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中国海洋可持续发展的 生态环境问题与政策研究

中国海洋可持续发展的生态环境问题与政策研究课题组 编著



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Ecosystem Issues and Policy Options Addressing the Sustainable Development of China's Ocean and Coasts

Task Force on Ecosystem Issues and Policy Options addressing
the Sustainable Development of China's Ocean and Coasts, CCICED

June, 2011

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前 言

中国是海洋大国，海洋在国家经济社会发展与民众福利改善中占有重要地位。过去的 30 年，依托海洋区位优势 and 资源优势，沿海地区成为中国对外开放先行区 and 经济最发达地区。随着海洋资源开发的不断深入，海洋经济已经成为国民经济新的增长点。2010 年，全国海洋产业增加值达到 22 370 亿元，占全国 GDP 的 5.65%。党和国家高度重视海洋事业和海洋经济发展，国民经济和社会发展规划“十五”、“十一五”和“十二五”规划纲要都对海洋资源开发、海洋经济发展和海洋环境保护做出了部署。其中，“十二五”规划纲要第十四章专章确定了“推进海洋经济发展”任务，并提出坚持陆海统筹，提升海洋开发、控制和综合管理能力的具体要求。作为一个经济领域，海洋经济首次进入了国家国民经济和社会规划体系，凸显出海洋在未来国家社会经济发展中的重要战略地位。可以说，海洋事业和海洋经济进入了一个全新的、重大转型发展时期。

21 世纪是人类全面开发、保护海洋的新世纪。胡锦涛总书记在 2007 年中央经济工作会议上指出，开发海洋是推动我国经济社会发展的一项战略任务。开发海洋资源，走海洋强国与可持续发展之路是解决我国人口众多、资源匮乏的根本出路，也是实现 21 世纪宏伟蓝图的必由之路。但是，近年来沿海区域经济和海洋经济的快速发展给近海环境带来了巨大的压力和影响，生态环境持续恶化，成为中国海洋可持续发展的制约性因素，亟须采取综合政策措施，以解决海洋可持续发展进程中累积的和正在形成的生态环境问题。在此背景下，中国环境与发展国际合作委员会（下称“国合会”）成立了“中国海洋可持续发展的生态环境问题与政策研究”课题组，组织国内外专家开展中国海洋可持续发展的重大生态环境问题研究，分析其产生的根源，提出相应的政策建议供决策部门参考。

课题研究目标和任务包括以下四个方面：（1）分析中国近海海域生态环境状况、特征，分析海洋生态环境自 1978 年以来，随着经济发展、人口增加、城市化程度加深及全球气候变化而产生的问题；（2）研究当前中国海洋生态破坏和环境污染的现状、未来发展趋势和形成的内在原因，即海洋生态环境问题的分析和诊断；（3）研究中国海洋环境管理现状，分析我国海洋生态环境管理存在的主要问题，

包括政策、法律、管理体制等方面的问题,以及产生这些问题的政治、社会、经济根源;(4)在以上研究的基础上,结合我国 2020 年全面建设小康社会的目标及 2030 年人口达到高峰期的需求,借鉴国际海洋管理的先进理念和经验,提出促进中国近海海洋可持续发展的综合管理的对策、建议和措施。

课题组由苏纪兰院士和 Peter Harrison 教授(加拿大)分别担任中方和外方组长,由唐启升院士、张经院士、洪华生教授、周名江研究员、于志刚教授和孟伟院士 6 位国内专家,以及 Meryl Williams 女士、Chua Thia Eng 博士、Carl Gustaf Lundin 先生、Ellik Adler 先生和 Per Wilhelm Schive 先生等 6 位外方专家组成课题专家组。为实现课题研究目标,课题组下设我国近海的富营养化及其生态环境问题、大型水利工程对河口和近海生态环境的影响、围填海对海岸带生态环境的影响、全球变化(含海平面上升、海洋酸化)对海洋生态环境的影响、过度捕捞与养殖开发对海洋生态环境的影响和陆源污染及其他来源污染物对海洋生态环境的影响及课题综合报告与政策建议 7 个研究专题。

本课题研究以生态系统服务理论为基础,以基于生态系统的海洋管理理念为指导原则,以影响中国海洋可持续发展的重大海洋生态环境问题为重点研究内容,以渤海为重点研究区域,并充分学习和借鉴国际先进经验。研究过程中,课题组先后组织了赴荷兰和加拿大的考察交流以及渤海问题实地调研;召开了课题研究预备会、课题启动会、4 次课题组全体工作会议、3 次中外双方专家参加的综合报告写作会和 10 余次中方专家内部研讨会,完成了 6 个专题研究报告和 1 个综合研究报告。本书共分 7 章,基本内容来源于 6 个专题研究报告和综合研究报告。

“中国海洋可持续发展的生态环境问题与政策研究”课题由国合会资助。本课题得到了国合会中外方首席顾问沈国舫院士和 Arthur Hanson 博士的全力支持,以及国合会秘书处李永红、李海英、李勇等同志的悉心指导与热情帮助,在此表示诚挚谢意!

本课题实施过程中,中方课题组全体成员及外方专家组付出了大量的劳动,搜集整理了大量数据资料,也撰写了大量文字材料,为报告的按时完成创造了条件。

同时还要感谢天津市环保局、国家海洋信息中心,以及荷兰住房、空间规划和环境部及鹿特丹港管理处、加拿大渔业与海洋部等单位在课题调研期间给予课题组的大力协助。没有他们的支持和帮助,现场调研是难以及时、高效地完成的。

编著者

2011 年 9 月

Foreword

China's ocean and coasts play a vital role in socio-economic development and in the improvement of public health and welfare. In the past 30 years, relying on their location and marine resources, coastal cities have led the way in opening the country to foreign investment; they have consequently become the most economically developed areas of China. As marine resources have become more fully utilized, the marine economy has in turn become one of the fastest growing sectors of the Chinese economy. The State and the Party attach great importance to coastal development including the intensified growth of the marine economy and marine-related industries. Both the 10th and 11th Five-Year Plan of the National Economy and Social Development included mandates on the development of marine resources and environmental protection. Moreover, the 11th Five-Year Plan includes a chapter dedicated to the development of marine industries; it proposes "the implementation of marine integrated management and the further development of the marine economy". The 16th National Congress of the Communist Party of China proposed "the implementation of ocean development"¹ and the 17th National Congress proposed "the development of marine industries".² Furthermore, General Secretary Hu Jintao in particular highlighted the intention to develop marine industries during his visit to Shandong in 2009³, placing emphasis on the utilization of marine resources based on sound science and the further nurturing of marine industries. Under the State Council, the 12th Five-Year Plan, which is now being prepared, is expected to place ocean activities and marine resources at the same level of importance as energy strategies, emphasizing the growing importance of the ocean and

1 Former President Jiang Zheming's speeches at the 16th National representative conference of the CCP (Nov. 16, 2002). Available at: <http://www.cass.net.cn/yaowen/16da/1.htm>.

2 President Hu Jintao's speech at the 17th National representative conference of the CCP (Oct. 15, 2007). Available at: http://news.xinhuanet.com/newscenter/2007-10/24/content_6938568.htm.

3 http://www.most.gov.cn/yw/200910/t20091021_73760.htm.

coasts in current national planning strategies.

The 21st century marks a new era in the conservation and protection of the world's oceans. At the same time, General Secretary Hu Jintao has made clear, at the Central Economic Work Conference in 2007, "that the development of oceans is a strategic task to stimulate our country's economic and social advancement." Therefore, given China's large population and lack of natural resources, the fundamental solution, one that meets all needs, must be based on sustainable development of China's ocean and coasts. It appears that decision-makers together with government administrators agree that this is the road to accomplish the renaissance of the Chinese nation in the 21st century.

However, the rapid social and economic development of China has created immense pressures and has led to the continued degradation of ocean and coastal ecosystems. As a result there has been a significant weakening of the provision of coastal and marine ecosystem functions and services—a major factor restricting the sustainable development of China's ocean and coasts. Consequently, there is an urgent need to modernize China's management of marine-related activities by implementing integrated policies that address cumulative and emerging marine environmental problems. Faced with these challenges, the China Council for International Cooperation on Environment and Development (CCICED) has set up the Task Force on the Ecosystem Issues and Policy Options Addressing the Sustainable Development of China's Ocean and Coasts. The Task Force's job is to bring together Chinese and International experts to investigate the ecological problems that threaten the sustainable development of China's ocean and coasts, to analyze the sources of the problems, and to propose forward-looking policy recommendations to both decision-makers and relevant government administrations.

The research conducted by the Task Force consisted of the following four elements:

To analyze the status and characteristics of China's ocean and coastal ecosystems and the marine environmental problems brought about by economic development and global climate change since 1978.

To investigate the current degree of marine ecosystems degradation, marine environmental pollution problems, and the projected future trends, causes, and corrective measures.

To examine the current status and major problems of marine management in China, including policy, law, management systems and the political, social and economic causes of these problems.

Based on the results of this research, and taking into account the goals and needs of building a moderately well off society by 2020 (and recognizing the population peak period expected to occur in 2030), integrated marine management strategies and measures to promote the sustainable development of China's ocean and coastal marine environment are recommended by drawing on advanced international marine management theories, practices, and experience.

To address the goals of this project, the subject has been divided into seven research topics:

Topic 1: Coastal eutrophication and its associated ecological and environmental problems.

Topic 2: The impacts of hydro-projects on estuaries and adjacent seas.

Topic 3: The impacts of sea enclosing and land reclamation projects on the coastal environment.

Topic 4: The impacts of sea level rise and ocean acidification on the marine environment.

Topic 5: The impacts of overfishing and mariculture development on marine ecosystems.

Topic 6: The impacts of land-based and other sources of pollution on coastal and marine environments.

Topic 7: The trends and analysis of domestic and international policy, governance, and laws, as well as new and emerging marine management directions.

This research is based on the conviction that ecosystem services must be maintained and enhanced for future generations of Chinese. It uses the principles of ecosystem-based marine management as a guide for the analysis of important marine environmental issues within China in order to facilitate the desired sustainable development of China's ocean and coasts. This work includes a focus on the Bohai Sea as an important area of interest and uses lessons learned from international examples to carry out the individual research projects.

During the research project, the Task Force organized study trips to Netherlands and Canada as well as an investigative field trip to the Bohai Sea region. It held preparatory and initiation meetings, four working meetings and three report preparation meetings, each with the participation of both international and Chinese experts. Chinese experts attended an additional ten domestic meetings, which yielded a total of six research reports. The international team also completed two international trend reports.

And a number of people contributed to the preparation of twenty-six vignettes of issues, some of which are used in their shorter form as text boxes throughout this Executive Report.

This Executive Report is primarily based on evidence provided by the six research reports created by the seven Task Groups, and it includes the combined efforts of both international and Chinese experts. All together, the report documents the environmental status, characteristics and trends of China's coastal marine environment; analyzes the causes and influencing factors of marine environmental problems within Chinese waters; predicts future pressures on these coastal environments brought about by the socio-economic development of coastal areas and, finally, integrates the results into a series of policy recommendations for the sustainable development of China's marine estate.

All of the data and information used in support of this project were obtained from formal documents or peer-reviewed sources.

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