Editorial

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Biographical notes: Garyfallos Arabatzis is an Assistant Professor (2007–present) at the Department of Forestry and Management of the Environment and Natural Resources of Democritus University of Thrace, Orestiada. He has published over 130 articles in international and Greek journals and proceedings. More specifically, he has published 55 articles in international journals such as *Forest Policy and Economics*, *Energy Policy*, and *Renewable and Sustainable Energy Reviews*. His research interests include natural resource economics and policy, regional development, and land use planning and policy. He is a reviewer in international journals such as *Environmental Modeling and Assessment*, *Journal of Environmental Management*, and *Land Use Policy*.

Konstantinos Paparrizos is a Professor at the University of Macedonia, Department of Applied Informatics. His received his Diploma in Mathematics from the Aristotle University of Thessaloniki and Master and PhD in Operations Research from the Case Western Reserve University. His fields of interest include linear programming, network optimisation, combinatorial optimisation and design and analysis of algorithms. He has published papers in international journals like the *European Journal of Operational Research*, *Computers and Operations Research*, and the *Operations Research Letters*. He is a reviewer for a number of international journals and participates in many scientific societies like the Operations Research Society of America (ORSA). He has authored five books and teaches courses like network optimisation, probability and statistics and decision support systems.

The 7th Meeting of Multicriteria Decision Analysis is a continuation of the respective meetings that took place in previous years. The successful outcome of these meetings is a clear indication of intense research activity developed by Greek researchers in the field of multi-criteria analysis. The aim of the seventh meeting is the presentation of new research results in this area by Greek researchers, with emphasis on new methodological developments and practical applications to businesses and organisations. The seventh

meeting was held in the hospitable city of Orestiada, in the region of Thrace, in the north of Greece, close to the border with Turkey. The Department of Forestry and Environmental Management and Natural Resources of the Democritus University of Thrace was responsible for the organisation of the meeting that was held between September 30, 2010 and October 2, 2010; a couple of photos from the sessions are shown in Figures 1 and 2.

Figure 1 Participants at the conference (see online version for colours)

Figure 2 A view of the session room (see online version for colours)

The main methodological themes of the meeting were:

- multi-criteria utility theory
- theory of preference relations

- analytical-synthetic approaches
- multi-criteria mathematical programming
- goal programming
- modelling preferences
- multi-criteria decision support systems
- multi-criteria approaches to group decision making
- stability analysis.

Simultaneously, the conference themes include applications of multi-criteria analysis in addressing real problems decision making. Examples of application fields are:

- management production systems
- HR management
- enterprise management
- management of natural resources, energy and environment
- rural and regional development
- education
- logistics
- e-commerce
- marketing
- transportation
- shipping
- defence
- tourism
- health
- financial management.

Seven of the papers presented in the meeting were selected in order to prepare a special issue for *IJDATS*, after a long two-phase review process. In the first paper, S. Alexopoulos, Y. Siskos, N. Tsotsolas and N. Hristodoulakis examine 'facilitated modelling' that is exercised as an intervention tool for supporting the 'structuring' phase of strategic decision making in an application that approaches modelling a choice/investment challenge in the Greek publishing sector as a multi-criteria decision problem. The set of possible publishing products as well as a consistent family of evaluation criteria reflecting company strategy are identified. Further, enhancing the methodology under study is the development of quantitative indices for all criteria, so that they can be modelled as measurable criteria based on macroeconomic environment, opportunities, existing and forecast market data and trends, executives' views, public's estimations derived from surveys, and third parties' data banks. For illustrative purposes,

an indicative application is presented through which the value of all criteria for a candidate publishing product is estimated.

Next, C.C. Triantafyllidis and J. Papathanasiou refer to the National Strategic Reference Framework (NSRF) which is the fourth programming document for Greece through the years 2007–2013 and constitutes of eight sectional operational programmes (OP), five regional OP and 12 European territorial cooperation programmes. Its goal is the achievement of the strategic developmental aims of the country. One of the five regional OP, is the ROP of Macedonia – Thrace, which general goals are 'strengthening the competitiveness of productive fabric', 'the utilisation of the region's location in South East Europe' and 'the equitable economic and social development in the framework of sustainability' as described in its summary description/outline. These goals are correlated to the nine priority axes of the ROP. The description of Priority Axis 7, is 'sustainable development and quality of life in the Central Macedonia region' and one of the goals of the interferences of the axis is the improvement and renewal of the buildings of the school units of every educational grade in the Region of Central Macedonia (RCM, Thematic Priority 75). While choosing the actions 'construction buildings in education' to be included in the NSRF of RCM for co-funding, procedures aiming at securing the formal and essential sufficiency of the submitted proposals are being followed. The evaluation system currently used is called 'immediate assessment', which means that every submitted project proposal is being examined individually to attest its fulfilment of the criteria as determined by the invitation. The current evaluation system is briefly presented in their paper. What is attempted next is the order of importance of the criteria under question, according to the analytic hierarchy process (AHP) method demands, as well as the possibility of ranking the actions as a result of the method implementation.

G. Tigas, P. Lefakis, K. Ioannou and A. Hasekioglou report that in specific sciences, such as forest policy, the need for anticipation becomes more urgent because it has to manage valuable natural resources whose protection and sustainable management is rendered essential. In their paper, a modern method has been used, known as artificial neural networks (ANNs). In order to forecast the necessary future volumes of timber in Greece, a neural network has been developed and trained, using a variety of time series derived from the database of the Food and Agriculture Organization (FAO) of the United Nations (concerning Greece) as external values and as internal value the consumer price index has been used. Comparing the results of this project with linear and non-linear econometric forecasting models, it has been found that neural networks correspond, as confirmed by the econometric indicators MAPE (average absolute percentage error) and RMSE (the square root of the percentage by the average sum of squares differences).

F. Kitsios, O. Moschidis and E. Livanis present a study that aims to gain insight into criteria (detailed market study, business/financial analysis, business/financial analysis before promotion, resource allocation) that contribute to the success of new service development (NSD) ventures in sectors of tourism economy and focusing especially on the hospitality sector. A second level analysis based on in-depth structured interviews data collected from hotel CEOs is presented. Collected data refer to NSD processes as implemented in their organisations. Correspondence analysis is being used to analyse exploratory study's results. The presentation layer of the analysis is given in the form of factorial axes and their functions. In conclusion, this study identifies service innovation strategies for hotels to gain competitive advantage. Due to the lack of capitalised

knowledge on the pathways of new service development, such projects are prone to high failure rates.

Y. Siskos, V. Rodios and N. Tsotsolas discuss about tourist satisfaction that refers to the emotional state of tourists after exposure to the opportunity or experience. Experience can be regarded as the individual's intention to create a situation whereby he gains satisfaction. As a result, a tourist's satisfaction is determined by factors or criteria that many times are beyond the capabilities of the tourism industry to affect. The objective of their paper is to propose a model of tourist satisfaction based on five main satisfaction criteria: accommodation, catering, travel/transportation, tourist attractions/recreation and infrastructure. These criteria are aggregated through an additive value function which is inferred from the satisfaction judgements of a set of tourists with the use of the MUSA multi-criteria method and software. The paper also presents a case study application to tourists' satisfaction with the popular visited Greek tourist destination of Skopelos Island. The findings of the study indeed revealed that first priority should be given to the improvement in the travel and transportation of the Skopelos prefecture. On the other hand, accommodation for foreigners and infrastructures for Greek tourists were found to be the region's competitive advantages.

S. Polyzos and S. Niavis report that during the last years there was rapid development in the world port industry which is considered to have resulted from the increase of universal trade. The key to the development of each port is its adaptability to the earliest developments and its resistance to the increasing competition. The influence zones of each port are characterised by instability, while each port authority aims at the creation and exploitation of competitive assets, setting store on specialisation and increase of productivity of each port's functions. The aims of their study are the comparative efficiency evaluation of ports in the Mediterranean with the use of DEA analysis, the exploitation of the factors that affect ports' efficiency using a second-stage Tobit analysis and the potential of each port in the era of larger container volumes attraction. Their study will focus on the ports which display or are able to display significant achievement in transhipment movement.

In the final paper of this issue, E. Stiakakis and A. Sifaleras present a paper about a case study on how data envelopment analysis (DEA) and analytic hierarchy process (AHP) could be combined to produce priority rankings for a set of companies. The shortcomings of each method, when exclusively used to deal with multiple criteria decision analysis (MCDA) problems, are also analysed. The dataset of this study, arising from the European Union (EU) *Industrial R&D Investment Scoreboard* (2009), consists of the top EU companies activating in the telecommunications equipment industry, which is one of the most representative information and communications technology (ICT) industries. Five criteria, namely, R&D investment, number of employees, capital expenditure, net sales, and operating profit, are used for defining priority rankings of these companies. The application of the case study indicates that the super-efficiency DEA model could be employed for ranking the companies at an initial stage; following that, ranking of the efficient companies could be attained through AHP.

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