

Preface

This book presents selection of contributions on strategic and operational aspects which are important in order to improve the efficiency in sustainable supply chain. Efficiency allows comparing the outputs of actions taken in the supply chain in relation to the resources which were used to perform certain processes. Comprehensive analysis of efficiency requires both an operational data relating to technological process, supported by assist processes and service, and the data generated by an information system in order to ensure their reliability and timeliness. For this reason, the efficiency analysis should ultimately affect the logistics process, taking into account both the material flow and information flow, as well as the aspects of supply chain management and existing feedback.

This book covers both qualitative and qualitative approaches to the efficiency improvement in sustainable supply chain. It might be valuable to both academics and practitioners wishing to deepen their knowledge for efficiency assessment in sustainable supply chain.

The authors' contributions are divided into two parts, as follows:

- efficiency in sustainable supply chain—strategic aspects and
- efficiency in sustainable supply chain—operational aspects.

Part I of this book focuses on the improvement of processes in supply chain at the strategic level. The authors of the Chapter "[Sustainable Supply Chain in Forming Environmental Macro Responsibility](#)" discuss how the macro sustainable policy can be implemented to improve a company's supply chain operation and minimization of the use of non-renewable resources. Chapter "[The Transformation of Supply Chains in Closed-Loop Supply Chains](#)" analyses the selected aspects of the decision-making process which leads to closing the material flow in the supply chain. Chapter "[Innovative Approaches to Improve Sustainability of Physical Distribution in Dutch Agrifood Supply Chains](#)" provides discussion on how the relationship between different supply chain partners in the agrifood industry can lead to achieving improved distribution operations and meeting the sustainability goals. The next chapter follows social, business and technology trends by improving cooperation among entities operating in the supply networks in

FMCG industry. The discussion on how to make the supply chains more efficient is continued in the subsequent chapter. The authors present application of GRAI modelling approach and discuss its benefits for the improvement of efficiency of supply chain operations. The subsequent chapter highlights ecological aspects of the implementation of logistics processes in fast growing domain of e-commerce. The first part of this book is concluded with the chapter on to the issues of sustainable development of the transport sector and the definition of eco-efficiency in transport.

Part II of this book presents operational aspects of supply chain in relation to the efficiency improvement. The value chain perspective is taken, as the authors of subsequent chapters provide contribution on design, manufacturing, transport and distribution.

First issues related to eco-design are discussed. Eco-design provides an integrated approach to reduce negative environmental impact and increase energy efficiency in the whole life cycle of the products from the design, through production and use phase till recovery. Its outputs influence the efficiency of operations in the whole supply chain. The authors of the two related chapters provide discussion on the eco-design methods and present relevant case studies on different products. The subsequent chapter addresses issues related to the impact of eco-efficiency in production on availability of machines and equipment. Then, a case study on the analysis of economic and environmental effects of cooperation between enterprises and in the provision of transport is presented. The concluding chapter provides insight into efficient demand management in retailing through category management.

The good scientific quality of the chapters was assured by a rigorous blind review process.

Although not all of the received chapters appear in this book, the efforts spent and the work done for this book are very much appreciated.

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