Preface

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Shouyang Wang is a Chair Professor of Management Science of Academy of Mathematics and Systems Science and the Founder of Center for Forecasting Science of CAS. He received his PhD in Operations Research from Chinese Academy of Sciences (CAS) in 1986. He is a coeditor of 16 journals including *Energy Economics and Information and coeditor Management*. His research interests include investment, and risk management, logistics and supply chain management, decision analysis and economic forecasting. He has published 22 monographs and over 200 papers in leading journals.

Increasing awareness of ecological limits to economic growth has stimulated considerable interest in recent years in developing and assessing effective methods for achieving a sustainable society. Sustainability and environmental protection have become major economic, as well as societal, concerns. Assessment methods and strategies have played significant roles in achieving a balance between the development of modern economies and protection of the environment, between consumption of resources and preservation of resources and between civil liberties and restraints. The purpose of this special issue is to capture the current state of assessment methodologies and strategies for achieving a sustainable society. We received an overwhelming number of submissions for this special issue. All submissions were subjected to a double blind review process. Due to page limitations for this special issue, we selected only seven papers which cover a broad range of topics on assessment and sustainable society.

The paper entitled, 'CDM sustainable technology transfer grounded in participatory in-country processes in Israel' by Karakosta, Doukas and Psarras, proposes a participatory approach facilitating decision makers' ability to assess suitable sustainable energy technologies to transfer in the developing world through the Kyoto Protocol clean development mechanism (CDM). Particular emphasis is placed on fulfilling the developing country's sustainable energy needs through identification of the most suitable low-carbon energy technologies. The results from the pilot application of the proposed methodological framework in Israel are presented and analysed.

In the paper 'Choosing a hybrid car using a hierarchical decision model', Fenwick and Daim propose an assessment methodology for evaluating alternatives for sustainable products through a case study analysis of hybrid cars. The consumer preferences for such cars were explored through use of multiple consumer types and an analytical hierarchy process. The methodology can be easily adopted by manufacturers developing hybrid vehicles, or any sustainable products, seeking to explore the preferences of their customers.

Torras et al. propose a novel approach to the issue of sustainability in the paper 'An econometric analysis of ecological footprint determinants: implications for sustainability'. Instead of studying such individual variables as carbon dioxide emissions or deforestation rates, the paper adopts a broad-based methodology centred on the familiar ecological footprint concept. Using the data from the Global Footprint Network, the authors estimate the ecological deficit for over 150 countries, which they argue is a suitable indicator of sustainability at the national level. The authors conduct an econometric analysis seeking to find socioeconomic determinants of both the ecological footprint and the ecological deficit. They conclude that more economically open

countries are more likely to be on an unsustainable course. The results are somewhat more ambiguous for the other explanatory variables tested: income, income inequality and power equality.

In the paper 'Conditional eco-efficiency measure from the perspective of pollution emission firms', Yang et al. introduce a new conditional eco-efficiency measure with the concept of emission trade from the perspective of pollution emitting firms with constraints on profit and pollution goals. About 32 paper mills along the Huai River in China are evaluated using the proposed measure. The authors conclude that the eco-efficiency measures in the literature are more popular than the proposed measure, but the proposed measure could be more accepted by pollution emitting firms. The authors also discuss the sensitivity of eco-efficiency with some varying parameters. Many practical suggestions and feasible strategies are provided to those pollution emitting firms and local governments.

Farid, El-Khouly and Barnes, in the paper entitled 'Institutional context for entrepreneurship in Arab countries', apply Busenitz et al.'s (2000) country institutional profile survey to four Middle Eastern Arab countries in order to explore how their entrepreneurial context is conductive to the development of new business. To more thoroughly understand the entrepreneurship environment of these countries, the research matches the institutional profile of these countries with other quantitative data about family business and data from international reports. The results indicate differences in the overall institutional profile and in most of the dimensions among the four Arab countries. It is argued that leaders and regulatory institutions are expected to play a prominent role in entrepreneurship development in Middle Eastern countries. In addition to succeeding at specific stages of business development, countries' economic institutions face the challenge of managing the transition to the next stage of development.

Gomes et al., in their paper 'Technological innovation management for sustainable development and competitiveness in the internationalisation context', examine how management practices regarding technological innovations that take social and environmental responsibility into account influence companies' internationalisation process. They propose that the company's international success and degree of competitiveness are based on its offering innovative technology solutions that show a commitment to the environment. The study identifies important elements in an emerging knowledge area in the field of management science.

The paper entitled 'Integrated life cycle management of aggregates quarrying, processing and recycling: definition of a common LCA methodology in the SARMa project' by Blengini and Garbarino analyses one of the main outcomes obtained from the European Union sustainable aggregates resource management (EU SARMa) project (2009–2011) focused on sustainable supply of building aggregates. SARMa involves 14 partners from 10 member states of South-East Europe and many observers and stakeholders in the EU27. A common methodology was proposed and implemented to boost adoption of LCA in the aggregate industry, encouraging the joint management of quarrying, processing and recycling through the integration of three interdependent life cycles: project, asset and product life cycles. The proposed guidelines and schemes for data collection and elaboration will assist public and private decision-makers in Member States to achieve the goal of the increase of recycling of construction and demolition waste to at least 70% by 2020, thus contributing to making Europe a recycling society.

We do hope this special issue can serve as a fine reference for researchers and practitioners on assessment and sustainable society. Comments, criticisms and suggestions are welcomed by the editors of this special issue.

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All submitted papers were peer-reviewed by at least two referees. Based on referee reports and the guest editors' own reviews, seven revised papers were accepted. The guest editors would like to thank the reviewers for their hard work, time and valuable comments and suggestions that make this special issue possible. This work was supported in part by the National Natural Science Foundation of China (Grant No. 70731003).