

## Editorial

In today's world, innovation and technology are the tools for tackling the various types of crises and challenges that humanity and the planet face. The primary sector is suffering greatly from the effects of crises - economic, social and environmental - while being called upon to meet the challenges of global population growth, climate change and environmental protection. In this context, the Hellenic Association for Information and Communication Technologies in Agriculture, Food and Environment (HAICTA) organizes every two years conferences/discussions around ICT-related research applications, innovative methodologies and practices that can contribute to sustainable development of rural areas, rational use of natural resources by agriculture, and rural planning. This debate is more urgent today than ever before, as humanity experiences a new type of crisis, the COVID-19 pandemic.

HAICTA is the Greek Branch of European Federation for Information Technology in Agriculture (EFITA). The series of HAICTA conferences are an international venue for research and development in ICT in rural development and constitute a leading international professional and scientific forum for IT experts, agronomists, geotechnical and agri-food scientists, environmentalists, foresters, water engineers, spatial engineers, and decision-makers. These conferences constitute an interdisciplinary forum in which researchers, practitioners, and policy makers have the opportunity to present and discuss the recent developments on IT technologies and the various applications they are utilized in agricultural production.

The present volume contains the peer reviewed proceedings of the Ninth International Conference on ICTs in Agriculture, Food and Environment (HAICTA 2020), that took place in Thessaloniki, Greece, September 24-27, 2020.

The Conference was organized by HAICTA, the University of Macedonia, and the University of Western Macedonia. The conference was supported by the Research Committee of the Aristotle University of Thessaloniki, the Centre of Research and Technology, Hellas, and the Hellenic Agricultural Organization "Dimitar".

The conference received 109 paper submissions, out of which 94 were accepted. The top ten technical areas covered by the accepted papers (as indicated by the primary keyword assigned by paper authors) were Innovation in Farms and Rural Areas, Decision Support Systems, Precision Technologies in Crop and Livestock Production Systems, Farm and Animal Health Monitoring and Data Recording Systems, Information Systems, Environmental Impact Assessment, Innovations in Food Hygiene and the Production of High Quality Food, Environmental Design and Policy, Environmental-friendly farm and livestock production and Agro-ecology, Internet of Things, Sensor, RFID and Mobile/Wireless Network Applications, Modelling and Simulation in Climate Change, Water Resources Management. Out of those 94 papers, 18 were short papers, 31 submissions were abstracts and 33 papers were presented as e-posters. Finally, 12 papers were presented in the Doctoral Consortium. Adapting to the constraints imposed by the COVID-19 pandemic, the authors presented their work either in person or digitally.

We are grateful to all authors who submitted papers to the conference. We also had the honour to collaborate with an excellent group of 67 reviewers who delivered

175 reviews of the submitted manuscripts, providing fruitful comments to the presenting members of the Conference. HAICTA 2020 used a blind review process and each submitted abstract or short paper was evaluated by two reviewers, who provided their ratings and valuable comments. We are also grateful to the invited keynote speaker Prof. Maurizio Canavari who presented his recent research activity in the HAICTA community through his quite interesting presentation. We would also like to thank the Organizing Committee Chairs and the Conference Chairs for their support to our task.

The HAICTA 2020 proceedings illustrate new research findings presented in a very difficult timing, due to the COVID-19 pandemic. We hope and believe that this experience, of organizing and delivering a Conference under such uncertainty, will not happen again. Finally, we would like to thank again all the contributors of this Conference, because for both scientific and organizing committees it was a great challenge to finally decide to organize this Conference.

The Editors,

George Vlontzos

*University of Thessaly*

Stavriani Koutsou

*International Hellenic University*