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Nota di contenuto	Part 1: General issues and interdisciplinary approach to deep-sea mining -- Chapter 1: Deep-sea mining and the water column – an Introduction -- Chapter 2: Interdisciplinary approach to Deep Sea Mining - with an emphasis on the water column -- Part 2: Engineering concepts for deep-sea mining, ore handling and processing -- Chapter 3: Contemporary Technological Progress in Deep Sea Mining -- Chapter 4: Handling of bulk solids in a marine environment, from seabed to shore -- Chapter 5: Considerations for using Polymetallic Nodules as alternative metal extraction resource: focus on energy related applications -- Part 3: Approaches to sea surface and water column monitoring -- Chapter 6: Understanding deep-sea turbulence for environmental impact assessments -- Chapter 7: Turbidity at the source: aiming for minimized sediment dispersion during deep-sea mining -- Chapter 8: Applicability of satellite data in the selection of protected areas within REMP- Chapter 9: Assessment of possible

environmental impacts using flow-cytometric analysis of metal toxicity in marine phytoplankton -- Part 4: Regional assessment of water column characteristics and management -- Chapter 10: Atmospheric and oceanographic characteristics of the BGR exploration area in the CCZ and model simulations of suspended sediment transport -- Chapter 11: Ocean current observations throughout the water column in the Clarion-Clipperton Fracture Zone, tropical North Pacific -- Chapter 12: Biogeochemistry of the South Indian Ocean – Water Masses, Nutrient Distribution, and Sinking Particulate Matter -- Chapter 13: Multilevel assessment and options for the management of cumulative impacts on pelagic ecosystems in the north-eastern tropical Pacific Ocean -- Chapter 14: Marine mammal communities and human activities in the north-eastern tropical Pacific: Conservation and management strategies -- Part 5: Legal, policy and economic issues of deep-sea mining -- Chapter 15: The water column and seabed mining in the Area – selected environmental legal issues -- Chapter 16: Economic policy considerations for deep-sea mining -- Chapter 17: A Comparative Economic Scenario of Nodules Mining in Pacific and Indian Oceans, Associated Challenges and Their Prospects -- Chapter 18: Economic potential of polymetallic nodules mining.

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### Sommario/riassunto

This book focuses on general issues of deep-sea mining for seafloor mineral deposits, as well as the scientific, technical, legal and policy issues related to impacts on the water column. The topic is a growing area of significance due to the ongoing conversations on this issue in the world community, in view of the large-scale consequences resulting from operations of different components of deep-sea mining systems. The chapters are divided in five sections, and are contributed by highly acclaimed scientists, technologists, lawyers and administrators who have decades of experience working on these topics. The information compiled in the book is expected to serve as an important reference for all stakeholders including researchers, contractors, mining companies, regulators and NGOs involved in deep-sea mining and marine environmental conservation. Section 1 provides an overall view of the current status of deep-sea mining and issues related to the water column. Section 2 looks at the engineering considerations for technology related to mining, handling of bulk solids in the marine environment, transporting the ores from seabed to shore as well as processing of deep-sea minerals. Section 3 discusses various approaches for assessment of impacts of deep-sea mining on the water column. Section 4 assesses the chemical, physical and biological characteristics of the water column in different oceans of the world. Finally, section 5 deals with legal, policy and economic aspects of deep-sea mining.

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