

G.-Fivos Sargentis

Dr. Engineer-Sculptor

# Selected works



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<https://g-fivos.gr/>

January 2025

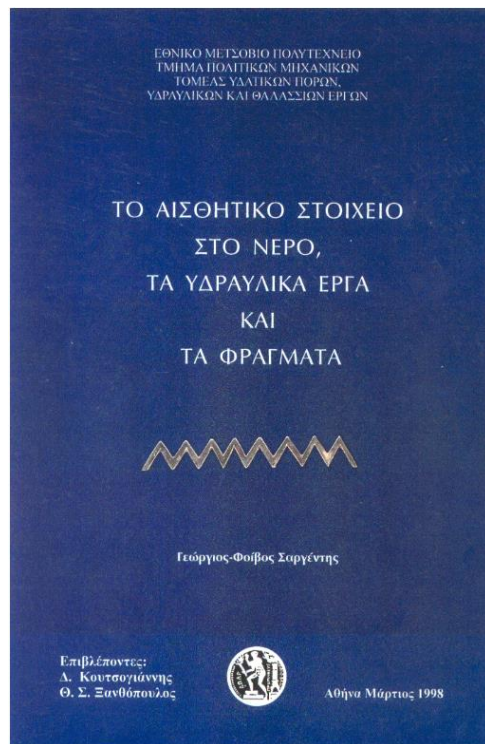
1985-1990



1991-2000



1998

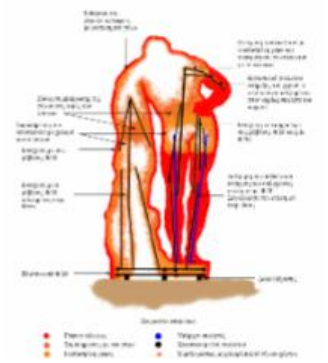
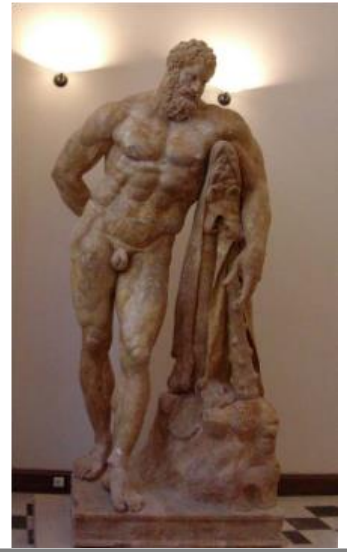
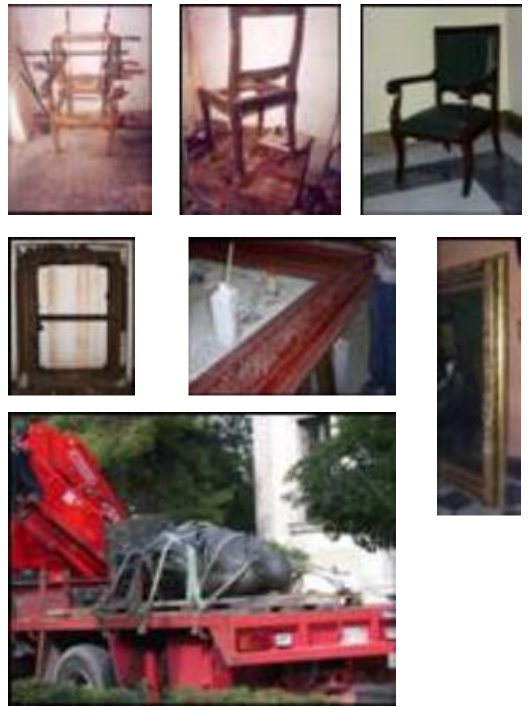


2001-2006



# 2001-2005. Research projects

N.T.U.A. HISTORICAL RECTOR'S BUILDING, Creation of a Museum of Research and Technology, Recreation of Artistic Property and Documentation of History





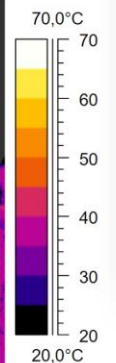
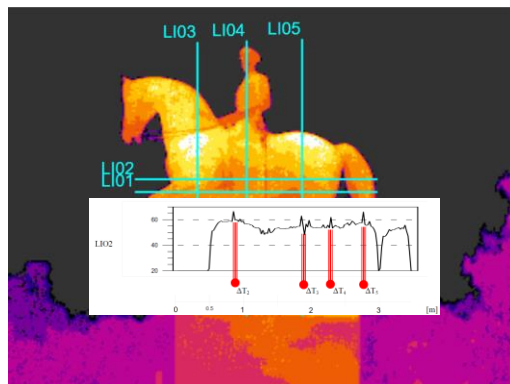
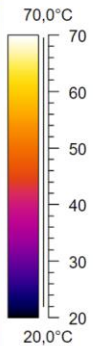
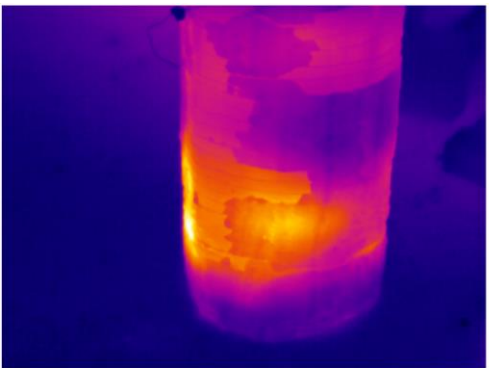
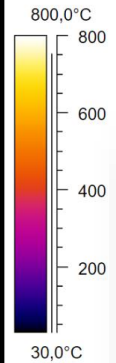
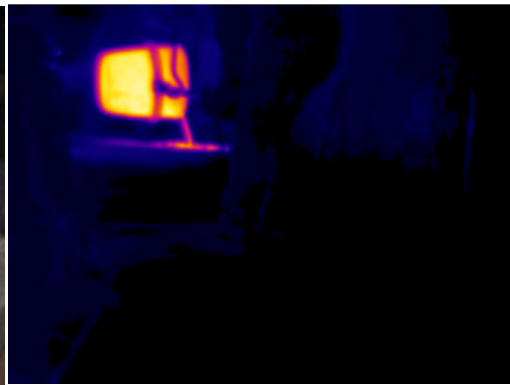
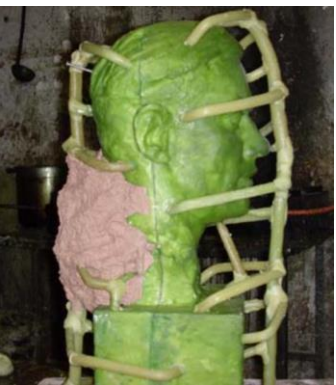


## 2002-2004. 700-bed hostels at the Zografou University Campus



# 2000-2006. PhD thesis


## The Use and Technical Aspects of Materials in Sculpture




ΕΘΝΙΚΟ ΜΕΤΕΩΡΟΛΟΓΙΟ ΠΟΛΥΤΕΧΝΕΙΟ  
ΣΧΟΛΗ ΑΡΧΙΤΕΚΤΟΝΩΝ ΜΗΧΑΝΙΚΩΝ  
ΤΟΜΕΑΣ ΣΥΝΘΕΤΩΝ ΤΕΧΝΟΛΟΓΙΚΗΣ ΑΙΧΜΗΣ  
ΕΡΓΑΣΤΗΡΙΟ ΤΕΧΝΙΚΩΝ ΥΛΙΚΩΝ  
ΔΙΕΥΘΥΝΤΗΣ ΚΑΘΗΓΗΤΗΣ ΑΝΔΡ. Γ. ΚΟΡΝΑΡΟΣ

Η ΧΡΗΣΗ ΚΑΙ Η ΣΥΜΠΕΡΙΦΟΡΑ ΤΩΝ ΥΛΙΚΩΝ ΣΤΗΝ  
ΓΥΛΙΠΤΙΚΗ

Γ. ΦΩΙΒΟΣ ΠΑΡΕΝΤΗΣ ΠΟΛΙΤΙΚΟΣ ΜΗΧΑΝΙΚΟΣ Ε.Μ.Π.  
ΕΠΙΒΛΕΠΩΝ ΚΑΘΗΓΗΤΗΣ ΑΝΔΡ. Γ. ΚΟΡΝΑΡΟΣ



70,0°C  
60  
50  
40  
30  
20,0°C



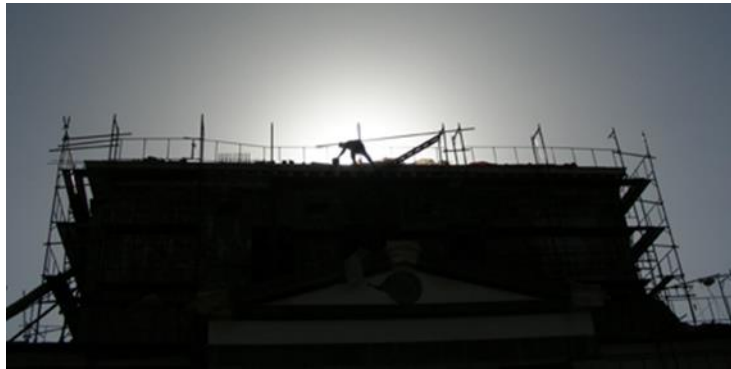
Διόρθωση: Διακρίβη  
ΑΘΗΝΑ 2007



# 2006-2010. Averof building



<https://youtu.be/Jh14L2TnZoc?si=PMk3XJUasgaZ7QEe>



**EUROPEAN HERITAGE  
EUROPA NOSTRA  
AWARDS**

# 2007-2017. Earth architecture



**Η Γη ως Υλικό**  
εξειδίκευση με σάκ αλάτι για την αρχιτεκτονική-με-τη-γη

Γ. ΦΟΥΒΟΣ ΣΑΡΓΕΝΤΗΣ  
ΝΙΚΟΛΑΟΣ ΣΥΜΕΩΣΙΔΗΣ

ΑΘΗΝΑ 2008

eco-dome.gr

**Σχέδια για τη Γη**  
εξειδίκευση με σάκ αλάτι για την αρχιτεκτονική-με-τη-γη

Γ. ΦΟΥΒΟΣ ΣΑΡΓΕΝΤΗΣ  
ΝΙΚΟΛΑΟΣ ΣΥΜΕΩΣΙΔΗΣ

ΑΘΗΝΑ 2009

eco-dome.gr

**υλΟικολογία**

ΜΕΘΟΔΟΙ ΚΑΙ ΚΡΙΤΗΡΙΑ ΑΞΙΟΛΟΓΗΣΗΣ  
ΤΗΣ ΟΙΚΟΛΟΓΙΚΗΣ ΣΥΜΠΕΡΙΦΟΡΑΣ  
ΤΩΝ ΔΟΜΙΚΩΝ ΥΛΙΚΩΝ

Γ.-ΦΟΥΒΟΣ ΣΑΡΓΕΝΤΗΣ  
Δρ. Μηχανικός

ΣΑΔΑΣ ΠΕΑ: 13<sup>ο</sup> ετήσιο συνέδριο Επιστήμη - Σχεδιασμό  
«ΠΡΟΣΧΕΔΙΑΣΜΟΣ ΚΑΙ ΕΦΑΡΜΟΓΕΣ ΤΗΣ ΟΙΚΟΛΟΓΙΚΗΣ  
ΑΡΧΙΤΕΚΤΟΝΙΑΣ»  
26 Μαΐου έως 31 Ιουνίου 2018  
Σεβάνες Στάμου Σπούρνο Βάλη Μερύ Βάλου.

Μηχανική-περιβαλλοντική συμπεριφορά και εφαρμογές της άνισης γης

Γ.-ΦΟΥΒΟΣ ΣΑΡΓΕΝΤΗΣ  
Δρ. Μηχανικός

ΣΑΔΑΣ ΠΕΑ: 13<sup>ο</sup> ετήσιο συνέδριο Επιστήμη - Σχεδιασμό  
«ΠΡΟΣΧΕΔΙΑΣΜΟΣ ΚΑΙ ΕΦΑΡΜΟΓΕΣ ΤΗΣ ΟΙΚΟΛΟΓΙΚΗΣ  
ΑΡΧΙΤΕΚΤΟΝΙΑΣ»  
26 Μαΐου έως 31 Ιουνίου 2018  
Σεβάνες Στάμου Σπούρνο Βάλη Μερύ Βάλου.



2008



Genesis.  
The game  
of man  
in the world



2013



2014









# 2014-2024



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10 May 2024

**Technologies | 2022 Editor's Choice Articles—Part II**

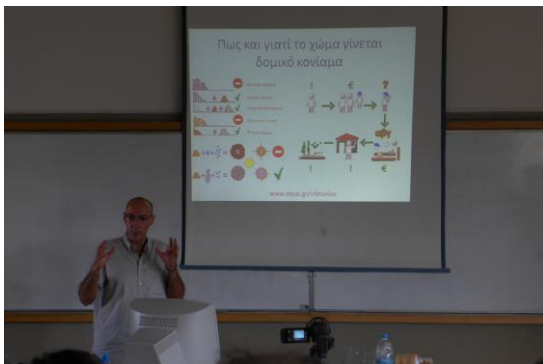
We are pleased to share the following ten Editor's Choice articles published in Technologies (ISSN: 2227-1081). These papers were selected by our Editors-in-Chief and Editorial Board Members from the most notable papers published in Volume 10 (2022). All these papers are of particular interest and importance to readers and have been well received by researchers.

1. "3D Scanning/Printing: A Technological Stroke in Sculpture" by G. Fotis, S. Georgios, K. Vangelis, F. Fragoulas, M. Chantzis, D. Demetris, K. Kostoyiannis, S. Stephanos, C. Camanigopoulos, and N. Kozis. D. Logothos. Technologies 2022, 10(1), 6. <https://doi.org/10.3390/technologies1001006> Available online: <https://www.mdpi.com/2227-1081/10/1/6>



# 2014-2017. Teaching and research

Educational and research work at the Laboratory of Construction Materials of the School of Architecture, National Technical University of Athens (N.T.U.A.).



# 2018-2019

ΣΑΔΑΣ-ΠΕΑ: 13th and 14th Weekly Workshop-Seminar «Natural building and an alternative approach to restoration" [Stamos Stournas](#)  
[Guesthouse, Alli Meria, Volos](#)



# 2017-2023. PhD thesis

## Issues of prosperity: Stochastic evaluation

## of data related to environment, infrastructures, economy and society



### Threats in Water-Energy-Food-Land Nexus by the 2022 Military and Economic Conflict

G. Fivos Sargentis <sup>1,2</sup>, Nelson D. Lagos <sup>3</sup>, Cleopatra Evangelia Cavallé <sup>4</sup>, and Dimitris Koutantakís <sup>5</sup>

- <sup>1</sup> Laboratory of Energy and Water Resources Management, School of Civil Engineering, National Technical University of Athens (NTUA), Athens, Greece
- <sup>2</sup> Institute of Water Resources and Environment, National Technical University of Athens (NTUA), Athens, Greece
- <sup>3</sup> Institute of Water Resources and Environment, National Technical University of Athens (NTUA), Athens, Greece
- <sup>4</sup> Department of Economic and Financial Engineering, National Technical University of Athens (NTUA), Athens, Greece
- <sup>5</sup> Department of Economic and Financial Engineering, National Technical University of Athens (NTUA), Athens, Greece

**Abstract:** The evolution of stochastic models in the domain of spatial clustering, which optimize economic models in the management of the water-energy-food (WEF) nexus, Energy, and food are dimensional measures of prosperity. Using the WEF nexus as an indicator, we address the world's development in the context of global progress. The global progress is characterized by the world's development in the context of global progress of energy, water, and food. We analyze the world's development in the context of global progress of energy, water, and food. We analyze the world's development in the context of global progress of energy, water, and food. We analyze the world's development in the context of global progress of energy, water, and food. We analyze the world's development in the context of global progress of energy, water, and food.



### Stochastic evaluation of the water-energy-food (WEF) nexus in the context of global progress

G. Fivos Sargentis <sup>1,2</sup>, Nelson D. Lagos <sup>3</sup>, Cleopatra Evangelia Cavallé <sup>4</sup>, and Dimitris Koutantakís <sup>5</sup>

- <sup>1</sup> Laboratory of Energy and Water Resources Management, School of Civil Engineering, National Technical University of Athens (NTUA), Athens, Greece
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### Evolution of Clustering Quantified by a Stochastic Method—Case Studies on Natural and Human Social Structures

G. Fivos Sargentis <sup>1,2</sup>, Natalia Evangelou <sup>3</sup>, Stefania Papageorgiou, Paraskevi Dastanliou <sup>4</sup>, and Dimitris Koutantakís <sup>5</sup>

- <sup>1</sup> Laboratory of Energy and Water Resources Management, School of Civil Engineering, National Technical University of Athens (NTUA), Athens, Greece
- <sup>2</sup> Institute of Water Resources and Environment, National Technical University of Athens (NTUA), Athens, Greece
- <sup>3</sup> Institute of Water Resources and Environment, National Technical University of Athens (NTUA), Athens, Greece
- <sup>4</sup> Department of Economic and Financial Engineering, National Technical University of Athens (NTUA), Athens, Greece
- <sup>5</sup> Department of Economic and Financial Engineering, National Technical University of Athens (NTUA), Athens, Greece

**Abstract:** Clustering structures emerging from small to large scales are ubiquitous in the physical world. Interestingly, clustering structures are omnipresent in human history, ranging from the most organization of life in societies (e.g., urbanization) to the development of large-scale infrastructure and policies for meeting population needs. Indeed, it is through for survival and progress, studied by geographers through the human sciences. At the same time, this knowledge that is the basis of the progress, the use of the delivered products is reduced while the operations are modified and optimized for the most efficient use. This knowledge that is the basis of the progress, the use of the delivered products is reduced while the operations are modified and optimized for the most efficient use. This knowledge that is the basis of the progress, the use of the delivered products is reduced while the operations are modified and optimized for the most efficient use.



### Values and Costs in History: A Case Study on Estimating the Cost of Hadrianic Aqueduct's Construction

G. Fivos Sargentis <sup>1,2</sup>, Fivos Defraix <sup>3</sup>, Nelson D. Lagos <sup>4</sup>, and Nikos Malamou <sup>5</sup>

- <sup>1</sup> Laboratory of Energy and Water Resources Management, School of Civil Engineering, National Technical University of Athens (NTUA), Athens, Greece
- <sup>2</sup> Institute of Water Resources and Environment, National Technical University of Athens (NTUA), Athens, Greece
- <sup>3</sup> Institute of Water Resources and Environment, National Technical University of Athens (NTUA), Athens, Greece
- <sup>4</sup> Department of Economic and Financial Engineering, National Technical University of Athens (NTUA), Athens, Greece
- <sup>5</sup> Department of Economic and Financial Engineering, National Technical University of Athens (NTUA), Athens, Greece

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### National Technical University of Athens School of Civil Engineering Department of Water Resources and Environmental Engineering

### Issues of prosperity: Stochastic evaluation of data related to environment, infrastructures, economy and society

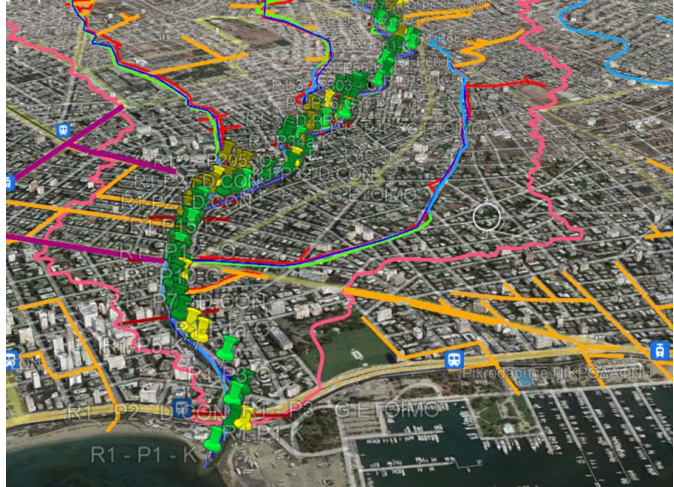
### G. Fivos Sargentis Ph.D. Thesis



# 2017-2024. Teaching and research

Educational and research work at the Laboratory of Construction Materials of the School of Civil Engineering, National Technical University of Athens (N.T.U.A.).  
[Stuff we don't mention in the normal course of studies](#)

## Geoinformation flood risk assessment



Εθνικό Μετσόβιο Πολυτεχνείο Σχολή Πολιτικών Μηχανικών

**Καλοκαιρινό εργαστήριο**  
 Παραλειπόμενα της εκπαιδευτικής διαδικασίας

3-9 Ιουλίου 2023

Artificial intelligence & 3D printing. Ο ρόλος του μηχανικού  
 Κλιματική αλλαγή  
 Μεταβαλλόμενη τοπία (πυρκαγιάς, μεταβολές χλωρίδας)  
 Τοπία και έργα υποδομής  
 Ο ρόλος του πλέγματος νερού-ενέργειας-τροφίμων

**campingrovies**

Βόρεια Εύβοια, κάμπινγκ Ροβιές  
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Δηλώσεις συμμετοχής  
 email: [fnos@itil.ntua.gr](mailto:fnos@itil.ntua.gr)

**ADDOPTML**  
 Προσέλαση υποβολής δηλώσεων: 31.5.2023 (θέσεις περιορισμένες)



## Marie Skłodowska-Curie

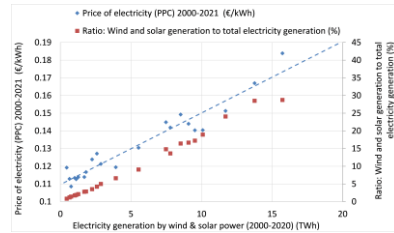
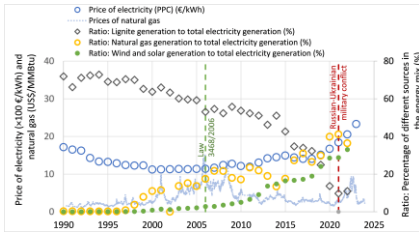
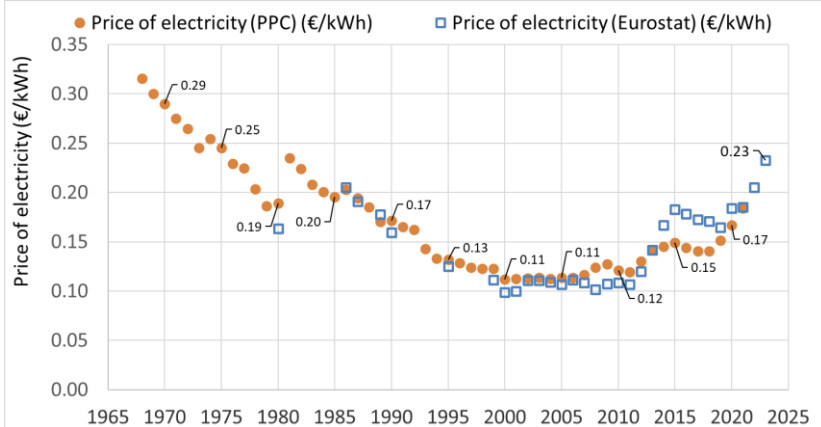


**ADDOPTML**  
 Optimized 3D printed structures

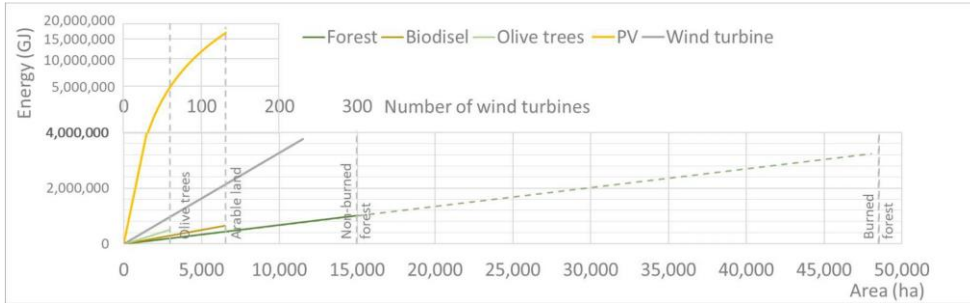
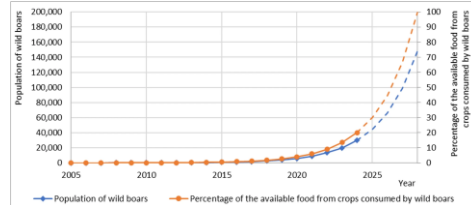
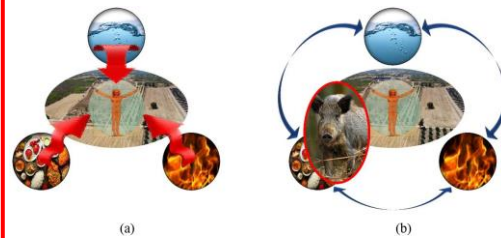
**OPTARCH**

# Recent publications

Sargentis G.-F.; Ioannidis R.; Mamassis N.; Zoukos V.; Koutsoyiannis D. [A Review of the Energy Policy in Greece in the Last 50 Years and Its Implications for Prosperity](#). Clean Energy and Sustainability 2024, 2, 10021. <https://doi.org/10.70322/ces.2024.10021>



Sargentis G.-F.; Ioannidis R. [The impacts of altering biodiversity to the Water–Energy–Food nexus: case study North Euboea, Greece](#). Discover Water, Springer-Nature, 2024, 4, 105. <https://doi.org/10.1007/s43832-024-00165-y>



# Selected publications

## Issues of prosperity

- Sargentis, G.-F.; Koutsoyiannis, D.; Angelakis, A.; Christy, J.; Tsonis, A.A. Environmental Determinism vs. Social Dynamics: Prehistorical and Historical Examples. *World* 2022, 3, 357-388. <https://doi.org/10.3390/world3020020>
- Sargentis, G.-F.; Defteraios, P.; Lagaros, N.D.; Mamassis, N. Values and Costs in History: A Case Study on Estimating the Cost of Hadrianic Aqueduct's Construction. *World* 2022, 3, 260-286. <https://doi.org/10.3390/world3020014>
- Sargentis, G.-F.; Iliopoulou, T.; Dimitriadis, P.; Mamassis, N.; Koutsoyiannis, D. Stratification: An Entropic View of Society's Structure. *World* 2021, 2, 153-174. <https://doi.org/10.3390/world2020011>
- Sargentis, G.-F.; Ioannidis, R.; Bairaktaris, I.; Frangedaki, E.; Dimitriadis, P.; Iliopoulou, T.; Koutsoyiannis, D.; Lagaros, N.D. Wildfires vs. Sustainable Forest Partitioning. *Conservation* 2022, 2, 195-218. <https://doi.org/10.3390/conservation2010013>
- Sargentis, G.-F.; Iliopoulou, T.; Sigourou, S.; Dimitriadis, P.; Koutsoyiannis, D. Evolution of Clustering Quantified by a Stochastic Method—Case Studies on Natural and Human Social Structures. *Sustainability* 2020, 12, 7972. <https://doi.org/10.3390/su12197972>
- Κουτσογιάννης Δ., και Γ.-Φ. Σαργέντης, Αδιέξοδα της αυτοκρατορίας της αγοράς, Ακδημόνευτοι Στοχασμοί – Στη Μνήμη του Θεμιστοκλή Ξανθόπουλου, Πρύτανη ΕΜΠ 1997-2003, επιμέλεια Δ. Κουτσογιάννης, Ν. Λαγαρός, και Α.Γ. Μπουντουβής, 99–123, Πανεπιστημιακές Εκδόσεις ΕΜΠ – Εθνικό Μετσόβιο Πολυτεχνείο, Αθήνα, 2024. <https://www.itia.ntua.gr/el/docinfo/2459/>

## Water-Energy-Food nexus

- Sargentis G.-F.; Mamassis N.; Kitsou O.; Koutsoyiannis D. The role of technology in the water–energy–food nexus. A case study: Kerinthos, North Euboea, Greece. *Front. Water* 2024. 6:1343344. <https://doi.org/10.3389/frwa.2024.1343344>
- Sargentis G.-F.; Kougkia M. Vulnerabilities of water-energy and food nexus in cities of digital era. *Insight - Civil Engineering*. 2024; 7(1): 608. <https://doi.org/10.18282/ice.v7i1.608>
- Sargentis, G.-F.; Koutsoyiannis, D. The Function of Money in Water–Energy–Food and Land Nexus. *Land* 2023, 12, 669. <https://doi.org/10.3390/land12030669>
- Sargentis, G.F.; Lagaros, N.D.; Cascella, G.L.; Koutsoyiannis, D. Threats in Water–Energy–Food–Land Nexus by the 2022 Military and Economic Conflict. *Land* 2022, 11, 1569. <https://doi.org/10.3390/land11091569>
- Sargentis, G.-F.; Siamparina, P.; Sakki, G.-K.; Efstratiadis, A.; Chiotinis, M.; Koutsoyiannis, D. Agricultural Land or Photovoltaic Parks? The Water–Energy–Food Nexus and Land Development Perspectives in the Thessaly Plain, Greece. *Sustainability* 2021, 13, 8935. <https://doi.org/10.3390/su13168935>

## Art and aesthetics

- Sargentis, G.-F.; Dimitriadis, P.; Koutsoyiannis, D. Aesthetical Issues of Leonardo Da Vinci's and Pablo Picasso's Paintings with Stochastic Evaluation. *Heritage* 2020, 3, 283-305. <https://doi.org/10.3390/heritage3020017>
- Sargentis, G.-F.; Dimitriadis, P.; Iliopoulou, T.; Koutsoyiannis, D. A Stochastic View of Varying Styles in Art Paintings. *Heritage* 2021, 4, 333-348. <https://doi.org/10.3390/heritage4010021>
- Sargentis, G.-F.; Ioannidis R.; Chiotinis M.; Dimitriadis P.; Koutsoyiannis D. Aesthetical Issues with Stochastic Evaluation. In: Belhi A., Bouras A., Al-Ali A.K., Sadka A.H. (eds) *Data Analytics for Cultural Heritage*. Springer, Cham 2021. [https://doi.org/10.1007/978-3-030-66777-1\\_8](https://doi.org/10.1007/978-3-030-66777-1_8)



# Presentations in youtube (in Greek)

- On Energy and Renewable Energy Sources <https://www.youtube.com/playlist?list=PLE8HdsuRBlotScKdFLasuzMFDhT27T7XA>
- The Water-Energy-Food Nexus [https://www.youtube.com/playlist?list=PLE8HdsuRBlos8qtVVf9LV\\_gwUVt-pPH\\_v](https://www.youtube.com/playlist?list=PLE8HdsuRBlos8qtVVf9LV_gwUVt-pPH_v)
  - On water [https://youtu.be/F9WZxEUgVQg?si=NR\\_SzuyPEBbXTiVq](https://youtu.be/F9WZxEUgVQg?si=NR_SzuyPEBbXTiVq)
  - On energy [https://youtu.be/DvJauWPnixY?si=6TaE5kEIAh64p\\_dn](https://youtu.be/DvJauWPnixY?si=6TaE5kEIAh64p_dn)
  - On food <https://youtu.be/4WgV6N7HAXo?si=MRU06--rr9m2lclp>
- On money <https://www.youtube.com/playlist?list=PLE8HdsuRBlott-ucA4Yf2uhw8slmcUyiY>
- Stochastics <https://www.youtube.com/playlist?list=PLE8HdsuRBlouG9CHePBb0w9ViDSSJzX4S>
- Entropy and social inequalities <https://www.youtube.com/playlist?list=PLE8HdsuRBlouOu4kh4phNaPCBEH-JOT8p>
- Laboratory on Humanitarian Studies <https://www.youtube.com/playlist?list=PLE8HdsuRBlou0k4OUT1cNmXvnarc2Ar-N>

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Member of:  
Technical Chamber of Greece (TEE-TCG)  
Chamber of Fine Arts of Greece

Contact:  
Address: 9 Astrapogiannou str., PC 11526 Athens - Greece  
Website: [www.g-fivos.gr](http://www.g-fivos.gr)  
Blog: <http://g-fivos.blogspot.gr/>  
Email: [fivos@itia.ntua.gr](mailto:fivos@itia.ntua.gr), [fivos.sargentis@gmail.com](mailto:fivos.sargentis@gmail.com)

Tel: +30 697 3029012

<https://g-fivos.gr/>

