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International Marine Environmental Law, Institutions, Implementation and Innovations is a collection of papers that describes and analyzes existing and emerging issues faced by nations and international lawyers in protecting one of the world's most valuable ecosystems: water. Water is an essential element of human life, and it has been used without restriction for so many years that constraints are now imperative to ensure its continued availability for all. The law of the sea initially focused on the sharing of this vast resource by nations, and is well established by both codified and customary international law. In contrast, marine environmental law is an emerging field, which must be reconciled with the traditional law governing the seas.

This book is a product of the International Conference on Marine Environmental Law organized by the GAUSS² - Institute for Environmental Protection and Safety in Shipping in Bremen, Germany on its fifth anniversary in April 2002. This collection of thought provoking papers highlights the need for an integrated management of the marine environment where, science, laws, policies and institutions complement each other in developing an effective mechanism to protect our complex and valuable marine ecosystem. In their papers on marine environmental law, the authors examine the institutional challenges to achieving such an integrated management, and provide thoughtful ideas in meeting the challenges. The chapters in the book may be classified under four broad categories: treaties and dispute settlement, implementation, enforcement, and scientific aspects.

The Constitution of the Law of the Seas – United Nations Convention on the Law of the Seas [UNCLOS],³ is the starting point for most discussions regarding the law of the sea. *International Marine Environmental Law* uses the Convention in the analysis of marine environmental protection issues. The development of marine environmental law first emerged during the Torrey Canyon incident in 1968, when the oil carrying ship, Torrey Canyon, ran aground and caused an oil spill that contaminated miles of shoreline of England and killed many species of marine life. The importance of protecting environment, including marine environment gained strength at the 1972 United Nations Conference on the Human Environment held in Stockholm. In this context, the idea that oceans were the common heritage of

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² *Gesellschaft für Angewandten Umweltschutz und Sicherheit im Seeverkehr.*

³ 10th Dec. 1982, U.N. Doc. A/CONF. 62/122, (entered into force on 16 November 1994), reprinted in 21 I.L.M. 1261 (1982).

mankind also began to develop and manifested in the preamble to UNCLOS.⁴ In the introductory chapter, Krischner summarizes the *International Convention for the Prevention of Pollution from Ships*, major marine institutions, such as the International Maritime Organization (IMO) and World Meteorological Organization (WMO), and the main issues discussed in following chapters.

An analysis of the basic international laws and institutions lead to complex and specific issues of implementation of legal obligations, dispute settlement, enforcement and institutional mechanisms. The first three chapters focus on the legal and institutional framework of marine environmental protection. The first chapter highlights the environmental provisions of UNCLOS, including the right of innocent passage, rights in the EEZ, conditions for scientific research and coastal state rights. Referencing UNCLOS' relevant marine environmental protection provisions is useful, as other chapters of *International Marine Environmental Law* refer to several UNCLOS provisions. The discussion on dispute settlement mechanisms and the jurisdiction of courts and tribunals, specifically the International Tribunal on the Law of the Seas, are discussed in detail. In the discussion on the UNCLOS dispute settlement mechanism, David H. Anderson, a judge of the International Tribunal for the Law of the Sea (ITLOS), raises questions of the nature of marine environmental disputes, the status of flag states and the compensation for environmental damage. Special reference is made to the Seabed Chambers of the International Tribunal on the Law of the Seas, which has mandatory jurisdiction to interpret Part XII environmental provisions of UNCLOS. The other ITLOS chambers are also discussed, including the Chamber for Marine Environmental Disputes. The advantages of this Chambers system in terms of judicial power to grant provisional measures, ability to choose the size of the bench – states may choose between a full bench or a smaller number of judges – argue for increased use of the International Tribunal on the Law of the Seas. Its history, its status as an autonomous international organization, its structure including the five chambers, the extent of its jurisdiction, state membership and its relation with the International Court of Justice are analyzed in chapter three. Some of the cases decided by the International Tribunal on the Law of the Seas are analyzed, with emphasis on the application of environmental principles and concepts in the Southern Bluefin Tuna Case. The international law on pollution and deep sea bed mining are discussed in succeeding chapters. In Chapter 9, Thomas Höfer and Lutz Mez evaluate international environmental protection treaties on transportation of mineral oil. The article includes proposals for change in policies so as to improve environmental safety and remediation of transportation incidents. The article addresses various issues resulting from treaties, state policy and stakeholder intervention. Another important area of international law – compensation for environmental damage is discussed in the final chapter of the book. Based her practical experience and insights, Louise Angélique de La Fayette explains the limitations of both UNCLOS and IMO conventions in establishing rules and guidelines environmental damage compensation in the final chapter. In doing so, the author draws an analogy from compensation provisions of non-marine conventions such as hazardous waste and nuclear waste treaties. The paper argues that the problem

⁴ *Ibid.*

of compensation is compounded by the absence of definitions of 'marine environment' and 'impairment of the environment' since their absence makes damage computation difficult. The lack of an environmental damage compensation approach at the international level is contrasted and reconciled with US laws, where the damage causing party is liable for restoration costs. There is hope expressed that international rules of compensation may be revised eventually, if the measures initiated by the European Union following the *Erika* are an indication of future developments.

Institutional mechanisms, a main component of the book, are analyzed in great depth in several chapters, including those on legal aspects. Chapter four describes and evaluates the work of the International Maritime Organization (IMO) in the prevention and control of pollution from ships and its nexus between IMO treaties, such as the *Protocol relating to the 1973 International Convention for the Prevention of Pollution from Ship, 1978*⁵ and UNCLOS. The author, Augustín Blanco-Bázan, analyses the successes and failures of IMO in dealing with problems of marine pollution and specifically notes the need to regulate the increasing problem of land based pollution. A detailed explanation of the IMO structure and its committees, its decision-making process and its interaction with states and other institutions supports the argument that IMO be developed into a specialized UN agency on marine environmental protection. Michael W. Lodge examines the role of the International Seabed Authority in regulating deep seabed mining in chapter five. The Regulation on Prospecting and Exploration of Polymetallic Nodules in the Area, 2000 and its relation with UNCLOS are explained in considerable depth. The paper notes the inadequacies of existing regulations and the lack of guidelines for zoning, impact assessment, guarantees against damage and other environmental safeguards to protect the deep seabed ecosystem. The institutional value of the World Meteorological Organization for climate observation provides useful data and support for determining the effects of climate change. This role of the World Meteorological Organization and its interaction with other institutions are discussed by Iwona Rummel-Bulska in chapter six.

In addition to papers on specific institutions, the important issue of inter-agency coordination forms the theme of chapter 7. The UN response to the growing need for better coordination between the various UN agencies and the need to develop an integrated management strategy in protecting the marine environment and in achieving the larger goals of good international environmental governance, are discussed in this chapter by Moira L. McConnell. The author identifies inter-agency competition as a main barrier in achieving integrated management and draws interpretations from the work of the European Union in introducing integrated management within its system. Inter-disciplinary interaction and the current joint programmes between IMO, FAO, WHO, GEF, UNCLOS agencies and UNDP, the author argues, may mitigate this lack of coordination.

On the policy side, articles focus on the ongoing debate on flag state and port state controls. Awni Behnam and Lorenzo Schiano di Pepe in chapters 9 and 10

⁵ 17th Feb. 1978, I.M.C.O. Doc TSP/CONF/11, 1341 U.N.T.S. 3 (entered into force 2 October 1983).

discuss flag state and port state rights and responsibilities, respectively. Both discussions argue for strengthening port state control to protect the marine environment. The need for establishing a 'genuine [economic] link' between the registering ship owner and the flag state as a precondition for the operation of an open registry by flag states is Behnam's central argument. The problems of the traditional flag of convenience in implementing and enforcing marine environmental law and in fixing liability are also discussed. On the other hand, Schiano di Pepe discusses the authority of port state in ensuring legal compliance, within the framework of limited conventions such as the Montego Bay Convention and the European Union Directives. The two pronged approach of increasing port authority control while at the same time reducing flag ship convenience is advocated through these chapters.

Some contentious issues of science and policy are discussed in chapters 12 and 13 by Rainer Lagoni and Hjalmar Thiel, respectively. They discuss issues of marine environment protection in special areas like the Exclusive Economic Zone and the High Seas. The existing laws and institutions on environmental protection in these special areas are critically analyzed, in view of available scientific evidence on the threats to biodiversity in these regions. The need for providing technological and scientific support to developing countries and to educate developed countries about local knowledge is discussed by Aref Fakhry in chapter 8. Fakhry identifies the lack of faith in the international marine environmental regime among developing countries as a core problem leading to a gap between developed and developing countries as well as reduced implementation. While the capacity-building efforts of IMO in reducing this problem may be commendable, more rigorous efforts on science and technology, it is argued, are required to strengthen commitment of states to environmental protection.

Specific cases studies on international marine environmental protection in China and Germany illustrate the application of marine environmental laws at the national level. Zou Keyuan makes an analysis of the conventions acceded to by China and the corresponding national laws to comply with its international obligations. Keyuan analyzes the performance of the ministries responsible for such protection and illustrates the efficacy of China's protection programs in two specific provinces. The case study on Germany specifically addresses the regulation of aquaculture in the North Sea. Bela H. Buck and her co-authors argue in favor of adopting a balanced approach to aqua culture regulation so as to enable coastal communities to embrace an alternative livelihood. In this context, the limitations of German planning, water and nature protection laws, which limit aquaculture, are addressed. Based on existing Canadian and evolving EU laws on the subject, suggestions are made to adopt integrated coastal zone management and to develop decision support systems such as GIS.

The book clearly illustrates that protecting the marine environment is absolutely indispensable, but not always simple. The impediments of state sovereignty and institutional conflicts must be resolved so as to ensure that the future generations share this common heritage of humankind.