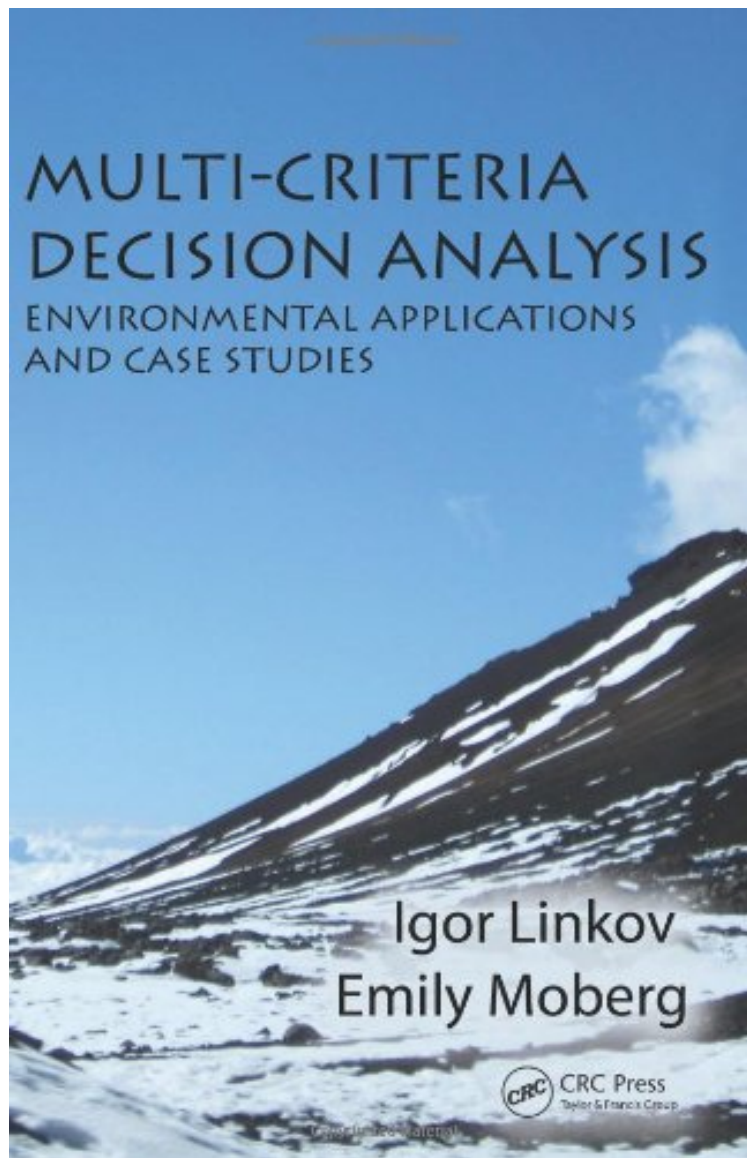


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## Multi-Criteria Decision Analysis: Environmental Applications and Case Studies (Environmental Assessment and Management)

*Igor Linkov, Emily Moberg*  
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**Igor Linkov, Emily Moberg : Multi-Criteria Decision Analysis: Environmental Applications and Case Studies (Environmental Assessment and Management)** before purchasing it in order to gage whether or not it would be worth my time, and all praised Multi-Criteria Decision Analysis: Environmental Applications and Case Studies (Environmental Assessment and Management):

0 of 1 people found the following review helpful. Great source on information on Multi-criteria decision analysis  
By Lev Virine  
This book is a very valuable source of information for anybody who is interested in Multi-criteria decision analysis. Although the book focuses on environmental projects, I would recommend this book to analyst and project managers involved in any complex projects and in any industry. Section I and II of the book includes easy to read and comprehend introduction about Multi-criteria decision making methodology. Other sections focus on various case studies. Although I'm not involved in environmental projects or research, I found these case studies quite valuable and applicable to my projects.

Environmental management is often complicated and multidisciplinary and the issues that arise can be difficult to solve analytically. Often, decision makers take ad hoc approaches, which may result in the ignoring of important stakeholder opinions or decision criteria. Multi-criteria decision analysis (MCDA) provides a framework by which these types of decisions can be made but, despite being used effectively in many fields, it is not often used in environmental management. Given the novelty and inherent applicability of this decision making framework to the environmental field, there is a need for more teaching tools for MCDA. In particular, there is a need for a case study based approach to help readers navigate the many MCDA methods and decide how to apply them to a specific case. Through a collection of case studies, *Multi-Criteria Decision Analysis: Environmental Applications and Case Studies* gives readers the tools to apply cutting-edge MCDA methods to their own environmental projects. It offers an overview of the types of MCDA available and a conceptual framework of how it is applied, with the focus on its applicability for environmental science. Taking an in-depth look at the case of sediment management, the book introduces different steps of MCDA processes from problem formulation and model development to criteria weighing and alternative scoring. The authors then explore the case using various MCDA methods, which allows readers to see clearly how the methodologies differ and gain a better understanding of the mechanistic operation of the analysis. A series of case studies in nanotechnology collectively demonstrate the application of MCDA in situations of high variability and uncertainty that require the integration of technical information and expert judgment in an area where MCDA clearly shines. The authors describe multiple decisions from risk classification to value of information analysis to the assessment of potential research and funding investments that readers may face in dealing with emerging environmental threats. Demonstrating the broad applicability of MCDA methods for different types of cases, the book presents a series of case studies ranging from oyster restoration to oil spill response. In conjunction with these cases, the book also provides corresponding decision models that are implemented by the DECERNS software and allow users to examine the same case using multiple MCDA tools. The DECERNS software and models are available for download at [www.crcpress.com](http://www.crcpress.com). Intended both as a research and teaching tool, this book inspires creative thinking when applying MCDA to complicated environmental issues.

Currently, the most important trend in environmental assessment is the increasing emphasis on informing the decision-making process. With this book, Igor Linkov and Emily Moberg provide a useful introduction to the most versatile tool for linking estimates of risks or impacts with the many other considerations that inform environmental management decisions. Glenn Suter, Science Advisor, National Center for Environmental Assessment, U.S. EPA  
Where the U.S. government is in need of effective and reliable environmental tools to guide leadership, Linkov and Moberg's MCDA is a common sense approach to balance the science, social, behavior, and economic factors associated in making complex decisions in a true systems approach seeking to find an acceptable and sustainable state of equilibrium. Colonel Dionysios Anninos, U.S. Army Corps of Engineers Chief of Staff an excellent resource for researchers, practitioners, teachers and students interested in the use of formal decision analysis methods in environmental policy. The case study format allows the reader to grapple with the different methods and the associated software in context, the explanations are clear but sophisticated, and the discussion questions are crafted to encourage real student engagement  
Timothy F. Malloy, Professor of Law, UCLA School of Law  
The book is a valuable complementary addition to textbooks on the topic as it provides a very easy to follow presentation of the main methods. The approach is based on working through case studies using the DECERNS software. I am sure that practitioners will find this book a very helpful first step into the practice of the methodology.  
Raimo P. Hmlinen, Professor, Aalto University, Finland  
I like how it gives a non-partisan treatment of all the different techniques, how it demonstrates them all on comparable problems so that it is easy for the reader to keep straight what is different and what is similar, and that the case problems themselves are realistic so it is clear how one might use this in practice.  
Jeffrey M. Keisler, President Elect, INFORMS Decision Analysis Society and Associate Professor, University of Massachusetts Boston  
In our society, environment is a common good. That is why stakeholders and citizens seek for more transparency and accountability within decision processes. The authors have offered us a set of practical experiences and have contributed to popularize multi-criteria decision analysis methods and tools by respecting the difficult equilibrium between conceptual/technical precisions and operational validation. This book will be a precious document for practitioners, regulators, researchers and students.  
Myriam Merad, PhD, National Institute for Industrial Environment and Risk (INERIS), France  
This book describes methods and applications of multi-criteria decision

analysis. But it goes beyond models and theory to provide case studies and discussions of multi-criteria decision analysis applied in specific and varying circumstances. The book provides tools. It also inspires creative thought by offering examples that can be a springboard for policy makers and other decision makers to think about its relevance and utility in the many circumstances they face. From the Foreword by Lynn Scarlett, Former Deputy Secretary, U.S. Department of the Interior, Visiting Scholar, Resources for the Future About the Author Dr. Igor Linkov is a Research Scientist and Risk and Decision Science Focus Area Lead with the US Army Engineer Research and Development Center, and Adjunct Professor of Engineering and Public Policy at Carnegie Mellon University. Dr. Linkov has managed multiple ecological and human health risk assessments and risk management projects, including application of state-of-the-science modeling and software tools to highly complex sites among them the Hudson River, Dow Midland, Natick Soldier Systems Command, and Elizabeth Mine and projects such as restoration and remediation planning, nanotechnology, and risk-based prioritization of engineering projects. He has published widely on environmental policy, environmental modeling, and risk analysis, including twelve books and over 150 peer-reviewed papers and book chapters. Dr. Linkov has organized more than 40 national and international conferences and continuing education workshops on risk assessment, decision analysis, environmental security, risk communication, nanotechnology, and modeling. The Governor of Massachusetts has appointed Dr. Linkov to serve as a Scientific Advisor to the Toxic Use Reduction Institute. Dr. Linkov is also the recipient of the 2005 SRA Chauncey Starr Award for his exceptional contribution to risk analysis and a 2010 US Army Achievement Medal for Civilian Service. Emily Moberg is a student at the Massachusetts Institute of Technology studying Biological Oceanography. Her undergraduate work was in Environmental Engineering and her interests lie in environmental processes and ecology. She has done work at the University of Pennsylvania, with the US Army Corps of Engineers, and at the Woods Hole Oceanographic Institution. Her work with the US Army Corps of Engineers has allowed her to focus more on risk analysis and the management of environmental concerns, which she hopes to apply later in her career.