

VASILIKI CHALASTANI

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ACADEMIC BACKGROUND

NATIONAL TECHNICAL UNIVERSITY OF ATHENS (NTUA), Athens, Greece

Mar 2018 – Dec 2022

(exp)

PhD Candidate

▪ **Optimisation Approaches for Marine Spatial Planning**

Three-members advisory committee:

V.K. Tsoukala (National Technical University of Athens) – Supervisor

C.M. Duarte (King Abdullah University of Science and Technology)

H. Coccossis (University of Thessaly)

- Investigating the current practices of MSP and identifying the optimal ones to address the conservation – development nexus.
- Incorporating climate change in the MSP process.
- Assessing the evolution of European national marine spatial plans as per the MSP EU Directive.
- Developing novel optimisation tools for MSP focusing on seaports and conservation.

ÉCOLE POLYTECHNIQUE, Paris, France

Sep 2016- Sep 2017

M2 Specialty (MSc) Water Air Pollution and Energy at local and regional scales (WAPE)

(modules: 6 months, internship: 6 months)

- Gaining in-depth understanding and knowledge of the laws and interactions governing the evolution of our natural environment, with a particular focus on the dynamical, physical and biochemical processes driving ocean and water cycle at local and regional scales.
- Familiarising with oceanographic modelling and forecasting methods to predict impacts of climate change.
- **Courses of interest:** Oceanic Circulation, Coastal Hydrodynamics, Hydro Wind and Marine Resources for Renewable Energies, Climate Energetics, Biogeochemical Cycles, Sea State Coastal Waves and Morphodynamics, Economy of the Energy Sector.
- **Master thesis:** “*Contribution to the Ocean’s Solutions Initiative and Analysis of the Artificial Ocean Alkalinisation Method*” (Grade 16/20): Assessing the cost-effectiveness of the marine based solutions to tackle climate change and analysing AOA by creating time-series and global maps following the results of NEMO-PISCES biogeochemical model.

NATIONAL TECHNICAL UNIVERSITY OF ATHENS (NTUA), Athens, Greece

Sep 2009 – Mar 2016

Diploma in Civil Engineering (Option Flow:Structural) – 5 year curriculum: B.Sc and MEng equivalent (300 ECTS)

▪ **GPA:** 7.26/10

▪ **Diploma thesis:** Design of an artificial surfing reef (ASR) in Marathon Bay, Attica (10/10)

This reef’s main purposes are to create a surfing reef break for a broad range of surfing activity, to stabilise the shoreline and to provide a suitable habitat for marine life.

▪ **Courses of interest:** Fluid Mechanics, Environmental Technology, Maritime Hydraulics and Harbour Engineering, Environmental Impact Analysis, Ecology and Environmental Chemistry, Systems Optimisation, Project Management.

PROFESSIONAL EXPERIENCE

Civil Engineer, Athens, Greece

Mar 2021- Present

Freelancer

- Civil Engineering Consulting with a focus on the environmental assessment of marine and coastal structures, as well as marine spatial planning.

Greek Ministry of Maritime Affairs and Insular Policy, Piraeus, Greece

Oct 2018- Jul 2019

Special Advisor of the Alternate Minister of Maritime Affairs and Insular Policy

- Working closely with the Minister to provide guidance on topics of marine policy, coastal engineering and sustainable development.
- Being entirely responsible for the Minister’s portfolios regarding aquaculture, harbour and coastal infrastructure with a particular focus on their technical feasibility, environmental licencing and compliance with MSDF, HD and BD, the guidelines of DG ENV and DG TREN, SDGs as well as the respective national legal regime.
- Participating in various committees on behalf of the Minister, including those for the national transport plan, the national marine spatial plans

and the renewal of the national legal framework for the categorisation of seaports with respect to the Decision No 1346/2001/EC as regards seaports, inland ports and intermodal terminals.

Beacon Development Company (BDC), KAUST, Saudi Arabia

Apr 2018- Dec 2018

External Consultant – The Red Sea Project

- Introducing a preliminary marine spatial plan and zoning scheme for the Red Sea Project in partnership with KAUST, NTUA, BDC and the Red Sea Development Company.
- Optimising development elements' spatial allocation through multiple conservation scenarios developed with Marxan software.
- Technical writing of scientific reports to be submitted to the Public Investment Fund (PIF) of the Kingdom of Saudi Arabia.

Institute for Sustainable Development and International Relations (IDDRI), Paris, France

Sep 2017- Jun 2018

External Researcher – Global Adaptation Tracker Project – Supervisor : A.K. Magnan

- Assessing the scope and use of indicators, metrics and proxies developed to track progress on climate change adaptation.
- Reviewing the indicators and methods used in literature.
- Analysing the context of indicators to track climate change adaptation provided by NDCs, NAPs, UNFCCC, IPCC and SDGs.
- Proposing a methodological framework for developing indicators in a global scale, suited to reduce vulnerability and increase resilience, rather than addressing country-level needs.

École Normale Supérieure, Department of Geosciences, Paris, France

May 2017- Jul 2017

Intern, Full Time- Supervisor : L.Bopp

- Studying in depth Artificial Ocean Alkalinisation (AOA), as a geoengineering approach for mitigating CO₂ emissions.
- Analysing the maximum carbon dioxide removal (CDR) potential while distributing the products of olivine dissolution uniformly in the global ocean surface, examining the spatial concentrations of alkalinity and predicted the best sites for the implementation of the technique.
- Performing simulations based on RCP scenarios to examine the method's potential to tackle climate change.

Laboratoire Océanographique de Villefranche, Villefranche-sur-mer, France

Mar 2017- Apr 2017

Intern, Full Time- Supervisor : J.P.Gattuso

- Contributing to "The Ocean's Solution Initiative" (<https://bit.ly/3DPLmWI>), a thorough analysis of the solutions proposed to confront the drivers, as well as the impacts, of climate change in marine environments, undertaken by fifteen researchers worldwide.
- Assessing the cost-effectiveness of the solutions via the systematic review of an exhaustive list of scientific articles. Drafted the relevant parts of the scientific publication (<https://bit.ly/3fxXQD9>).
- Examining the spatial scale of the solutions' implementation to assess their feasibility.

PROJECTS

▪ ARSINOE

Jun 2022 – Present

Horizon Project (GA no-101037424) PI: C.Laspidou, Prof., UTH

Description of the Project

ARSINOE is an EU-funded project aimed at creating climate resilient-regions through systemic solutions and innovations. ARSINOE will shape the pathways to resilience by bringing together the Systems Innovation Approach (SIA) and the Climate Innovation Window (CIW) to build an ecosystem for climate change adaptation solutions.

Role on the Project

- Working on one of the nine demonstrators of the project, the case study of the Mediterranean Ports (Piraeus, Limassol, Valencia), aiming to develop a vulnerability assessment for each port and design targeted adaptation pathways.

▪ Scientific Support of the National Chamber of Engineers in Developing the Town-Planning Scheme of the Area of Mati, Greece

Mar 2022 – May 2022

PI: K.Serraos, Prof., NTUA

Description of the Project

The objective of the project is provide scientific support for the development of the town-planning scheme of the Mati area, Attica, Greece, hit by fires in 2018.

Role on the Project

- Working on the development of an ecosystem-based approach for the coastal area of Mati to incorporate NBSs in the design process and improve resilience.

▪ Integrated Coastal Zone Management for the Municipality of Thiva, Greece

Jun 2021 – Aug 2021

PI: V.Tsoukala, Prof., NTUA

Description of the Project

The overall objective of the project is to conduct an ICZM for the coastal area of the Municipality of Thiva, Greece. The objective is achieved through detailed mapping of the existing conditions and the human activities, vulnerability assessment of the area, stakeholders' engagement throughout the process as well as the proposal of adaptation pathways to confront the impacts of climate change.

Role on the Project

- Participating in Stage A ‘Data collection’ and Stage B ‘Vulnerability assessment’

▪ **MSPMED: Towards the operational implementation of MSP in our common Mediterranean Sea**

Mar 2021 – Nov 2021

European co-funded project, PI: H.Coccossis, Prof. Emeritus, UTH

Description of the Project

The overall objective of the MSP-MED project is to favour the Maritime Spatial Planning process in the Mediterranean Sea, by supporting the establishment of coherent and coordinated plans across the Mediterranean marine regions and between Member States, in line with the MSP Directive objectives. The MSP Competent Authorities of France, Greece, Italy, Malta, Slovenia, Spain, participate directly or endorsed relevant national institutions for participating in the project and are involved in its development.

Role on the Project

- Participating in WP3 ‘Data use and sharing’ and WP4 ‘Cooperation among Member States and with third countries’.

▪ **Global Adaptation Mapping Initiative (GAMI)** [<https://bit.ly/2C1koNT>]

Sep 2019 – Sep 2022

Description of the Project

GAMI is a collective global effort, led by *Prof. Berrang-Ford*, to systematically gather and synthesize literature on climate change adaptation. GAMI is in the process of reviewing thousands of peer-reviewed articles in order to develop the first systematic global assessment of empirical evidence on adaptation progress. This initiative was developed to provide synthesis results to inform the ongoing Intergovernmental Panel on Climate Change (IPCC) 6th Assessment Report (AR6), seeking to answer the question: Are we adapting?

Role on the Project

- Reviewing and coding more than 100 scientific papers relevant to climate change adaptation for the thematic domains entitled ‘Europe’ and ‘Ocean and Coastal Ecosystems’.
- Being selected to synthesise the results of the coding process relevant to the ‘Europe’ thematic domain to form a first scientific publication and inform IPCC AR6.

▪ **Marine Spatial Planning for the Red Sea Project** [<https://bit.ly/2UJ1PEO>]

Sep 2018 – Aug 2019

Description of the Project

The Red Sea Project (TRSP; <https://bit.ly/3e5KehW>) is a development that extends over 28,000 km² along the shores of the Red Sea that will progress to become a sustainable luxury tourism destination on the west coast of the Kingdom of Saudi Arabia. The destination incorporates the Al Wajh lagoon that includes 92 islands with valuable habitats (coral reefs, seagrass, and mangroves) and species of global conservation importance. The Red Sea Development Company (TRSDC), responsible for the execution of TRSP, has committed to achieve a net-positive impact on biodiversity while developing the site for sustainable tourism. After careful optimization of the development plans to avoid impacts, marine spatial planning was applied to optimize the conservation of the Al Wajh lagoon in the presence of development. A three-layer conservation zoning was developed along with additional actions to remove existing pressures and generate net positive conservation outcomes.

Role on the Project

- Leading the entire MSP initiative conceptualised by Prof. Carlos M. Duarte.
- Organising a ‘war-game’ workshop held in London in 2018 comprising various stakeholders, to simulate the MSP process, indicate conflicts and improve synergies among human uses and conservation elements.
- Developing multiple conservation scenarios with Marxan software. - Proposing a zoning scheme to enhance conservation and minimise development footprint.

▪ **The Oceans Solutions Initiative** [<https://bit.ly/3r83gww>]; [<https://bit.ly/2XXsVdk>]

Mar 2017 – Jul 2018

Description of the Project

The Ocean Solutions Initiative was led by Jean-Pierre Gattuso, coordinated by the Monegasque Association on Ocean Acidification and supported by the Prince Albert II of Monaco Foundation, the Veolia Foundation, the Ocean Acidification International Coordination Centre and the French Facility for Global Environment. The project was launched to assess the potential of ocean-based measures to reduce changes in three major climate-related drivers (ocean warming, ocean acidification, and sea-level rise) both globally and/or locally, as well as to reduce adverse impacts on vital climate-sensitive ecosystems (coral reefs, mangroves and salt marshes, seagrass beds, and Arctic biota) and ecosystem services (fin fisheries, fish aquaculture, coastal protection, and bivalve fisheries and aquaculture).

Role on the Project

- Assessing the proposed measures’ cost-effectiveness through an exhaustive bibliographic database.
- Examining the potential of Artificial Ocean Alkalinisation (AOA) through biogeochemical modelling and quantitative analysis.
- Participating in two collaborative workshops held in Monaco and Potsdam in 2017 to review the results.

PUBLICATIONS

Journals

- **Chalastani V.I.**, Coccossis H., Tsoukala V.K. and Duarte C.M., 2021. A Bibliometric Assessment of Progress in Marine Spatial Planning. *Marine Policy* 127:104329. doi: 10.1016/j.marpol.2020.104329.
- **Chalastani V.I.**, Manetos P., Al-Suwailem A.M., Hale J.A., Vijayan A.P., Pagano J., Williamson I., Henshaw S.D., Albaset R., Butt F., Brainard R., Coccossis H., Tsoukala V.K. and Duarte C.M., 2020. Reconciling Tourism Development and Conservation Outcomes Through Marine Spatial Planning for a Saudi Giga-Project in the Red Sea (The Red Sea Project, Vision 2030). *Frontiers in Marine Science* 7:168. doi: 10.3389/fmars.2020.00168. [[link](#)]

- Cziesielski M.J., Duarte C.M., Aalismai N.A., Al-Hafedh Y., Anton A., Baalkhuyur F., Baker A.C., Balke T., Baums I.B., Berumen M.L., **Chalastani V.I.**, Cornwell B., Daffonchio D., Diele K., Ehtsaam F., Gattuso J.P., He S., Lovelock C., Mcleod E., Macreadie P.I., Marba N., Martin C., Barreto M.M., Krishnakumar P.K., Prihartato P., Rabaoui L., Saderne V., Schmidt-Roach S., Suggett D., Sweet M., Statton J., Teicher S., Trevathan-Tackett S.M., Joydas T.V., Yahya R.Z., Aranda M., 2021. Investing in Blue Natural Capital to secure a future for the Red Sea ecosystems. *Frontiers in Marine Science* 7:1183. doi: 10.3389/fmars.2020.603722. [\[link\]](#)
- Ulibarri N., Ajibade I., Galappaththi E., Joe E., Lesnikowski A., Mach K., Musah-Surugu I., Nagle Alverio G., Segnon A., Siders A.R., Sotnik G., Campbell D., **Chalastani V.**, Jagannathan K., Khavhagali V., Reckien D., Shang Y., Singh C., Zommers Z., 2022. A global assessment of policy tools to support climate adaptation. *Climate Policy*. 22. 77-96. doi: 10.1080/14693062.2021.2002251.
- Thomas A., Theokritoff E., Lesnikowski A., Reckien D., Jagannathan K., Cremades R., Campbell D., Tom Joe E., Sitati A., Singh C., Segnon A., Pentz B, Musah-Surugu J., Mullin C., Mach K., Gichuki L., Galappaththi E., **Chalastani V.**, Ajibade I., Ruiz-Diaz R., Grady C., Garshagen M., Ford J., Bowen K., 2021. Global evidence of limits and constraints to human adaptation. *Regional Environmental Change*. 21. doi: 10.1007/s10113-021-01808-9.
- Berrang-Ford, Siders, Lesnikowski, Fischer, Callaghan, Haddaway, Mach, Araos, Shah, Wannewitz, Doshi, Leiter, Matavel, Musah-Surugu, Wong-Parodi, Antwi-Agyei, Ajibade, Chauhan, Kakenmaster, Grady, **Chalastani**, Jagannathan, Galappaththi, Sitati, Scarpa, Totin, Davis, Hamilton, Kirchhoff, Kumar, Pentz, Simpson, Theokritoff, Deryng, Reckien, Zavaleta-Cortijo, Ulibarri, Segnon, Khavhagali, Shang, Zvobgo, Zommers, Xu, Williams, Villaverde Canosa, van Maanen, van Bavel, van Aalst, Turek-, ankings, Trivedi, Trisos, Thomas, Thakur, Templeman, Stringer, Sotnik, Sjostrom, Singh, Siña, Shukla, Sardans, Salubi, Safae Chalkasra, Ruiz-Díaz, Richards, Pokharel, Petzold, Penuelas, Pelaez Avila, Pazmino Murillo, Ouni, Niemann, Nielsen, New, Nayna Schwerdtle, Nagle Alverio, Mullin, Mullenite, Mosurska, Morecroft, Minx, Maskell, Marshall Nunbogu, Magnan, Lwasa, Lukas-Sithole, Lissner, Lilford, Koller, Jurjonas, Joe, Huynh, Hill, Hernandez, Hedge, Hawxwell, Harper, Harden, Haasnoot, Gilmore, Gichuki, Gatt, Garschagen, Ford, Forbes, Farrell, Enquist, Elliott, Duncan, Coughlan de Perez, Coggins, Chen, Campbell, Browne, Bowen, Biesbroek, Bhatt, Bezner Kerr, Barr, Baker, Austin, Arotoma-Rojas, Anderson, Ajaz, Agrawal, Abu, 2021. Mapping evidence of human adaptation to climate change. *Nature Climate Change* 11(11). doi: 11. 10.1038/s41558-021-01170-y.
- Gattuso J.-P., Magnan A.K., Bopp L., Cheung W.W.L., Duarte C.M., Hinkel J., MclLeod E., Micheli F., Oschlies A., Williamson P., Billé R., **Chalastani V.I.**, Gates R.D., Irissou J.-O., Middelburg J.J., Pörtner H.-O. & Rau G.H., 2018. Ocean solutions to address climate change and its effects on marine ecosystems. *Frontiers in Marine Science* 5:337. doi: 10.3389/fmars.2018.00337 [\[link\]](#)

Other Publications

- Tsoukala V., Chondros M., Metallinos A., Malliouri D., Martzikos N., Papadimitriou A., **Chalastani V.**, Tsaimou C., Afentoulis V., Memos, C., 2021. Κλιματική αλλαγή: Μεθοδολογία έγκαιρης πρόβλεψης και προειδοποίησης παράκτιων πλημμυρών (CLIMPACT NEWSLETTER #7).
- **Chalastani V.I.**, Tsoukala V.K., Coccossis H., Duarte C.M., 2020. Bibliometric assessment of marine spatial planning publications (2003-2019) [Data set], Zenodo. doi: 10.5281/zenodo.4302354.
- Knowlton, N., Di Lorenzo, E., Micheli, F., Field, C.B., eds., 2020. Successes at the Interface of Ocean, Climate and Humans. Lausanne: Frontiers Media SA. doi: 10.3389/978-2-88966-302-6 [\[First article of the e-book\]](#); pp.5-22]
- Magnan A.K., Billé R., Bopp L., **Chalastani V.I.**, Cheung W.W.L., Duarte C.M., Gates R.D., Hinkel J., Irissou J.-O., MclLeod E., Micheli F., Middelburg J.J., Oschlies A., Pörtner H.-O., Rau G.H., Williamson P., Gattuso J.-P, 2020. Ocean-based measures for climate action. *IDDRI Policy Brief*. [\[link\]](#)
- Magnan A.K. and **Chalastani V.I.**, 2019. Towards a Global Adaptation Progress Tracker: first thoughts. *IDDRI Policy Brief*. doi:10.13140/RG.2.2.32669.46569. [\[link\]](#)

International Conferences

- **Chalastani V.**, Pantelidis, A., Tsaimou C., & Tsoukala V., September 2022. Development of a Complex Vulnerability Index for Fishing Shelters – The Case of Cyprus. *7th IAHR Europe Congress*. Athens, Greece.
- Tsaimou C., Kagkelis G., Papadimitriou A., **Chalastani V.**, Sartampakos P., Chondros M., & Tsoukala V., September 2022. Advanced Multi-Area Approach for Coastal Vulnerability Assessment. *7th IAHR Europe Congress*. Athens, Greece.
- Tsaimou C., **Chalastani V.**, & Tsoukala V., 2021. Life-Cycle-Oriented Framework for Seaport Infrastructure Maintenance and Climate Change Adaptation. *17th International Conference on Environmental Science and Technology*. Athens, Greece.
- Tsaimou C., **Chalastani V.**, Sartampakos P., & Tsoukala V., 2021. Integrating Seaport Infrastructure Monitoring Approaches to Improve Smartness and Climate Adaptive Capacity. *17th International Conference on Environmental Science and Technology*. Athens, Greece.
- **Chalastani V.I.** and Tsoukala V.K., May 2019. Design, construction and legal framework of an artificial surfing reef (ASR) in Marathon bay, Attica. *1st International Conference Design and Management of Port, Coastal, and Offshore Works*. Athens, Greece.

- **Chalastani V.I.**, Manetos P., Tsoukala V.K., Coccossis H., Duarte C.M., May 2019. Marine spatial planning to address conservation challenges: The case study of Crete. *1st International Conference Design and Management of Port, Coastal, and Offshore Works*. Athens, Greece.
- **Chalastani V.I.**, Manetos P., Al-Suwailem A.M., Hale J.A., Vijayan A.P., Pagano J., Williamson I., Henshaw S.D., Albaset R., Butt F., Brainard R., Coccossis H., Tsoukala V.K. and Duarte C.M., April 2019. Reconciling Ecotourism Development and Conservation Outcomes through Marine Spatial Planning for a Saudi Giga-Project in Red Sea (The Red Sea Project, Vision 2030). *OceanVisions 2019 - Climate Summit "Successes in resilience, adaptation, mitigation, and sustainability"*. Georgia Tech, Atlanta, Georgia, USA. SESSION IV - Sustainability of Ocean Resources: Marine Spatial Planning. [[Summit video recording \(Day 3: 3:07:13-3:17:34\)](#); [Full program with abstract included \(page 32\)](#)]
- **Chalastani V. I.**, Manetos P., Al-Suwailem A. M., Hale J. A., Vijayan A. P., Pagano J., Williamson I., Henshaw S. D., Albaset R., Butt F., Brainard R., Coccossis H., Tsoukala V. K. and Duarte C. M., March 2019. Reconciling Ecotourism Development and Conservation Outcomes through Marine Spatial Planning for a Saudi Giga-Project in Red Sea (The Red Sea Project, Vision 2030). *KAUST Research Conference: Securing a Future for Red Sea Ecosystems*. KAUST, Thuwal, Saudi Arabia. [[Speakers](#); [Agenda: Monday 11 March-Afternoon session](#)]

ADDITIONAL INFORMATION

Languages: Greek (Native) • English (Fluent | IELTS 8.5/9 | University of Cambridge Proficiency) • French (Fluent | Level C2)

IT skills: Microsoft Office • MIKE21 • Photoshop • AutoCAD 2D&3D

Teaching experience

Apr 2019 – Present

- Teaching assistant, School of Civil Engineering, NTUA. Courses: Maritime Hydraulics and Harbour Engineering, Advanced Topics in Port Engineering (autumn semesters), Coastal Engineering, Environmental Impacts (spring semesters).
- Teaching assistant, Inter-Departmental Postgraduate Programme: "Water Resources Science and Technology", School of Civil Engineering, NTUA. Course: Integrated Coastal Zone Management (spring semester).

Voluntary work

TEDxNTUA | Organising member of the first TEDxNTUA convention that took place in January 2015.

Street Store | Introduced the first Street Store for the homeless that took place in December 2014 in Athens.

Memberships

- SDSN Greece, SDSN Europe, National Chamber of Engineers