

**Maria P. Papadopoulou Ph. D.**  
**Professor NTUA**

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### 1. CURRENT POSITION

- **Professor** in “Planning and Management of Natural Environment”, School of Rural, Surveying and Geoinformatics Engineering, NATIONAL TECHNICAL UNIVERSITY OF ATHENS, Greece
- **Deputy Dean** at School of Rural, Surveying and Geoinformatics Engineering, NATIONAL TECHNICAL UNIVERSITY OF ATHENS, Greece
- **NATURAL ENVIRONMENT & CLIMATE CHANGE AGENCY (NECCA), President of Management Board**, MINISTRY OF ENERGY & ENVIRONMENT, Greece
- **Special National Committee on Climate Change Adaptation, Member** MINISTRY OF ENERGY & ENVIRONMENT, Greece
- **NATIONAL WATER COUNCIL, Member**, MINISTRY OF ENERGY & ENVIRONMENT, Greece

### 2. EDUCATION

**2002 Doctor of Philosophy Ph.D.** (GPA 3.80/4.0)

Dept. of Civil and Environmental Engineering, University of Vermont, USA

*Dissertation Title: “Enhanced Methodology for the Solution of Groundwater Management Problems”*

**1998 Diploma in Civil Engineering** (Grade: "Very Good")

Dept. of Civil Engineering, University of Patras GREECE

#### Awards

- **EUvsVirus Hackathon, 2020**
  - Sewers4COVID, 1<sup>st</sup> prize in OTHER Domain
- **Greek American Women’s Network, 2001,**
  - “ELENI PAPANIKOLAOU” Fellowship
- **University of Vermont, USA, 2001**
  - Award “BEST GRADUATE STUDENT” Dept. Civil and Environmental Engineering UVM

### 3. RESEARCH INTERESTS

- Climate change adaptation with emphasis in water ecosystems
- Groundwater ecosystem services
- Water-energy-food-ecosystems Nexus in terrestrial and marine environment
- Natural resources management
- Water footprint – Groundwater footprint
- Simulation and management of groundwater systems
- Environmental impact assessment

#### Indicative Research Projects

“**Early-warning geoinformation system for the support of health authorities in the decision-making process**”, Operational Program “Attiki 2014-2020” (Duration: 10/21-12/23, Budget 500.247,47€)

*(Principal Investigator)*

“**Climate resilient regions through systemic solutions and innovations — H2020 ARSINOE**” European Commission Grant Agreement No 101037424 (Duration: 10/2021-9/2025, Budget: €152.500€)

*(Principal Investigator - NECCA)*

“**Facilitating the next generation of effective and intelligent water-related policies utilising artificial intelligence and reinforcement learning to assess the water-energy-food-ecosystem (WEFE) Nexus – NEXOGENESIS**” H2020 European Commission (Duration: 9/2021-8/2025, Budget: €155.000€)

*(Principal Investigator)*

“**Textiles - We give a new life – Uptextile**”, GREEN FUND - Program Innovative Actions with Citizens 2021 (Duration: 07/21 -12/22 Budget: 5.040€)

*(Principal Investigator)*

“**Digital Geographical and Statistical Data of Hellenic Statistical Authority - Geospatial Database**” General Secretariat of Civil Protection (Duration: 11/2020-08/2021 Budget: 12.500€)

*(Principal Investigator)*

- “Tender for the Assessment of the Sectoral Water Demand in Malta & Gozo - Reference Number EWA/CFT/5/2018” Energy and Water Agency Maltese Government (Duration: 01/2019-06/2020 Budget: 40.500€)  
(Principal Investigator)
- “Sustainable Integrated Management FOR the NEXUS of water-land-food-energy-climate for a resource-efficient Europe - SIM4NEXUS”, H2020 European Commission Grant Agreement No 689150 SIM4NEXUS (Duration: 6/2016-5/2020, Budget: €80.000€)  
(Case Study Leader as member of UTH)
- “Adaptation to Climate change Impacts on the Mediterranean islands’ Agriculture, ADAPT2CLIMA”, European Commission, LIFE+, LIFE14 CCA/GR/000928, (Duration: 10/2015-9/2019, Budget: 90.000€)  
(Action Leader)
- “Evaluation and prioritization of erosion problems on the coast of Avlidas beach to Vathy of the Municipality of Chalkis and organization of the protection design” (Duration: 5/2017-2/ 2018, Budget: 20.000€)  
(Action Leader)

#### 4. TEACHING

2009 – today Professor, School of Rural, Surveying and Geoinformatics Engineering, National Technical University of Athens

##### Undergraduate courses:

- Physical Geography and Environment, 1<sup>st</sup> semester (compulsory)
- Natural Resources Management, 7<sup>th</sup> semester (elective)
- Environmental Impact Assessment, 8<sup>th</sup> semester (elective)
- Environmental Planning, 9<sup>th</sup> semester (project course)
- Environment and Development, Interdisciplinary course 8<sup>th</sup> semester

##### Graduate courses:

- o **National Technical University of Athens (NTUA)**
  - “Climate change and Spatial Governance”, URBAN & REGIONAL PLANNING Graduate Program
  - “Environmental Impact Assessment Methods and Techniques - Special Issues in Natural Resource Management”, GEOINFORMATICS Graduate Program
- o **Hellenic Open University (HOU)**
  - PSE51 - Design, Environmental Impact and Methods for their Assessment (2008-2017)
  - PSE50 - Introduction to the Natural and Man-Made Environment (2015-2016)
  - PSX50 - Sustainability and Environmental Assessment (2018-2019)

41 Diploma Thesis, NTUA

23 Master Thesis, NTUA and HOU

#### 5. PUBLICATIONS (Indicative List)

##### A. Books – Chapter in books – Special Scientific Publications (Editorial)

- Karatzas G.P. and M.P. Papadopoulou (2016), “Optimization of Environmental Systems”, DISIGMA Publications, ISBN: 978-960-9495-01-1 (in Greek)
- Papadopoulou M.P. (2015), “GENERAL CONCEPT OF ENVIRONMENTAL LAW: Environmental Licensing in Greece”, University Notes, Hellenic Open University (in Greek)
- Adam J.M., Camotim, D., Dunai, L., Marti, K., Nikolos, I.K., Pallarés, F.J., Papadopoulou, M.P., Saka, M.P., Schuëller, G.I., Vietor, T., Tsompanakis, Y., Topping, B.H.V. (2012), **Advances in Engineering Software (Elsevier)**, doi:10.1016/j.advengsoft.2011.08.007 (Editorial)
- Nikolos I.K., M. Stergiadi, M.P. Papadopoulou and G.P. Karatzas (2008), “Groundwater Numerical Modeling and Environmental Design using Artificial Neural Networks and Differential Evolution”, **LECTURE NOTES IN COMPUTER SCIENCE, Knowledge-based Intelligent Information and Engineering Systems**, I. Lovrek, R.J. Howlett, and L.C. Jain (Eds.): KES Zagreb, Croatia 2008, Part II, LNAI 5178, pp. 34–41, Publisher: Springer-Verlag Berlin Heidelberg.
- Karatzas G.P., M.P. Papadopoulou and K.P. Tsagarakis (2007), Special Issue **Desalination (Elsevier)** Vol. 237 pp. 1-125, (Editorial)
- Karatzas G.P., M.P. Papadopoulou and K.P. Tsagarakis Eds (2007) “Water Resources Management: New Approaches and Technologies”, pp. 398, ISBN 978-960-8475-09-0.

##### B. Peer-reviewed Journals

- Tzoraki O. and M.P. Papadopoulou (2021), “Ecological risk assessment of heavy metals in the river sediment of Evrotas’ mountainous streams, Greece”, **Fresenius Environmental Bulletin** (in press)
- Fernandez-Anez N., A. Krasovskiy, M. Müller et al., (2021), *Current Wildland Fire Patterns and Challenges in Europe: A Synthesis of National Perspectives*, **Air Soil and Water Research**, Vol. 14, <https://doi.org/10.1177/11786221211028185>
- Ntaliou L, Koliotsis P-T, Papadopoulos D, Sanidas E, Velliou M, Papadopoulou M.P., Barbetseas J (2021) “The impact of environmental factors on blood pressure”, **Arterial Hypertension**, Vol. 30, pp. 72-76. (in greek)

- Chowdhury S., Omar K.M. Ouda and **M.P. Papadopoulou** (2020), "Meat and Egg Production in Saudi Arabia: an Analysis on Virtual Water Content for Livestock Farming", *International Journal of Water Resources and Arid Environments*, 9(1), pp. 94-106.
- Papadopoulou M.P.**, D. Charchousi K. Spanoudaki, A. Karali, K. Varotsos, C. Giannakopoulos, M. Markou and M. Loizidou (2020) "Agricultural water vulnerability under climate change conditions in Cyprus", *Atmosphere*, Vol. 11, No. 990, <https://doi.org/10.3390/atmos11090990>
- Koliotsis P. TS. & **M.P. Papadopoulou**, (2020) "Spatial Analysis of Urban Greenspace Accessibility at the City Level", *European Journal of Environmental Sciences*, Vol. 10, No.1, pp.15-21 <https://doi.org/10.14712/23361964.2020.3>
- Laspidou, C., N. Mellios N., A. Spyropoulou, D. Kofinas, **M.P. Papadopoulou** (2020), "Systems thinking on the resource nexus: Modeling and visualisation tools to identify critical interlinkages for resilient and sustainable societies and institutions" *Science of Total Environment*, Vol. 717, 137264, <https://doi.org/10.1016/j.scitotenv.2020.137264>
- Papadopoulou C.A, **M.P. Papadopoulou**, C. Laspidou, S. Munaretto & F. Brouwer (2020), "Towards a Low-Carbon Economy: A Nexus-Oriented Policy Coherence Analysis in Greece", *Sustainability*, Vol. 12, Issue 1, <https://doi.org/10.3390/su12010373>
- Matiatos I., E. Varouchakis & **M.P. Papadopoulou** (2019), "Performance evaluation of multiple numerical models and a geostatistical surrogate model simulating groundwater flow and nitrate mass transport", *Environmental Modeling and Assessment*, <https://doi.org/10.1007/s10666-019-9653-7>
- Chowdhury S., F. Kabir, I. Chowdhury & **M.P. Papadopoulou** (2019), "Importing and Exporting Agricultural Crop Products: An Assessment of Virtual Water Flow (VWF) in Saudi Arabia Arabian", *Arabian Journal for Science and Engineering*, <https://doi.org/10.1007/s13369-018-3627-y>.
- Charchousi D., **M.P. Papadopoulou**, K. Spanoudaki, D. Alexakis, C. Giannakopoulos and A. Karali (2017), "Assessing the vulnerability of agriculture to climate change: The case of Cyprus", *European Water*, Vol. 59, pp. 351-356
- Papadopoulou M.P.**, Charchousi D., V.K. Tsoukala, Ch. Giannakopoulos and M. Petrakis (2016), "Water footprint assessment considering climate change effects on future agricultural production in Mediterranean region", *Desalination and Water Treatment*, Vol. 57, Issue 5, pp. 2232-2242.
- Papadopoulou M.P.** and C. Antoniou (2014), "Environmental Impact Assessment Methodological Framework for Liquefied Natural Gas terminal and Transport Network Planning" (2014), *Energy Policy*, Vol. 68, pp. 306-319.
- Stathathou P.-M.G., V.K. Tsoukala, **M.P. Papadopoulou**, A. Stamou, N. Spiliotopoulou, C. Theoxari and S. Papagrigoriou (2012), "An Environmental Approach for the Management and Protection of Heavily Irrigated Regions", *GLOBAL NEST Journal*, Vol. 14, No. 3, pp. 276-283.
- Papadopoulou M.P.** (2011), "Optimization Approaches for the Optimal Control of Seawater Intrusion and its Environmental Impacts in Coastal Environment", *Pacific Journal of Optimization*, Vol.7, No. 3, pp. 479-502.
- Papadopoulou M.P.**, E.A. Varouchakis and G.P. Karatzas (2009), "Simulation of Complex Aquifer Behavior using Numerical and Geostatistical Methodologies", *Desalination*, doi:10.1016/j.desal.2007.12.021, Vol. 237, pg. 42-53.
- Koukadaki, M.A., G.P. Karatzas, **M.P. Papadopoulou**, and A. Vafidis (2007), "Identification of the Saline Zone in a Coastal Aquifer using Electrical Tomography Data and Simulation", *Water Resources Management*, doi: 10.1007/s11269-006-9135-y Vol. 21, No 11, pp. 1881-1898.
- Karterakis S., G.P. Karatzas, I.K. Nikolos and **M.P. Papadopoulou** (2007), "Application of Linear Programming and Differential Evolutionary Optimization Methodologies for the Solution of Coastal Subsurface Water Management Problems Subject to Environmental Criteria", *Journal of Hydrology*, 10.1016/j.jhydrol.2007.05.027, Vol. 342/3-4, pp 270-282.
- Papadopoulou M.P.**, G.F. Pinder and G.P. Karatzas (2007), "Flexible Time-Varying Optimization Methodology for the Solution of Groundwater Management Problems", *European Journal of Operational Research*, doi: 10.1016/j.ejor.2006.02.041, Vol. 180, No. 2, pg. 770-785.
- Papadopoulou M.P.**, G.P. Karatzas and G.G. Bougioukou (2007), "Numerical Modeling of the Environmental Impact of Landfill Leachate Leakage on Groundwater Quality - A Field Application", *Environmental Modeling & Assessment*, doi: 10.1007/s10666-006-9050-x Vol. 12, No. 1, pg. 43-54.
- Papadopoulou M.P.**, G.F. Pinder and G.P. Karatzas (2003), "Enhancement of the Outer Approximation Method for the Solution of Concentration-Constrained Groundwater-Remediation Optimal-Design Problems", *Water Resources Research*, doi: 10.1029/2002 WR001541, Vol. 39, No. 7, 1185.

### **C. Proceeding in International Conferences**

- Leka A., D. Charchousi and **M.P. Papadopoulou** (2021) "Developing a framework for local climate change adaptation plan: The case of Mandra-Attiki, Greece" *E-proceedings 17<sup>th</sup> International Conference on Environmental Science and Technology*, Athens Greece
- Papadopoulou M.P.** and A. Vlachou (2021) "Investigating the water, energy, marine land uses, food, climate interlinkages in marine environment", *E-proceedings 17<sup>th</sup> International Conference on Environmental Science and Technology*, Athens Greece
- Charchousi D. & **M.P. Papadopoulou**, (2021) "A matrix approach to rank Groundwater Dependent Ecosystems Services based on land uses", *6<sup>th</sup> IAHR Europe Congress*, June 30<sup>th</sup> – July 2<sup>nd</sup>, 2020, Warsaw, Poland
- Potamianou N., C.-A. Papadopoulou and **M.P. Papadopoulou** (2019), "Sustainable Development Goals (SDGs) and Indicators: Managing Drylands", *E-proceedings 16<sup>th</sup> International Conference on Environmental Science and Technology*, Rhodes Greece.

- Charchousi D. and **M.P. Papadopoulou** (2019), “*Water Availability: A factor of sustainability and adaptation of agriculture to climate change*”, *E-proceedings 16<sup>th</sup> International Conference on Environmental Science and Technology*, Rhodes Greece.
- Charchousi D. and **M.P. Papadopoulou** (2019), “*An Uncertainty Analysis approach for ecosystem sustainability based on Groundwater Footprint*”, **38<sup>th</sup> IAHR Conference**, Panama City, Panama.
- Lapidou C., N.K. Mellios, D.T. Kofinas, A.E. Ioannou, A.E. Spyropoulou, **M.P. Papadopoulou**, C.-A. Papadopoulou (2019), “A System Dynamics Model for the Water-Energy-Food-Land Use-Climate Nexus: The Greek Case Study”, **38<sup>th</sup> IAHR Conference**, Panama City, Panama.
- Papadopoulou M.P.**, E. Chalepli, A.-C. Papadopoulou, A. Lekka, N. Mellios and C. Lapidou (2019) “*Assessing Climate Change impacts of Greek energy mix based on LCA*” **E-proceedings of 2<sup>nd</sup> International Conference ADAPTtoCLIMATE**, Hersonissos, GREECE.
- Charchousi D., **M.P. Papadopoulou**, C. Papadaskalopoulou, A. Karali, C. Gianakopoulos and M. Loizidou (2019) “*Assessing climate change impacts on drought severity in Mediterranean islands using the Standardized Precipitation Evapotranspiration Index (SPEI)*” **E-proceedings of 2<sup>nd</sup> International Conference ADAPTtoCLIMATE**, Hersonissos, GREECE.
- Sifounakis O., **M.P. Papadopoulou**, E. Haas (2019), “*Assessment of Greenhouse Gas Emission and nitrate leaching inventory from agricultural lands in the region of Thessaly (Greece) using the LandscapeDNDC model*”, **EGU General Assembly**, Vienna, AUSTRIA
- Charchousi D., **M.P. Papadopoulou** and A. Nanou-Giannarou (2018), “*Groundwater Footprint: A Tool for Ecological-Based Groundwater Resources Management Assessment*” **Earth and Space Science Open Archive**, doi: 10.1002/essoar.10500228.1, Washington D.C., USA
- Munaretto S., M. Whitmer, F. Brower, C.S. Lapidou, P. Koundouri, T. Avellan and **M.P. Papadopoulou** (2018), “*The nexus approach and policy coherence as its governance pillar. Conceptual and methodological developments and empirical evidence from the European water-land-energy-food-climate policy nexus*”, **International Conference Water Science**, Wageningen, The Netherlands.
- Skiada M. and **M.P. Papadopoulou** (2015), “*Development of Methodology to Prioritize Adaptation Measures to Climate Change in the Transport Sector*”, *E-proceedings 14<sup>th</sup> International Conference on Environmental Science and Technology*, Rhodes Greece.

## **6. INTERNATIONAL RECOGNITION**

### **Invited Speaker**

- American Institution of Mathematics**, Optimization Workshop: “*Derivative-Free Hybrid Optimization Methods for Solving Simulation-Based Problems in Hydrology*”, Palo Alto CA USA, 6-10 October 2008.
- Hellenic Center of Ecological Research**, “*Water Scarcity*”, Athens 22 Mars 2009
- Ministry of Water and Irrigation, Jordan** WorkShop “*Water Resources Prospects and Needs*”, Amman Jordan. April 22<sup>nd</sup>, 2013.
- NGO IOANNIS KAPODISTRIAS**, 2nd Summer School for Young Researchers: “*Environment and Sustainable Development: RES policy in Mediterranean*”, Spetses 24-28 July 2013.
- Friedrich Naumann Stiftung für die Freiheit - NGO IOANNIS KAPODISTRIAS**, 3<sup>rd</sup> Summer School: “*Sustainable development, and Fiscal crisis: Participatory Approach as a tool to development process*”, Lesvos 23-27 July 2014.
- Hellenic Ministry of Tourism, ROUND TABLE ON SUSTAINABLE TOURISM AND CULTURE, Adriatic and Ionian Initiative Chairmanship of the Hellenic Republic**, Athens, Greece 3/2017  
*Perspectives for the development of the Tourist Sector - SIM4NEXUS: Towards a Sustainable Economy and an Effective Use of Resource*
- Center for Water Systems Seminar Series 2018/19, University of Exeter**, Exeter, UK Greece 11/2018  
*Sustainable Integrated Management for the Nexus of Water-Land-Food-Energy-Climate for a Resource Efficient Europe: The SIM4NEXUS project*
- 5<sup>th</sup> Sustainability Summit – ECONOMIST**, Athens 10/2021

### **Independent Evaluator**

#### University of Vermont - Faculty Promotion

- Department of Mathematics: Munghen Yu, Associate Professor, (2002)
- Dept. of Mechanical Engineering: Hitt Darren, Associate Professor, (2006)

#### University of Massachusetts, Boston - Faculty Promotion

- Dept. of Mathematics: Karen Ricciardi, Assistant Professor (2010)

#### Technical University of Crete, Basic Research Program (2011) – Proposal Evaluator

#### European Commission,

- FP7 “ENVIRONMENT” - Proposal Evaluator – Rapporteur (2012)
- H2020 WATER-5c-2015 “Development of water supply and sanitation technology, systems and tools, and/or methodologies” Proposal Evaluator – Rapporteur (2015)
- H2020 CIRC-02-2017 “Water in the context of the circular economy” Proposal Evaluator – Rapporteur (2017)

#### General Secretariat for Research and Technology

- ESPA "Support for enterprises employing highly scientific training" – Project Evaluator (2013 – today)  
General Secretariat for Lifelong Learning – Greek Ministry of Education,  
 Academic Textbooks Electronics and Accessories - Callippus Proposal Evaluator (2014)  
Greek National Foundation  
 Postdoctoral research or doctoral dissertation in countries of the Financial Mechanism of the European Economic Area (EEA) in the subject "Marine and water resources" (2015)  
 Scholarship Granting Program in the Framework of Action 10.2.2.03.01 entitled "Aid for the human research through the implementation of teaching (RESEARCH 2016)"  
 Scholarship program for postgraduate studies of the second cycle of studies (PhD level)", NSRF 2014-2020 (2017)  
German Aerospace Agency (DLR),  
 ○ "ERANETMED" on ENERGY/WATER/NEXUS Energy-Water, (2015)  
 ○ "ERANETMED 2" on Environmental challenges and solutions for vulnerable communities, (2016)
  - "Land &Water/ Food" and Environment (Call identifier RQ1-2016)
  - "Energy and Environment (Call identifier RQ2-2016)
  - "Climate/demographic change" and Environment (Call identifier RQ3-2016)
  - "Societies/Ecosystems" and Environment (Call identifier RQ4-2016)
 ○ "ERANETMED 3" on Fostering sustainable water management for the economic growth and sustainability of the Mediterranean region, (2017)  
Research Foundation of Cyprus  
 ○ "CULTURE/STUDY/2017" – Independent Evaluator (2017)  
PRIMA Section 1 – Management of Water 2020 IA  
 ○ Topic 1.1.1: Implementing sustainable, integrated management of water resources in the Mediterranean, under climate change conditions

**Citations** (as of 31/03/2021)

650 citations (Google Scholar: h-index=12)  
 375 citations (Scopus: h-index= 9)

**7. SCIENTIFIC ACTIVITIES**

**Member of Editorial Board**

- Journal of Computational Environmental Sciences 2013 –

**Guest Editor**

- Desalination – ELSEVIER 2009-
- Journal of Environmental Management – ELSEVIER 2018-
- Sustainability – MDPI 2020-

**Critical Reviewer 2 scientific books**

**Reviewer in 30 peer-reviewer journals and 15 international and national conference proceedings**