

Foreword

Major economic, environmental and social challenges arise in managing oceans and coastal areas. An integrated and sustainable approach to the management of marine environment is required both to be able to use marine resources responsibly for commercial and recreational purposes and to conserve resources for future generations. Forty percent of the world's population now live within 100 kilometers of a shoreline; and more so in the emerging economies of the Asia-Pacific region. The World Bank estimates that by 2025 this figure will have increased dramatically. Since oceans and seas account for 70 percent of earth's surface and are an integral part of the world's ecology and climate systems, sustainable management of ocean resources is essential for human survival.

With this in mind, on October 22, 2010, the PECC Standing Committee endorsed a PECC international project on the **Sustainable Management of Marine Resources**, proposed by FPTPEC. A series of three seminars was envisioned. New Caledonia constituency of FPTPEC hosted the first seminar, followed by second hosted in Hawaii by the East West Center and the Natural Energy Laboratory of Hawaii Authority (NELHA); the concluding seminar took place in Auckland, organized by NZPECC and the University of Auckland. Jessica Yom of the PECC International Secretariat provided invaluable support to the organizing committees FPTPEC, USAPC and NZPECC in seeing the project through from its inception to the editing of this volume.

The November 2011 Nouméa seminar focused on the protection of ocean's resources including fisheries, ocean and coastal protection regulations, and management of challenges associated with global climate change. It addressed five main issues:

- Increased vulnerability of the coastline due to climate variability, sea level rise, and increased storm activity;
- A need for more solidarity among the regional economies in addressing maritime resource protection issues;
- A need for enhanced knowledge-sharing and technological innovation;
- A need to develop new, sustainable local economic models of resource use and protection; and
- A need to reform and enhance effective governance in the management of maritime areas and resources.

The second seminar entitled, "Oceans as a Source of Renewable Energy" held in March 2012, covered four key areas:

- Development of new technologies for efficient use of marine-based energy;
- New energy sources of the sea: ocean thermal energy conversion (mainly in the Pacific), wave energy, tidal energy, the hydraulic energy, etc.;
- Means to maximize support for marine energy technologies through technical and financial cooperation of the public and private sectors; and
- Role of marine energy in the future cities and the adaptation of urban infrastructures to reduce energy use.

The final Auckland seminar built on the conclusions from the two previous seminars and added new ones. Four sessions covered the following areas:

- Marine surveillance and ways to meet the needs for deep-sea exploration while protecting the environment;
- Protection of waters and exclusive economic zones through a combination of local and international regulations;
- Maintenance of resource quality; and
- Sea routes as means of transportation.

With new technologies such as deep sea exploration and resource utilization, we are facing a new paradigm requiring research and investments for sustainable exploitation of oceans' resources. Some sources of marine minerals are more likely than others to further develop and become viable; the transition from experimentation to exploitation will then require common, internationally-recognized and accepted standards. The development of technological and financial clusters and alliances between local and multinational firms is needed to introduce high technology and undertake exploitation within an acceptable level of risk. This will provide less or least developed economies with the possibility to reap benefits from their oceans' natural resources even without having mastered the technology.

Exploitation of oceans also requires the Asia-Pacific developing economies, as guardians of the resources, to be able to control and protect the oceans from non-authorized users. New technologies are to be implemented for a better surveillance of the oceans. Nor can the legal and regulatory aspects related to access, preservation and environmental protection be neglected.

This publication presents the conclusions and proposals derived from the three seminars. Short papers based on presentations shared at the seminars are found in the second part of the publication.

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