

# Preface

One of the important issues in developing sustainable management strategies is the assessment of the sustainability of business operations and an organization's overall environmental performance. The concept of sustainability is multi-faceted and interdisciplinary by nature. To evaluate sustainability in quantitative terms, a large number of indicators, processes, and their interrelations must be taken into account and both present and future values of various indicators must be generated. Traditionally, sustainability is assessed based on a single aspect and using isolated indicators. The urgency to provide an integrated sustainability assessment is well understood, while quantitative methods for such assessment are yet to be developed. It is necessary to identify and bridge gaps between quantitative indicators of different aspects of sustainability for an integrated sustainability appraisal.

This volume presents original research papers on the state-of-the-art in sustainability appraisal, including the development and application of sustainability indices, quantitative methods, multi-criteria optimization models, and frameworks for evaluation of an organization's environmental performance, as well as eco-efficiency approaches leading to business process re-engineering and modern trends in environmental reporting. By its scope, the book is intended for a broad audience from the academia and the industry and can be of interest for environmental researchers, business managers and process analysts, information management professionals and environmental decision makers who will find valuable sources of information for their work-related activities.

The book showcases contributions of geographically dispersed authors from Europe, North America, and Asia. It is a clear indication of a growing interest in green economy and international collaboration on the issues of sustainable development. The chapters in the volume explore international approaches to sustainability assessment as well as their country-specific applications. The high scientific quality of the chapters was assured by a rigorous double-blind review process implemented by the leading researchers in the field from Australia, Denmark, Canada, Germany, Italy, New Zealand, Poland, Spain, United Kingdom, and USA.

The volume is published in the EcoProduction series and, as one of its milestones, aims to disseminate new ideas and motivate future developments for integrating sustainability concepts into product systems.

Our project would not be successful without its key participants—Authors and Reviewers. We would like to thank all researches who responded to the call for chapters and submitted manuscripts to this volume for their interest in the project. Although not all of the received papers appear in this book, the efforts spent and the work done for this project are very much appreciated. We would like to thank all authors of the chapters in this book for their hard work on manuscripts under tight deadlines and high quality of the contributions presented.

We are grateful to our reviewers whose names are not listed in the volume due to the confidentiality of the process. Their voluntary service and insightful comments helped the authors to improve the quality of the manuscripts as well as to make editorial decisions on each chapter.

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