

A. List of research projects that the Director of LACEC has participated in

List of research projects that Nikolaos Katsoulas has been involved as Researcher or Scientific Responsible/Coordinator of the project:

A.1. *Projects funded by the European Commission*

1. «CLOsed SYStem for water and nutrient management in horticulture». Research project funded by the European Union, 01/01/2002-31/12/2003, Contract number QLK-2000-01301. *Researcher.*
2. Sustainable orchard irrigation for improving fruit quality and safety, IRRQUAL, Research project funded by the European Union, 01/06/2006-31/05/2009. *Researcher.*
3. Sustainable use of irrigation water in the Mediterranean region, Sirrimed, (funded by the European Union), 2009-2013. *Researcher*
4. Smart Controlled Environment Agriculture Systems, Smart-CEA, (funded by the European Union), 2011-2014. *Researcher.*
5. Online Professional Irrigation Scheduling Expert System, OpIRIS. Research project funded by the European Union, 01/12/2013-30/11/2015. *Researcher and Project Manager.*
6. Adapt agricultural production to climate change and limited water supply, Adapt2Change (LIFE09 ENV/GR/000296). Research project funded by the European Union, 01/08/2014-31/08/2016. *Researcher and Project Manager*
7. Raising public awareness of development issues and promoting development education in the European Union. RURAL DEAR AGENDA - EYD 2015. Research project funded by the European Union, 01/09/2015-31/12/2017. *Researcher and Project Manager.*
8. European network for the cohesion and solidarity in rural areas, ENSURE, Europe for Citizens Project funded by the EU, 9/2017-7/2019. *Researcher and Project Manager.*
9. Pathways to phase-out contentious inputs from organic agriculture in Europe, Organic Plus. H2020 (SFS-08-2017, RIA project, grant agreement No 774340), 01/05/2018-30/04/2022. *Coordinator for UTH.*
10. Green Growth through the capitalization of innovative Greenhouses, MED Greenhouses. Interreg-MED project, (PA no: 3082) 01/02/2018-31/07/2019. *Coordinator for UTH, Communication manager of the project.*
11. Precision irrigation management to improve water and nutrient use efficiency in the Mediterranean region, PRECIMED. Project funded in the frame of PRIMA projects. 01/10/2019-31/09/2022, *Coordinator for UTH.*
12. Valorisation of ancient farming techniques in resilient and sustainable agriculture- VALOR, Erasmus+ project 612501-EPP-1-2019-1-IT-EPPKA2-KA, 01/11/2019-30/10/2022. *Coordinator for UTH.*
13. Empowerment of VET system through sustainable entrepreneurial initiatives in quality pig breeding-BREED, Erasmus+ project 2019-1-IT01-KA202-007785, 01/09/2019-31/08/2022. *Coordinator for UTH.*
14. Training Material for Global Citizenship Education (GCE) in rural areas. Erasmus+ project KA204-00B721B4, 01/01/2021-31/12/2022. *Coordinator for UTH.*
15. Organic Photovoltaic Greenhouse-ORION. Project funded in the frame of SOLAR-ERA.NET Cofund 2 Additional Joint Call projects (PA no: 56). 2022-2023, *Coordinator for UTH.*
16. Field -testing and demonstration of digital and space-based technologies with agro-ecological and organic practices in systemic innovation, PestNu. H2020, Green Deal Call:

- LC-GD-6-1-2020: Subtopic: C, Innovation Action project, grant agreement No 101037128), 01/10/2021-30/09/2024. *Coordinator for UTH.*
17. Innovative concepts and technologies for ECOlogically sustainable NUTRIent management in agriculture aiming to prevent, mitigate and eliminate pollution in soils, water, and air – EcoNutri. HORIZON-CL6-2022-ZEROPOLLUTION-01 (Clean environment and zero pollution), Topic: HORIZON-CL6-2022-ZEROPOLLUTION-01-03, Type of Action: HORIZON-IA, Proposal number: 101081858, 01/11/2022-30/04/2026. *Coordinator for UTH*
  18. Crop responsive greenhouse agrivoltaics system with CO<sub>2</sub> enrichment for Higher Yields-REGACE. Call: HORIZON-CL5-2022-D3-01, (Sustainable, secure and competitive energy supply), Topic: HORIZON-CL5-2022-D3-01-06, Type of Action: HORIZON-IA, Proposal number: 101096056, Proposal acronym: REGACE. 01/02/2023-31/01/2026. *Associate Coordinator for UTH.*
  19. Emergent soil, plant and food onsite digital services on chemical and biological contaminants. HORIZON-MISS-2023-SOIL-01-03. Proposal number: 101157922, Proposal acronym: E-SPFdigit. 01/10/2024-30/09/2027. *Coordinator for UTH.*

#### A.2. *Bilateral Research Projects*

20. «Development of a greenhouse equipped with an insect proof system, appropriate for Mediterranean conditions». Research project funded by the General Secretariat for Research and Technology of Greece, under the framework of the Bilateral Greek-France agreement, 01/06/1999-31/07/2000. *Researcher.*
21. «Study of the dispersion of pesticides in naturally ventilated greenhouses». Research project funded by the General Secretariat for Research and Technology of Greece, under the framework of the Bilateral Greek-France agreement, 1/5/2007-31/9/2008. *Researcher.*
22. «Development of an e-tool for calculating the irrigation needs in Mediterranean greenhouses». Research project funded by the General Secretariat for Research and Technology of Greece, under the framework of the Bilateral Greek-Egypt agreement, 1/5/2007-31/7/2008. *Coordinator of the project.*
23. «Pesticides Monitoring Systems using Nanosensors for Safe Food Production». Research project funded by the General Secretariat for Research and Technology of Greece, under the framework of the Bilateral Greek-China agreement, 1/3/2013-30/9/2015. *Researcher.*
24. Cascade Hydroponics: an integrated approach to increase productivity, resource use efficiency and sustainability of protected horticulture, CasH. Greece-Germany bilateral project. 06/2018-12/2021. *Coordinator of the project.*
25. Development of a textile with Silica coating for environmental friendly control of insects in agricultural production, AgriTexSil. Greece-Germany bilateral project. 05/2018-12/2021. *Coordinator of the project.*

#### A.3. *Projects funded by National funds*

26. «Production of new UV-absorbing greenhouse cover materials aiming to reduce insects and diseases inside the greenhouse». Research project funded by the General Secretariat for Research and Technology of Greece, 01/06/2001-31/05/2003. *Researcher.*
27. «Development of domestic technology and know-how for greenhouse crop cultivation in closed hydroponic systems aiming to reduce nitrogen and chemical leaches in the ground» (Research project funded by the Ministry of National Education and Religious Affairs of Greece, 1/1/2004 - 31/8/2006). *Researcher.*

28. Control of fungi in Solanaceum crops by alternative (non-chemical) methods». Research project funded by the Ministry of National Education and Religious Affairs of Greece, 2004-2006. *Researcher*.
29. «Tracing of pesticides in the greenhouse environment» (Research project funded by the Ministry of National Education and Religious Affairs of Greece, 1/3/2004 - 28/2/2005). *Post-Doctorate Researcher*.
30. «Optimisation of greenhouse climate control in Mediterranean greenhouses during winter». Research project funded by the General Secretariat for Research and Technology of Greece, under the framework of PENED projects, 07/09/2005-06/09/2008. *Researcher*.
31. «Development and study of new anti-drip greenhouse cover materials appropriate for environmental friendly greenhouses». Research project funded by the General Secretariat for Research and Technology of Greece, under the framework of PAVET projects, 01/05/2006-30/10/2007. *Researcher*.
32. «Development and optimisation of an environmental friendly, hybrid system for passive solar heating in greenhouses with hydroponic crops». Research project funded by the General Secretariat for Research and Technology of Greece, under the framework of PAVET projects, 01/05/2006-30/10/2007. *Researcher*.
33. «Human networks for Research and Technological training: New Technologies for environmental friendly Greenhouses». Research project funded by the General Secretariat for Research and Technology of Greece, 16/4/2007-15/10/2008. *Researcher-Network Coordinator*.
34. Innovation Pole of Thessaly: «Ensuring total quality in production, packaging, handling, storage and distribution of food in Thessaly - Thessaly food». Research project funded by the General Secretariat for Research and Technology of Greece, 1/10/2007-30/9/2008. *Researcher*.
35. Theoretical and experimental investigation of screenhouse microclimate. Research project funded by the Ministry of Education, Lifelong Learning and Religious Affairs of Greece under the frame of Heraclitus projects. 2010-2013. *Researcher*.
36. Development of an Integrated System for the Water Resources Quality and Quantity Monitoring and Management of Agricultural Watersheds under Climate Change Conditions. Application to Lake Karla Watershed (HYDROMENTOR). Research project funded by the General Secretariat for Research and Technology of Greece under the Cooperation projects. 2011-2014. *Researcher*.
37. Optimal climate management of greenhouse cultivation with high salinity problems using omics techniques. Research project funded by the General Secretariat for Research and Technology of Greece under the Cooperation projects. 2011-2014. *Researcher*.
38. Evaluation of the effects of planting on buildings and development of innovative relevant hydroponic structures. Research project funded by the Ministry of Education, Lifelong Learning and Religious Affairs of Greece under the frame of Archimedes projects. 2011-2014. *Researcher*.
39. Intelligent crop-based environmental monitoring and control of sustainable greenhouse ecosystems. Research project funded by the General Secretariat for Research and Technology of Greece under the Aristeia projects. 2012-2015. *Researcher*.
40. Innovative polymer greenhouse films via application of functional coating, INGRECO. 2018-2021. Co-financed by the European Union and Greek national funds through the Operational Program Competitiveness, Entrepreneurship and Innovation, under the call RESEARCH – CREATE – INNOVATE (project code: T1EDK-01499). *Coordinator for UTH*.

41. Development and optimization of an aquaponic system to increase sustainability in food production, FoodOASIS. 2018-2021. Co-financed by the European Union and Greek national funds through the Operational Program Competitiveness, Entrepreneurship and Innovation, under the call RESEARCH – CREATE – INNOVATE (project code: T1EDK-01153). *Coordinator of the project.*
42. Exploitation of liquid wastes for microalgae cultivation and use for biodiesel and aquafeed production, Algae4Fuel&Aqua. 2018-2021. Co-financed by the European Union and Greek national funds through the Operational Program Competitiveness, Entrepreneurship and Innovation, under the call RESEARCH – CREATE – INNOVATE (project code: T1EDK-01580). *Coordinator of the project.*
43. Semi-transparent organic and printed photovoltaics for energy efficient Mediterranean greenhouses, Fotokipia. 2018-2021. Co-financed by the European Union and Greek national funds through the Operational Program Competitiveness, Entrepreneurship and Innovation, under the call RESEARCH – CREATE – INNOVATE (project code: T1EDK-01701). *Coordinator for UTH.*
44. Energy autonomous greenhouse exploiting renewable energy sources, AgroRes. 2020-2022. Co-financed by the European Union and Greek national funds through the Operational Program Competitiveness, Entrepreneurship and Innovation, under the call RESEARCH – CREATE – INNOVATE (project code: T2EDK-00912). *Subcontractor of Shelter SA SMEs.*
45. Integrated management and control system for greenhouse clusters, ICONIC. 2020-2022. Co-financed by the European Union and Greek national funds through the Operational Program Competitiveness, Entrepreneurship and Innovation, under the call RESEARCH – CREATE – INNOVATE (project code: T2EDK-02022). *Subcontractor of Agrostis SA.*
46. KARLA climate-land-water. Innovative actions to adapt to the effects of climate change, with an emphasis on land uses and water resources management, 2021-2023. Prasino Tameio, Greece. *Deputy Coordinator for UTH.*
47. Crop and livestock stress under climate change scenarios\_AGRO FUTURE CLIMATE STRESS)\_Proj.ID:15743, 2023-2025. ELIDEK, *Deputy Coordinator for UTH.*
48. Circular economy in agricultural production: the cycle of nutrition between plants, fish and insects as a new food production system with a low environmental footprint (Agro-Cycle). 2023-2025. Prasino Tameio, Greece. *Deputy Coordinator for UTH.*

*A.4. Research Projects funded by the Research Committee of the University of Thessaly*

49. «Determination of the effects of a thermal screen on the energy balance of the greenhouse». 01/02/1997-31/05/1997. *Researcher.*
50. «Installation and operation of a hydroponic system». 10/09/1997-09/07/1998. *Researcher.*
51. «Development and validation of a statistical model for tomato seedlings crop simulation». 01/05/2007-31/07/2008. *Scientific responsible of the project.*
52. Rational landscape design for optimal bioclimatic conditions at school yards. 2011-2012. *Researcher.*