIONS:

International Publications:

- **Azab, S.**, Abou-Ali. H., and Ramadan, R.H. 2026. Spatial Correlation Analysis of Climate Change Risks and Urbanization Impacts using Multispectral Satellite Imagery: A Case Study of Alexandria, Egypt. *International Journal of Applied Earth Observation and Geoinformation. (Under Publication)*
- Megahed. A., **Azab, S.**, Marzouk, M. 2026. Dynamic Performance Assessment of Public Assembly Buildings. *Energy & Buildings. (Under Publication)*
- Khedr, M., Metawie, M., Eldin, A. S., Hamdy, A., El-Shihy, A., **Azab, S.**, ... & Marzouk, M. (2025). 3D visualization of damaged statues using Gaussian splatting and web interface integration. *npj Heritage Science*, 13(1), 587.
- Osama, O., **Azab, S.**, & Marzouk, M. (2025). Analyzing sustainability behavior of building materials using system dynamics and decision-making techniques. *Case Studies in Construction Materials*, e05545.
- Marzouk, M., & **Azab, S.** (2024). Modeling climate change adaptation for sustainable coastal zones using GIS and AHP. *Environmental Monitoring and Assessment*, 196(2), 147.
- El-Maraghy, M., Metawie, M., Safaan, M., Eldin, A. S., Hamdy, A., El Sharkawy, M., **Azab, S....** & Marzouk, M. (2024). Predicting energy consumption of mosque buildings during the operation stage using deep learning approach. *Energy and Buildings*, 303, 113829.

- **Azab, S.**, Rabie, A. E., Hafez, F., Mostafa, A. H., El Rayes, A. H., & Awad, M. M. (2023). Decent Life Initiative and Sustainable Development Goals: A systems thinking approach. *Systems*, 11(9), 446.
- Marzouk, M., **Azab, S.**, Elshaboury, N., Megahed, A., Metawie, M., El Hawary, M., Ghaith, D. and Bayoumi, A., 2022. Modeling COVID-19 Effects on Sustainable Development Goals in Egypt Using System Dynamics.
- Marzouk, M., **Azab, S.**, Elshaboury, N., Megahed, A., Metawie, M., Hawary, M.E., Ghaith, D. and Bayoumi, A., 2022. Modeling COVID-19 effects on SDGs using system dynamics in Egypt. *Environmental Science and Pollution Research*, pp.1-12.
- Marzouk, M., Elshaboury, N., **Azab, S.**, Megahed, A., & Metawie, M. (2022). Assessment of COVID-19 impact on sustainable development goals indicators in Egypt using fuzzy analytic hierarchy process. *International Journal of Disaster Risk Reduction*, 82, 103319.
- Marzouk, M., Elshaboury, N., Abdel-Latif, A. and **Azab, S.** 2021. Deep learning model for forecasting COVID-19 outbreak in Egypt. *Process Safety and Environmental Protection*, 153, pp.363-375.
- Marzouk, M., Attia, K. and **Azab, S.** 2020. Assessment of Coastal Vulnerability to Climate Change Impacts Using GIS and Remote Sensing: A Case Study of Al-Alamein New City. *Journal of Cleaner Production*, p.125723.
- Marzouk, M., **Azab, S.**, & Metawie, M. 2018. BIM-based Approach for Optimizing Life Cycle Costs of Sustainable Buildings. *Journal of Cleaner Production*, 188, 217-226.
- Marzouk, M., & **Azab, S.** 2017. Analyzing sustainability in low-income housing projects using system dynamics. *Energy and Buildings*, 134, 143-153.
- Marzouk, M., **Azab, S.**, & Metawie, M. (2016). Framework for sustainable low-income housing projects using building information modeling. *Journal of Environmental Informatics*, 28(1), 25-38.
- Marzouk, M., & Azab, S. 2014. Environmental and economic impact assessment of construction and demolition waste disposal using system dynamics. *Resources, Conservation and Recycling*, 82, 41-49.
- Marzouk, M., and **Azab, S.** 2014. Life-Cycle Cost Analysis of Sustainable Egyptian Low-Income Housing Projects, *International Conference on Advanced Technology & Science ICAT'14*, Antalya, Turkey.

National and Regional Publications:

- Walaa Hussein Abdallah¹, Sahar El-Bahai, Mohammed Hassanien, Asmaa Hamdy, **Shimaa Azab**, 2026. The Role of Environmental, Social, and Governance (ESG) Indicators in Promoting Sustainable Development in Egypt: An Empirical Econometric Analysis. *The International Journal of Public Policies in Egypt*. (Under Publication)
- Sahar El-Bahai et al. 2026. The Impact of Applying the European Carbon Border Adjustment Mechanism (CEBAM) on Egyptian Exports: An Applied Study on the Fertilizer Sector Planning and Development Series, Co-Authored research, Institute of National Planning (Egypt). (Under Publication)
- Nafisa Abu El-Saud et al. 2026. Environmental, Social and Governance (ESG) Sustainability Metrics and Their Role in Promoting Sustainable Development: A Comparative Study between Egypt and BRICS Countries. Planning and Development Series, Co-Authored research, Institute of National Planning (Egypt). Under Publication

- Abou Aly, Hala, Ghaly, Sherine Boshra, **Shimaa Azab**, et al. 2025. Investment case towards ending Preventable Maternal Deaths in Egypt Report (2025), UNFPA and Institute of National Planning. [UNFPA Egypt | Investment Case Towards Ending Preventable Maternal Deaths in Egypt](#)
 - Abou Aly, Hala, **Shimaa Azab** et al. 2024. Investment case towards ending Unmet Needs for Family Planning in Egypt Report (2024), UNFPA and Institute of National Planning. [UNFPA Egypt | Investment case towards ending unmet need for family planning in Egypt](#)
 - Nehal El-Moghrabi, **Shimaa Azab**, Hassan Rabie, and Maghawry Shalaby. 2024. The Role of Data Availability in Supporting Development Processes in Arab Countries – Arab Development Report, 8th Edition, Chapter 1: Statistics, Data and Sustainable Development. Published by Arab Planning Institute and Institute of National Planning (Egypt). <https://www.arab-api.org/APIPublicationDetails.aspx?PublicationID=865>
 - Hala Abu Ali and **Shimaa Azab**. 2023. Climate Change and Sustainable Development in Arab Countries – Arab Development Report, 7th Edition, Chapter 3: Mitigation Policies and Energy Sector Reform. Published by Arab Planning Institute and Institute of National Planning (Egypt). <https://www.arab-api.org/APIPublicationDetails.aspx?PublicationID=834>
 - Farid Abdel Aal et al. 2024. The Role of Geographic Information Systems in Managing Urban Development in Egypt: A Case Study of the Northwestern Coast. Planning and Development Series, Issue No 351, Co-Authored research, Institute of National Planning (Egypt).
 - Khaled Attia et al. 2023. Sustainable Management of Electronic Waste in Egypt. Planning and Development Series, Issue No 349, Team work Research, Institute of National Planning (Egypt). (Co-Author)
 - Khashaba, M. & **Azab, S.** 2023. A Strategic View of Egypt's Climate Response Policies - In Light of Cop27 Outcomes. Governance for Sustainable Development Review. 2 (1). 16-41. <https://www.nigsd.gov.eg/library/nigsd-publications>.
- Hoda Al Nemr et al. 2018. Towards Improving Sustainable Production in the Egyptian Agricultural Sector. Planning and Development Series, Issue No 288, Co-Authored research, Team work Research, Institute of National Planning, Cairo, Egypt.
- Hoda Al Nemr et al. 2017. Ways and Mechanisms to Achieve Sustainable Consumption Patterns in Egypt", Development and Planning Series, Issue No 279, Co-Authored research, Institute of National Planning, Cairo, Egypt.
 - Nafisa Abu El-Saud et al. 2017. Integrated Solid Waste Management and Its Role in Supporting the National Economy. Planning and Development Series, Issue No 276, Issue No 288, Co-Authored research, Institute of National Planning (Egypt).

CONFERENCES AND WORKSHOPS

WORKSHOPS:

- **Nordic Africa Institute**, Science to Policy Communication Workshop, at the Institute of National Planning (INP), Cairo, Egypt, December 1-2, 2024.

- **Economic and Social Commission for Western Asia (ESCWA)**, "Measuring Progress in Development and Discussing How to Adapt ESCWA Indicators to the Egyptian Context" at the Institute of National Planning (INP), Cairo, Egypt, June 20-21, 2023.
- **The International Food Policy Research Institute (IFPRI)**, " Food prices, Poverty, and household Diets", Cairo, Egypt, May 22, 2023.
- **United Nations Human Settlements Programme**, "Application of the Degree of Urbanization Approach (DEGURBA", in Cooperation with Ministry of Planning and Economic Development – Egypt, 14-18 May 2023.
- **Institute of National Planning (INP)**, "Economic Modeling in Arab Countries", in cooperation with the Arab Planning Institute in Kuwait Cairo, Egypt, May 13-14, 2023.
- **International Labor Organization (ILO)**, Green building and construction: pathway towards inclusive growth and the creation of decent and green jobs, Italy, 2017.

CONFERENCES AND SCIENTIFIC ACTIVITIES:

- Participation in *The Second Introductory Event of Working Group II of the Intergovernmental Panel on Climate Change*, organized by United Nations Development Programme, Green Climate Fund and Ministry of Environment - Egypt, Cairo, Egypt, February 2, 2026.
- Participation in the conference “*Mechanisms for Reducing Emissions and Attracting Sustainable Investments in Light of the Carbon Border Adjustment Mechanism (CBAM)*”, organized by General Authority for Investment and Free Zones (Egypt), Ministry of Trade and Industry - Egypt and Environmental Compliance Office – Federation of Egyptian Industries, Cairo, Egypt, October 28, 2025.
- Participation in organizing the international scientific conference of Institute of National Planning “*Innovation and Sustainable Development*”, in cooperation with Columbia University School of International and Public Affairs (SIPA), Cairo, Egypt, June 24–25, 2025.
- Participation in organizing the international scientific conference of the Institute of National Planning “*Health and Sustainable Development*”, in cooperation with Columbia University School of International and Public Affairs and United States Agency for International Development, Institute of National Planning (Egypt), Cairo, Egypt, June 24–25, 2024.
- Participation in organizing the international scientific conference of the Institute of National Planning “*Governance and Sustainable Development*”, in cooperation with Columbia University School of International and Public Affairs and United States Agency for International Development, Cairo, Egypt, June 3–4, 2023.
- Participation in the discussion session “*Reference Frameworks of the Action Plan to Achieve the Third Goal of the National Climate Change Strategy (NCCS) 2050 – Improving Governance and Management in the Field of Climate Change*”, organized by Ministry of Environment - Egypt and Economic Governance Project (USAID), Cairo, Egypt, October 10, 2022.
- Participation in *Geomakani 2016 – Geospatial Technologies Conference*, organized by Edge-Pro Company, Cairo, Egypt, May 16–17, 2016.

- Participation in *The 4th International ASD Users Meeting in Middle East* and training on *Analytical Spectrum Devices (ASD) Spectroradiometer*, organized by National Authority for Remote Sensing and Space Sciences (NARSS), Cairo, Egypt, April 19–20, 2016.
- Participation in *Middle East Green Building Summit*, Cairo, Egypt, April 21–22, 2015.
- Participation in International Conference on Advanced Technology and Science (ICAT'14), Antalya, Turkey, 2014.

CONSULTANCIES:

- National Planning Institute (Egypt) and Supreme Council of Universities (Egypt) – Consultancy Service: Strategic Planning, Quality System Establishment, and Performance Monitoring & Evaluation (2024–2025).
Responsible for contributing to the development of ISO 45001:2018 international standard for Occupational Health and Safety (OH&S) management systems.
- UNFPA and Institute of National Planning, Investment case towards ending Unmet Needs for Family Planning in Egypt (2024), Scientific Coordinator. <https://egypt.unfpa.org/en/publications/investment-case-towards-ending-unmet-need-family-planning-egypt>.
- UNFPA and Institute of National Planning, Investment case towards ending Preventable Maternal Deaths in Egypt (2025), Research team Member. <https://egypt.unfpa.org/en/publications/investment-case-towards-ending-preventable-maternal-deaths-egypt>.
- African Development Bank and Institute of National Planning (Egypt), *Building the Capacity of the Egyptian Parliament Researchers – Training Packages: Decentralization, Social Inclusion and Sustainable Development* (2020), Scientific Coordinator.
- African Development Bank and Institute of National Planning (Egypt), *Building the Capacity of the Egyptian Parliament Members – Training Packages: Decentralization and Social Inclusion* (2019), Scientific Coordinator.

CURRENT PROJECTS:

- **The American University in Cairo and Institute of National Planning (Egypt), Research Project: “The Impact of Climate Change on the Health Conditions of Older Persons in Egypt”** (2025–to Date), *Research Team Member*.
- **Institute of National Planning, “Egypt Beyond 2025: Long-Term Development Vision”** (2024–to Date).
Role:
A Scientific Coordinator for the Environmental Pillar and Rapporteur of the Pollution Reduction and Waste Management Group within the Environmental Pillar.
- **Millennium Institute and Institute of National Planning: iSDG-Egypt Model** (2024– to Date).
Role:
 - Director of the Economic Governance Unit, responsible for developing the Integrated System Dynamics Model (iSDGs-Egypt Model) to measure and analyze the impact of various economic, social, and environmental sectors on the Sustainable Development Goals (SDG) indicators in the Arab

Republic of Egypt, as well as assessing the effects of public policies and alternative development scenarios on the achievement of the SDGs.

- Contributed to the development and calibration of the iSDG system dynamics model for Egypt, specifically focusing on Emissions, Building, Materials sectors dynamics.

TEACHING EXPERIENCE

Extensive teaching experience in Project Management and sustainable development–related courses for undergraduate and postgraduate students (Arabic and English programs) at Institute of National Planning (Egypt) and other academic and professional institutions, including the following:

- Construction Project Management
- Project and Program Management
- Feasibility Studies
- Engineering Economy
- Resource Management
- Properties and Strength of Materials (I)
- Properties and Strength of Materials (II)

SUPERVISION OF THESES AND APPLIED RESEARCH PROJECTS

Supervision and academic guidance of postgraduate theses and applied research projects in the fields of sustainable development, project management, climate policy, and socio-economic impacts, at Institute of National Planning (Egypt) and Cairo University.

ACADEMIC THESIS SUPERVISION:

- Scientific contribution in M.Sc. Thesis entitled “Modeling the Performance of Public Buildings Using System Dynamics and Multi-Criteria Decision-Making Methods”, Integrated Engineering Design Management Program, Faculty of Engineering, Cairo University, 2016.
- Scientific contribution in M.Sc. Thesis entitled “Analyzing Sustainability Behavior of Building Materials Using System Dynamics and Decision-Making Techniques”, Integrated Engineering Design Management Program, Faculty of Engineering, Cairo University, 2015.
- Master’s thesis in progress: The Role of Electricity Generation Companies in Expanding the Use of Renewable Energy, Institute of National Planning (Egypt).

APPLIED RESEARCH PROJECTS IN PROFESSIONAL MASTERS AND DIPLOMAS

- Main supervisor of applied research “*The Role of Construction and Demolition Waste Recycling in Enhancing Sustainable Development in Egypt: A Focus on Recycled Aggregates in Road Construction*”, Professional Master of Planning for Sustainable Development Planning, Institute of National Planning (Egypt), 2026. (In progress)
- Main supervisor of applied research “*The Role of Artificial Intelligence in Fabric Waste Recycling*”, Professional Master of Planning for Sustainable Development Planning, Institute of National Planning (Egypt), 2026. (In progress)

- Main supervisor of Research project “Agricultural Waste Between Value and Impact: *Towards a Green Economy and Sustainable Agriculture Using System Dynamics*” Diploma in Evidence-Informed Policy Making, North African Systems Analytics Center (NAASAC), 2026.
- Main supervisor of applied research “*The Role of Sustainable Building Materials in Achieving the Environmental and Economic Feasibility of Residential Buildings in Egypt*”, Professional Master of Planning for Sustainable Development Planning, Institute of National Planning (Egypt), 2025.
- Main supervisor of applied research “*The Role of Green Architecture in Achieving Building Sustainability in Egypt*”, Professional Master of Planning for Sustainable Development Planning, Institute of National Planning (Egypt), 2025.
- Main supervisor of applied research “*Analyzing and Measuring the Carbon Footprint of Egyptian Mosques: An Applied Study to Promote Environmental Sustainability*”, Professional Master of Planning for Sustainable Development Planning, Institute of National Planning (Egypt), 2025.
- Main supervisor of applied research “*Sustainable Energy Generation Using Gas Turbine: A Case Study of Dahshour Compressor Station*”, Professional Master of Planning for Sustainable Development Planning, Institute of National Planning (Egypt), 2024.

Membership in Selected Committees

- Head of the Internal Audit Team for the Comprehensive Quality Management System at Institute of National Planning (Egypt) (2024–to Date).
- Member of the Green Transformation and Sustainable Building Follow-up Team at Institute of National Planning (Egypt) (January 2026–to Date).
- Member of the committee for reviewing and updating the housing sector in the Sustainable Development Strategy of Egypt (Egypt Vision 2030), Ministry of Planning and Economic Development - Egypt.
- Member of the Monitoring and Evaluation Team for the Strategic Plan of Institute of National Planning (Egypt) (2023–2030), 2024.

TRAINING EXPERIENCE

PROFESSIONAL CERTIFICATIONS:

- **Certified Professional Trainer (CPT)**, International Board of Certified Trainers, Netherlands, 2022.
- **Associate Trainer (AT)**, International Board of Certified Trainers, Netherlands, 2021.

TRAINING COURSES:

Professional trainer specialized in designing and delivering advanced capacity-building programs in Project Management, Risk Management, Sustainable Development, International Quality Management Systems, and System Dynamics–based simulation modeling for governmental, academic, and professional institutions

COMPUTER SKILLS:

- Proficient in using STELLA and VENSIM programs for qualitative and quantitative Dynamic Simulation Models.

- Skilled in SPSS for statistical analysis, data management, and interpretation of socio-economic and environmental datasets.
- Experienced with ESRI GIS and ENVI software for spatial analysis, mapping, predictive modeling, and supporting optimal site selection and decision-making in geographic and environmental studies.
- Proficient in project management software such as MS Project and Primavera P6 for planning, scheduling, resource allocation, and monitoring of complex projects.
- Skilled in using AI-based tools for predictive modeling, data analytics, and scenario simulations in environmental and socio-economic research.

PERSON CHARACTERISTICS:

- Strong leadership, teamwork, and coordination skills in professional and research environments.
- Excellent communication and negotiation abilities.
- Fast learner with high efficiency, accuracy, and ability to work under pressure.
- Strong analytical thinking, creativity, innovation, and sound decision-making skills.