

# 한 · 미 해양관리체제의 비교분석

Comparative Analysis of Ocean Governance:  
Republic of Korea and the U.S.

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## 머 리 말

미국은 방대한 국토(3백만 평방마일)를 지닌 국가이지만 세계에서 가장 넓은 3.4백만 평방마일의 EEZ를 보유하고 있는 해양국가이다. 또한 우리나라도 국토면적(99,291km<sup>2</sup>)의 4배에 해당하는 관할해역(447,000km<sup>2</sup>)과 긴 해안선(11,542km)을 지니고 있다. 양국이 보유한 넓은 해양은 사회, 경제, 문화, 군사 등 해양안보 측면에서 많은 기회를 제공하지만 동시에 효율적 관리를 위한 책임도 부여하고 있다.

비록 30~40년간의 시차는 있으나 그동안의 양국의 해양관리에는 많은 유사점이 있다. 미국은 일찍이 1960년대에 연안의 난개발, 해양환경오염, 연안접근의 제한 등 주요 이슈를 경험하고 이에 대한 대처를 하여 왔다. 1967년 의회가 설립한 스트라톤(Stratton) 위원회는 당시 미국의 해양정책을 진단하고 향후 정책방향을 제시하도록 하였는바, 동 위원회의 권고에 의해 미국은 해양대기청(NOAA)을 설립하였다. 그러나 NOAA는 스트라톤 위원회가 권고한 통합적인 해양행정기관의 수준에 미달하였으며 통합해양정책도 수립하지 못하였다.

따라서 1971년 미국 의회는 국립해양대기자문위원회(NACOA)를 설립하여 미국의 해양정책을 주기적으로 진단하고 향후 방향을 제시하도록 하였다. 이후 미국은 NACOA의 제안에 의해 통합해양행정기관의 설립을 지속적으로 노력하였으나 의회 내의 다양한 해양관련 상임위원회 및 소위원회의 복잡한 이해관계의 벽에 부딪혀 모두 실패하였다.

최근엔 민간차원의 퓨해양위원회(Pew Ocean Committee)와 의회차원의 미국해양위원회(USCOP)가 현재의 미국 해양정책을 진단하고 향후 방향을 제시하고 있으나 소기의 목적을 달성하지 못하고 있다. 즉, 미국은 통합된 해양정책을 수립하지 못하고 있으며, 현 해양정책도 다양한 정부기관에 의해 분산 시행되고 있다. 그러나 미국의 개별 해양관련 정책들은 모두 생태계기반관리(ecosystem-based management)에 기초한 지속가능한 개발을 지향하고 있어

많은 국가들에 모델이 되고 있다.

우리나라는 지난 40여 년간 고도의 경제발전을 이루는 동안 해양 및 연안자원을 고강도로 개발하였다. 또한 우리나라의 해양관리도 50여 개의 법률에 근거하여 다양한 부처에 분산 관리되었다. 그 결과 연안의 난개발, 해양환경오염, 연안의 인구 집중, 연안접근의 제한 등 많은 문제점이 부각되었다.

이에 따라 1996년 우리나라는 이들 분산된 해양관련 정부조직 즉 해운항만청, 수산청, 해양경찰청, 해난심판원, 수로국, 수산진흥원 등 해양관련 대부분의 부처를 통합하여 해양수산부를 설립하였는데, 이는 세계에서 가장 통합적인 해양행정조직이다.

그러나 우리나라 일반시민의 해양정책에 대한 지지는 아직 약한 편이다. 이는 우리나라 정부와 일반시민이 분산된 해양정책과 그에 따른 비효율성, 문제점, 이슈 등에 관해 미국보다 약 20~30년 정도 늦게 인식하기 시작하였기 때문이다. 그 결과 정부부처에서는 정권교체시마다 해양수산부를 해체하여 해양수산부 설립 전의 형태로 돌아가야 한다고 주장하여 왔다.

해양수산부 설립과 관련하여 우리나라는 해양관련 정책업무를 해양수산부가 관장하도록 정부조직법(GOA)을 개정하였다. 이 정부조직법에 의거 대부분의 해양관련 정부조직이 해양수산부로 통합되었다. 그러나 정부조직법은 해양수산부의 업무와 관련하여 공간적인 범위에 관하여 명확한 정의를 내리고 있지 않고 있어 해양수산부와 관련 부처 간에 관련 업무에 관하여 이견이 발생하고 있다. 예를 들어, 환경부와 건설교통부는 해양수산부의 기능은 지리적으로 연안 및 해양으로 한정되며 연안육지 내는 아니라고 주장하고 있는데, 그 결과 연안육지 내의 관련 개별 법률들은 다양한 부처에 의해 분산되어 시행되고 있다. 또한 연안 육역과 해역의 장벽은 매우 높아 이들을 통합한 생태계기반관리의 도입에 장애가 되고 있다. 대신 해양수산부와 환경부가 해양환경과 육지환경을 각각 분리하여 관리하는 이원화된 체계가 정착되고 있다.

본 연구는 우리나라보다 먼저 통합해양정책과 통합해양행정을 위하여 노력해온 미국의 해양관리체제와 미국보다 늦게 시작하였으나 세계에서 가장 통합

적인 해양행정조직을 설립하여 통합해양정책을 추진하는 우리나라의 관리체제를 비교 분석하는 연구로서 우리나라의 향후 정책방향에 많은 시사점을 줄 것으로 기대된다. 특히 지난 30~40년간 통합해양행정조직 및 통합해양정책을 위한 미국 의회 및 행정부의 전개과정을 심도 있게 분석한 내용은 통합해양정책의 타당성을 입증하고 또한 그 어려움을 대변하고 있다.

끝으로 이 연구를 공동으로 수행한 한국해양수산개발원의 조동오 박사와 미국 로드아일랜드 대학교의 Lawrence Juda 교수님께 깊은 감사를 표한다. 그리고 본 저자들은 이 연구의 보고회를 통해 많은 조언을 해주신 해양수산부 고경만 사무관과 부경대학교의 표희동 교수께도 깊은 감사를 드린다.

2006년 12월

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## ABSTRACT

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Both the United States and the Republic of Korea have substantial offshore areas under their jurisdiction, offering a combination of opportunities and responsibilities. Taking full advantage of these opportunities and meeting their national and international responsibilities requires effective governance.

While the political and administrative systems, the cultural settings, and the historical experiences of the two states are different, in both the United States and the Republic of Korea, sectoral approaches to ocean and coastal management have been tried and have proven to be inadequate. More integrated and systems-oriented approaches to ocean use management are required to take into account the interaction of multiple and increasingly intensive uses of the marine environment. Furthermore, contemporary management efforts must also factor in the human- use impacts on the ocean and coastal ecosystems that are fundamental to natural system sustainability.

In this study, ocean governance efforts of both countries, in terms of ocean policy and organization, are analyzed by consideration of significant elements such as oceans acts, institutional integration and coordination, the role of legislative bodies, integrated oceans policy, congress, budget and policy priority, and constituency.

The United States and Korea have different governmental type, the United States has a federal system and Korea has a unitary system. The legislative bodies of the two countries are also quite different. The legislative body of

the United States is bicameral and the legislative powers are dispersed among numerous committees, which make it difficult to create an integrated oceans body and establishing an integrated oceans policy. However, the legislative body of Korea is unicameral and there is only one ocean-related committee, which supports oceans policy and facilitates establishing an integrated oceans policy.

In 1970 NOAA was created on the recommendation of the Stratton Commission. However, the ocean-related jurisdictional divisions have continued because NOAA is not truly a leading agency for an integrated oceans policy. In 2004, USCOP called for the NOAA Organic Act, but it did not pass the 109th session. In 2004, the National Oceans Council was created for coordination and cooperation in the oceans policy.

In 1996, MOMAF was created by integrating several ocean-related organizations. However, the ocean-related jurisdictional divisions have continued because the other governmental agencies claim their "turf" for ocean management. The Korean government has not established any organization similar to the U.S. National Ocean Council for coordination of ocean policy. There has been strong bureaucratic resistance to this in Korea.

In 2002, the Korean government established an integrated oceans policy (Korean Oceans Policy) based on the Marine and Fisheries Development Act. However, the 2000 Oceans Act of the United States only mandates the creation of an Oceans Policy Commission, without mandating the establishment of an integrated oceans policy. The oceans-related budget has declined from a larger base in the United States, while increasing from a smaller base in Korea.

In both countries, there is in evidence of an ongoing process of evolution in ocean management, manifested in a variety of actions relating to

institutional arrangements, policy, and budgeting. This process is driven by the need to address the problems posed by human use of the oceans, problems that are increasingly recognized as being significant and requiring immediate attention. Both Korea and the United States need to take measures to accommodate the reality of an ever-changing and intensifying pattern of ocean/coastal use, increasing conflict among users, and threats to the ecosystem's sustainability that cannot be ignored without very substantial societal costs.

## 요 약

### 제1장 서론

- 미국은 3백만 평방마일이 넘는 국토를 지닌 국가이면서 세계에서 가장 넓은 3.4백만 평방마일의 EEZ를 보유하고 있는 해양국가임. 미국은 일찍이 1960년대에 연안의 난개발, 해양환경오염, 연안접근의 제한 등 주요 이슈를 경험하고 이에 대한 대처를 하여왔음
- 1967년 의회가 설립한 스트라톤(Stratton) 위원회는 당시 미국의 해양 정책을 진단하고 향후 정책방향을 제시하도록 하였는바, 동 위원회의 권고에 의해 미국은 해양대기청(NOAA)을 설립하였음
- 그러나 NOAA는 스트라톤 위원회가 권고한 통합적인 해양행정기관의 수준에 미달하였으며 통합해양정책도 수립하지 못하였음. 따라서 미국 의회는 해양정책을 주기적으로 진단하고 향후 방향을 제시할 기관으로서 국립해양대기자문위원회(NACOA)를 설립하였음
- 미국은 NACOA의 제안에 의해 통합해양행정기관의 설립을 지속적으로 노력하였으나 의회 내의 수많은 해양관련 상임위원회 및 소위원회의 복잡한 이해관계의 벽에 부딪혀 모두 실패하였음
- 최근엔 민간차원의 퓨해양위원회(Pew Ocean Committee)와 의회차원의 미국해양위원회(USCOP)가 현재의 미국 해양정책을 진단하고 향후 방향을 제시하고 있으나 소기의 목적을 달성하고 있지 못함
- 그러나 미국의 개별 해양관련 정책들은 모두 생태계기반관리(ecosystem-based management)에 기초한 지속가능한 개발을 지향하고 있어 많은 국가들에 모델이 되고 있음

- 우리나라도 국토면적(99,291km<sup>2</sup>)의 4배에 해당하는 관할해역(447,000 km<sup>2</sup>)과 긴 해안선(11,542km), 그리고 넓은 갯벌 등 풍부한 해양 및 연안 자원을 보유하고 있음
- 우리나라는 지난 40여 년간 고도의 경제발전을 이루는 동안 해양 및 연안자원을 고강도로 개발하였음. 또한 우리나라의 해양관리도 50여 개의 법률에 근거하여 다양한 부처에 분산 관리되고 있었음. 그 결과 1960년대의 미국과 같이 연안의 난개발, 해양환경오염, 연안의 인구 집중, 연안접근의 제한 등 많은 문제점이 부각되었음
- 우리나라는 해양 및 연안자원의 중요성에 대한 인식이 선진해양국에 비해 20~30년 뒤진 1990년대 들어서부터 시작되었으나 세계에서 가장 통합적인 해양행정조직을 구축하고 통합해양정책을 수립하여 시행하고 있음
- 그러나 우리나라의 해양관련 개별정책들은 미국과 같이 생태계기반관리에 역점을 두지 못하고, 정부부처 간에 정책의 조화를 이루지 못하고 있으며 또한 일부 부처 및 지방정부는 연안개발에 역점을 두고 있음
- 본 연구는 우리나라와 미국의 해양정책 전개과정과 관리제도를 비교분석함으로써 정책적 시사점을 모색하는 데 목적을 두고 있음

## 제2장 미국 해양정책의 전개

- 1960년대의 미국은 연안의 과도한 개발 및 인구집중, 갯벌의 매립, 수질 오염 및 해양서식지의 파괴, 연안접근의 제한 등 많은 문제점을 안고 있었으나 관련 정부정책은 다양한 정부조직에 의해 분산 추진되고 있었음



- 이에 따라 미국 상원은 특별위원회인 스트라톤위원회(Stratton Commission)를 설립하여 관련정책을 진단하고 향후 방향을 권고토록 하였음. 1967년 동 위원회는 보고서(Our Nation and the Sea)를 통해 당시의 해양정책을 다음과 같이 진단하였음
- 즉 당시의 미국의 해양정책은 통합적으로 추진되지 않고 다양한 정부기관에 의해 분산 추진됨으로써 책임이 분산되고, 일부 업무가 중복되며, 업무조정이 이루어지지 않는다고 지적받았음
- 위의 문제점을 해결하고 통합된 해양정책을 추진하기 위해 동 위원회는 내무부(DOI)의 수산업무, 국가과학재단(NSF)의 씨그랜트프로그램, 상무부(DOC)의 해양환경업무, 교통부(DOT)의 연안경비대(USCG) 업무를 통합하여 독립된 조직을 신설할 것을 권고하였음
- 이에 따라 1970년 닉슨(Nixon) 행정부는 해양대기청(NOAA)을 설립하였으나 연안경비대를 통합하지 않았으며 또한 해양대기청을 독립된 조직으로 설립하지 않고 상무부 산하에 두었음
  - 반면 같은 해에 환경부(EPA)는 독립된 기관으로 설립하여 위상을 강화하였음
- 그 후 미국에선 통합해양정책의 추진을 위해 해양대기청(NOAA), 연안경비대(USCG), 해사청(MARAD), 내무부(DOI) 산하의 해저석유개발(offshore oil and gas), 해저자원개발(ocean mining), 수산 및 양식업무 등을 통합한 해양부(Department of the Oceans) 또는 내무부(DOI), 농림부(DOA)의 수렵 및 토양보전업무, 상무부(DOC)의 해양대기청(NOAA) 등을 통합한 자연자원부(Department of Natural Resources)의 설립을 위한 노력이 있었으나 모두 실패하였음
- 이러한 노력들은 1971년 설립된 국립해양대기자문위원회(NACOA)의 보고서에 근거하여 의회에서 추진되었으나 60여 개에 이르는 해양관련 상임위원회 및 소위원회의 이해관계 문제로 성공하지 못하였음

- 다시 최근에는 민간부문 및 정부부문 위원회 등 두 개의 위원회에서 미국의 현 해양정책을 종합적으로 진단하고 향후 방향을 권고하였음
- 먼저 2003년 민간재단(Pew Charitable Trust)에 의하여 설립된 퓨해양위원회(Pew Oceans Commission)가 미국 의회에 제출한 보고서(America's Living Oceans: Charting a Course for Sea Change)에서 미국의 현 해양 및 연안생태계는 과도한 어업채취, 연안개발, 오염, 잘못된 관행 등으로 붕괴직전에 있으며 통합해양정책의 수립을 위한 해양정책법(National Ocean Policy Act)의 제정과 독립된 해양조직의 설립을 권고하였음
- 2000년 제정된 미국의 해양법(Oceans Act of 2000)은 미국의 현 해양정책을 진단하고 정책방향을 제시할 특별위원회로서 미국해양위원회(USCOP)를 설립하고, 동 위원회는 설립된 후 18개월 이내에 보고서를 국회 및 대통령에게 보고하고, 대통령은 동 보고서를 접수 후 3개월 이내에 해양정책 집행계획서를 국회에 제출하도록 규정하고 있음
- 동 법에 의해 설립된 미국해양위원회(USCOP)는 2004년 보고서(Ocean Blueprint for the 21st Century)를 국회 및 대통령에게 제출하였는바, 동 보고서에서 현 미국의 해양정책은 60개 이상의 국회의 각종 위원회 및 소위원회가 감독하고 있고, 20개 이상의 연방정부 및 위원회에 분산되어 있으며, 140여 개 이상의 법령에 의해 규정 및 집행되고 있어 사실상 1967년 스트라톤위원회가 진단하였던 당시와 비교하여 다를 바가 없다고 진단하였음
- 이에 따라 동 보고서는 1) 통합해양정책(Integrated Ocean Policy)의 수립과 2) 해양정책 추진을 위한 기금(Ocean Policy Trust Fund)의 설립을 권고하고 있음
- 2004년 12월 부시 행정부는 동 보고서를 접수한 후 현 미국행정부의 해양정책인 'Ocean Action Plan'을 수립하였으나, 대체로 동 정책은 과

거 정책에 비해 크게 강화된 게 없다는 것이 일반적인 평임

- 첫째, 통합해양정책의 수립을 위한 전략이 없다는 점임. 단지, 대통령 산하에 해양정책위원회(Committee on Ocean Policy)를 설립하였을 뿐이며, 동 위원회의 의장도 환경위원회(Council Environmental Quality)의 의장이 겸하도록 하였음
- 둘째, 새로운 해양정책을 위한 프로그램의 제시가 없으며, 단지 기존에 수행하고 있는 프로그램을 강조하고 있을 뿐임
- 셋째, 미국해양위원회(USCOP)가 권고한 해양정책 추진을 위한 기금 (Ocean Policy Trust Fund)에 대한 언급이 전혀 없음
- 그러나 부시 행정부는 해양대기청(NOAA)의 기능 강화를 위한 법률 (NOAA Organic Act (H.R. 4607))의 제정을 추진하고 있는바, 동 법률은 해양대기청을 현재와 같이 상무부(DOC) 산하에 존치하되 해양정책의 주관기관으로 법적 근거를 분명히 하고 통합해양정책의 추진을 위한 권한을 대폭 강화하고 있음
- 그러나 위의 사항들은 타 부처와의 협의가 이루어지지 않고 의회 내의 다양한 위원회의 복잡한 이해관계로 동 법률안은 109회기(2005~2006)에는 의회를 통과하지 못하였음
- 비록 미국은 통합해양행정조직을 설립하지 못하고 또한 통합해양정책을 수립하지는 못하였지만 수산업법(Magnuson-Stevens Fishery and Conservation Act), 연안관리법(Coastal Zone Management Act), 외해 대륙붕법(Outer Continental Shelf Lands Act) 등에 의한 개별정책들은 지속가능한 개발(sustainable development)과 생태계기반 관리(Ecosystem-Based Management)를 지향하고 있음

### 제3장 우리나라 해양정책의 전개

- 우리나라는 정부수립 이후 짧은 기간 동안이지만 해양행정을 통합적으로 시행한 경험이 있음. 즉 1955년 7월 중앙행정조직으로서 상공부 내에 해무청을 두고 그 소속으로 수산국, 해운국과 시설국을 두었음. 이는 행정간소화와 통일행정을 실현하고자 교통부 해운국, 상공부 수산국, 내무부 항만시설업무를 통합하여 해무청을 신설한 것이었음. 이로써 해운·수산·해양경비, 조선, 항만공사에 관한 업무가 통합되었음
- 그러나 5.16 군사혁명 후 1961년 10월 정부기구 간소화 방침에 따라 해무청(해운·수산·해양경찰 행정체제)을 폐지하고 해당업무를 3개 부처로 분산시켰는데, 해운업무는 교통부, 수산업무는 농림부, 해양경찰업무는 내무부로 이관하였음
  - 1975년 12월 31일 정부조직법 개정(법률 제2886호)으로 건설부 관장 항만건설업무와 교통부 관장 항만운영 및 해운업무를 통합 관장토록 교통부 장관 소속하에 항만의 건설 및 운영과 해운에 관한 업무를 관장하는 항만청을 신설하였으며, 1977년 12월 16일 항만청의 명칭을 해운항만청으로 개정하여 해운과 항만의 2대 기능을 관장하도록 하였음
  - 수산업이 전체산업 중 차지하는 비중이나 잠재성을 보아 강력한 수산행정을 수립·집행하는 독립적 행정기구가 마련되어야 하고, 수산업의 근대화 및 개발을 위한 제반시책의 집행과, 현안문제인 한·일 어업협정의 체결에 따른 강력한 행정력이 요구되었음. 이에 따라 1966년 2월 28일 정부조직법 개정(법률 제1752호)으로 농림부의 수산국을 폐지하고 외청으로 수산청을 신설, 하부조직으로 어정국, 생산국, 시설국을 두었음
  - 1961년 해양경비업무가 내무부로 이관되고, 1962년 4월 해양경찰대 설치법(법률 제1048호)에 의거 해양경찰대를 내무부 장관 소속으로 하여 어업자원보호법에 의한 관할수역 내 범죄수사와 기타 해상경찰

에 관한 사무를 관장하게 되었음

- 1962년 경제개발계획 이후 우리나라는 비약적인 경제성장을 이룩하였으며, 이러한 경제발전에서 해양부문이 기여한 바가 지대하였음. 한국 해양수산개발원이 추정한 바에 의하면 해양부문이 GDP에 기여한 비율은 1998년 4.4%, 2000년 4.3%, 2003년 4.5%이며 2010년에는 5.3%로 증가할 것으로 예상되고 있음. 한편 해양수산부의 해양수산발전기본계획에 의하면 해양부문의 GDP 기여율은 2004년 7.0%에서 2030년 11.3%로 증가할 것으로 추정하고 있음
- 1962년부터 1996년까지 7차례의 경제사회개발계획을 통하여 우리나라는 단기간에 연안환경자원을 고강도로 이용하고 개발하였음. 1960년대, 70년대, 80년대, 그리고 1990년대 초까지 일반시민은 이러한 연안공간의 고강도 개발을 경제개발의 대가로 인식하였음
- 또한 1996년 해양수산부 설립시기까지 우리나라의 해양정책은 다른 나라와 마찬가지로 부문적이고 분산된 관리체제였는바, 수산청은 수산업 관리, 해운항만청은 해운·항만·해상안전관리, 산업자원부는 조선산업 육성의 석유·가스 개발, 건설교통부는 갯벌과 공유수면 매립, 환경부는 해양환경관리, 해양경찰청은 유류오염방제와 해사법률의 집행을 각각 관장하였음
- 연안공간의 고강도 이용 및 난개발 그리고 분산된 해양관리의 결과 연안 및 갯벌의 손실, 연안수질 악화, 연안수산자원의 감소, 수산인구의 감소, 연안접근의 제한, 산업단지 개발수요 급증, 연안관광 수요 급증 등과 같은 많은 문제점이 발생하였음
- 이와 같은 분산된 해양관리의 문제점을 해결하고자 우리나라는 1996년 통합해양행정부서로서 해양수산부를 설립하였는바, 해양수산부의 기본 골격은 해운항만청과 수산청, 해양경찰청, 수로국과 기타 해양관련기관의 통합이었음

- 해양수산부는 설립 이후 지난 10년 동안 기존의 해운·항만관리, 수산관리, 해양경비 이외에 새로운 해양정책을 개발하고 추진하였는바, 대표적인 예는 다음과 같음

## 1. 해양환경관리종합계획

- 해양수산부 설립 이전에는 해양환경보호계획이 선박으로부터의 기름유출 방지·방제에 한정되어 있었으나, 해양수산부 설립 후 육상기인 해양오염원 발생의 예방과 저감을 위해 좀더 종합적인 해양환경보전계획의 수립을 추진하였음
- 해양수산부는 1996년에 수립한 1차 해양환경보전종합계획(1996-2000)을 필두로 2차 계획(2001-2005)과 3차 계획(2006-2010) 등 3차례 5개년 계획을 연속적으로 수립하였음

## 2. 연안통합관리

- 해양수산부는 출범 이후 과거의 정부기관이 포기했던 보존을 위해 노력하였는데, 그 추진전략의 하나로 1999년에 ‘연안역관리법’을 제정하였음. 이 법은 ‘국가연안관리계획’을 통해서 장래 개발과 보전의 순위, 보전지역 지정, 오염부하량관리, 일반인 접근이 보장되는 경관지역·지점 조사와 지정, 기존 연안개발계획의 조정이 필요한 지점 조사 등 다음과 같은 기본관리지침을 제시함

## 3. 갯벌보전

- 해양수산부는 1999년에 연안관리법과 더불어 습지보전법을 제정하고 ‘람사협약’(물새서식처로서 국제적으로 중요한 습지에 관한 협약)을 비준하였음. 이는 중요하고 고귀한 갯벌을 보전하고 관리하며 보수적으로

야생동식물과 생물다양성을 보전하기 위한 것이었음

- 해양수산부는 습지보전법에 의거 2006년 기준 5개 지역 141km<sup>2</sup>를 습지 보호지역으로 지정하였고 앞으로 2010년까지 13개 지역을 추가지정하기로 하였음. 또한 2006년 기준 4개 지역 71km<sup>2</sup>를 생태계 보전지역으로 지정하였음

#### 4. 특별해역 관리

- 해양수산부가 출범과 동시에 환경부에서 이관 받은 해양오염방지법은 오염상태가 심각한 지역을 특별관리해역으로 지정하도록 규정하고 있음. 해양부 설립 이전에 환경부가 울산, 부산, 마산, 광양 연안해역을 특별관리해역으로 지정하였으나 구체적인 관리계획은 수립하지 않았음
- 그러나 해양수산부는 특별관리해역의 오염수용용량과 육상기인 및 해양기인 오염원의 해양유입총량을 모니터링, 조사, 예측하고 울산, 부산, 마산, 광양과 시화·인천 연안의 육상기인 오염원을 규제하기 위해 특별관리해역관리계획을 수립하였음. 이 계획의 관리 총 면적은 해역 1,127.61km<sup>2</sup> 육역 1,065.15km<sup>2</sup>임. 한편 해양수산부는 가막, 함평, 완도·도암, 득량만의 1,172.4km<sup>2</sup> 해역과 1,716.40km<sup>2</sup>의 육역을 환경보전해역으로 지정하고 관리계획도 수립하였음

#### 5. 유류오염 관리

- 선박을 이용한 화물운송활동의 증가로 연안해수는 연간 300여건의 지속적인 유류유출사고로 오염되었음. 이 같은 유류유출은 서·남해안의 밀집된 양식장을 포함한 해양환경을 해치고 있음. 그러나 해양수산부 설립 이전의 유류오염관리는 미흡하여 국가비상계획(NCP)이나 지역비상계획(RCP)을 수립하지 않았고 대형유류 유출사고 방제자원도 부족하였음

- 그러나 해양수산부의 해양경찰청이 설립된 이후로는 2000년에 국가비상계획을, 1999~2002년에는 12개 주요 연안해역의 지역비상계획을 수립하였음. 또한 해양수산부는 유류유출사고를 효율적으로 방재하기 위해서 정유업체와 유조선 및 해운업체의 분담금으로 한국해양오염방제조합을 1997년에 설립하였음

## 제4장 한·미 해양관리 비교분석

### 1. 해양정책법

- 2002년 우리나라는 해양수산발전기본법을 제정하였는바, 이 법은 해양행정조직에 관해서는 규정하고 있지 않으며 해양정책의 수립을 규정하고 있음. 2004년 해양수산부는 이 법에 근거하여 해양수산발전기본계획(한국의 해양정책)을 수립하였음
- 미국은 2000년 미국해양법(U.S. Oceans Act)을 제정하였는바, 이 법은 미국의 해양정책의 실태를 분석하고 개선방안을 제시할 것을 규정하고 있음. 2004년 USCOP는 이 법에 근거하여 보고서(An Ocean Blueprint for the 21st Century)를 의회와 대통령에게 제출하였음. 부시 행정부는 동 보고서에 근거하여 미국의 해양정책을 수립하였으나, 동 보고서의 개선방안을 충실히 이행하고 있지 않음

### 2. 통합해양행정조직 및 범부처 협력

#### 1) 미국

- Stratton 위원회의 권고에 따라 1970년 닉슨 행정부가 NOAA를 설립하였음. 그러나 NOAA는 Stratton 위원회가 권고한 강력하고 독립된 부처로 설립되지 않고 상무성 산하에 설립되었음. 또한 NOAA의 설립에도



불구하고 미국의 해양정책은 다양한 부처에 분산되어 추진되었음

- 다시 최근 USCOP와 Pew 해양위원회가 미국의 해양정책을 진단하고 통합적인 해양정책의 추진을 제안하였음. 그러나 의회는 이 같은 권고를 이행할 입법 조치를 취하고 있지 않음
- USCOP는 NOAA를 해양정책의 주관기관으로서 인정할 수 있는 법률적인 근거를 제공하는 NOAA 조직법의 제정과 범 정부부처의 조정기구인 국가해양위원회(National Ocean Council)의 설립을 권고하고 있음. 이에 따라 해양관련 조정기구로서 국가해양위원회가 설립되었지만 NOAA 조직법은 아직까지 설립되고 있지 않음. 종합적인 해양정책을 위한 법률적 근거의 미비와 해양정책의 지속적인 분산은 미국의 통합해양정책의 추진을 제한하고 있는 주요 요소임

## 2) 한국

- 1996년 우리나라는 정부조직법을 개정하고 통합해양행정기구로서 해양수산부를 설립하였음. 개정된 정부조직법에 의거 해양관련 대부분의 정부조직 즉 해운항만청, 수산청, 해난심판원, 수로국 등이 해양수산부로 통합되었음
- 또한 동 법에 의거 해양수산부는 환경부로부터 해양환경관리업무 그리고 건설교통부로부터 공유수면매립 및 관리업무를 이관 받았음. 이에 따라 조선, 기상, 석유·가스 개발을 제외한 대부분의 해양관련 업무가 해양수산부로 통합되었음
- 1996년 해양수산부 설립 이후, 해양수산부는 해양개발기본법을 폐지하고 2004년 해양수산발전기본법을 제정하고 해양수산발전기본계획(한국의 해양정책)을 수립하였음
- 정부조직법의 개정에 의거 해양수산부는 해양환경 및 자원관리를 위한

주관기관으로 설립되었으나 건설교통부 및 농림부 등 많은 정부부처가 해양환경 및 자원의 개발을 위한 인센티브를 지니고 있음. 또한 지방정부도 지역경제 및 세원 조달을 위해 연안 및 해양개발을 위한 인센티브를 지니고 있음

- 해양수산부는 해양관련 다양한 부처들의 지원에 의해 수립되고 추진되는 해양관련 정책 및 프로그램을 위해 이들 부처들과의 협력 및 조정에 많은 노력을 하여 왔음. 이러한 정책 및 프로그램의 예로서 해양환경관리종합계획, 특별해역관리계획, 시화호의 매립지 이용계획, 강·호수·해양의 국가방계계획 등이 있음. 그러나 우리나라는 미국의 해양위원회와 같은 해양관련 범부처의 협력 및 조정을 위한 위원회는 설립되어 있지 않음

### 3. 입법기관의 역할

- 일반적으로 해양정책에 관하여 고려할 때 행정부에 관하여 논의를 주로 하나 의회의 역할도 중요하게 고려하여야 함. 의회는 입법권한과 예산안 승인권을 가지고 있음
- 미국의 의회는 상원과 하원의 이원제임. 미국 의회에는 해양관련 60여 개의 상임위원회 및 소위원회가 140여 개의 해양관련 법률에 기초한 20여 개의 연방정부 부처 및 위원회의 책임사항을 감독하고 있음. 의회의 다양한 상임위원회 및 소위원회는 통합해양정책의 수립에 많은 장애요소가 될 수 있음
- 미국에 비해 한국은 단일 의원제도를 채택하고 있으며 해양관련 상임위원회도 하나임. 1996년 한국 의회는 17개 상임위원회 중의 하나로서 농림해양수산위원회를 설립하고 해양관련 법률을 제·개정하고, 정책 및 예산 등을 심의할 수 있는 권한을 부여하였음. 동 위원회는 연안지역에서 선출된 의원 약 20여 명으로 구성되어 있음. 설립 후부터 동 위원회는 해양관련 법률의 제정과 지속가능한 해양 개발에 많은 지원을 하여 왔음

- 또한 우리나라의 의회에는 해양정책에 많은 관심을 가진 약 50여 명의 의원으로 구성된 의원포럼(Oceans Forum)이 설립되어 있음. 비록 동 포럼은 상임위원회는 아니지만 워크숍, 세미나, 전문가 토론회 및 발표회 등을 통해 우리나라 해양정책 수립에 지대한 역할을 하고 있음

## 4. 통합해양정책

### 1) 미국

- Stratton 위원회 보고서는 장기적이고 통합적인 국가관리가 필요하다고 주장하였으며, Pew 위원회와 USCOP의 양 보고서는 해양 및 연안지역을 ‘시스템’적으로 고려하고 그 시스템의 상이한 부분들의 상호작용과 상호 의존관계를 이해할 필요가 있다고 강조하고 있음
- 현재 NOAA는 진정한 의미의 통합해양정책의 목적을 달성할 권한을 보유하지 못하고 있음. 따라서 새롭고 다양한 정책대안들이 상기 두 위원회에 의하여 제안되었음. 상기 두 위원회 모두 지역단위의 생태계기반관리(EBM)를 강조하고 있음. 정치적인 현실을 고려하면서 USCOP는 실질적인 정책과 제도의 점진적인 변화를 제안하고 있음. 이의 실현을 위해 의회와 정부는 필요한 재정적인 지원을 강화해야 함

### 2) 한국

- 1996년 해양수산부 설립 전 한국의 해양정책은 분산된 관리였는바, 예를 들어 수산청에 의한 수산관리, 해운항만청에 의한 해운·항만관리, 산자부에 의한 조선, 건교부에 의한 공유수면 매립 관리, 해운항만청에 의한 해상안전관리, 해양경찰청에 의한 관련법률의 집행 등이었음

- 1987년 다양한 정부부처에 의해 수행되는 분실된 해양정책의 조정을 위해 해양개발기본법이 제정되었음. 그러나 강력한 지도력과 책임있는 기관의 부재로 소기의 목적을 달성하지 못하였음. 해양개발기본법은 종합적인 해양정책의 수립보다는 주로 연구개발(R&D)에 목적을 두고 있었음
- 따라서 2002년 해양수산부는 해양개발기본법을 폐기하고 종합해양정책 수립을 위한 해양수산발전기본법을 제정하였음. 2004년 동법에 근거하여 한국의 통합해양정책인 해양수산발전기본계획이 수립되었는바, 동 계획은 해양수산부가 주관이 되어 범부처가 참여하여 수립되었음. 한국의 해양정책은 2010년까지의 실행계획과 2030년까지의 장기비전으로 구성되어 있음
- 해양수산부 설립 후의 이들 정책 및 프로그램은 지속가능개발 및 생태계기반관리 측면에서 해양수산부 설립 전의 정책들과는 상이한바, 대표적인 정책으로 연안관리, 습지관리, 특별해역관리, 해양보호구역, 해사채취관리, 해양폐기물관리, 기름오염관리, TAC 등과 같은 수산자원관리 등이 있음
- 그러나 정부조직법에 의해 한국의 환경 및 자원관리는 공간을 중심으로 이원화되어 있는바, 환경부는 육지환경을 관리하고 해양수산부는 해양환경을 관리하도록 되어 있음. 육지의 수질관리는 수질보전법에 의해 환경부가 관리하고 해양 수질관리는 해양오염방지법에 의해 해양수산부가 관리함. 습지관리 역시 육지의 습지는 환경부가 관리하고 연안 습지는 해양수산부가 관리함. 고형폐기물 역시 육지와 해양으로 이원화되어 있음. 해양자연자원관리는 해양부가 관리하고, 그 이외 모든 자연자원은 대부분 환경부가 관리함. 이러한 환경 및 자원관리의 이원화는 생태계기반관리에 장애가 되고 있음

## 5. 예산 및 정책우선순위

- 예산은 실제 정책과 프로그램을 추진하는 데 불가결하기 때문에 모든 정책분야에서와 동일하게 해양정책에서도 중요한 요소임. 그러나 예산은 한정되어 있으며, 모든 정책이 이 한정된 재원에 대해 경쟁하고 있음. 이러한 이유로 예산지원은 정부정책의 우선순위를 추정하는 하나의 방법으로 생각할 수 있음
- 미국의 해양관련 예산은 2004년에 101.99억 달러로 최고치를 기록한 후 90억 달러 수준으로 감소하였음. 2006년 회계연도의 행정부가 요구한 예산은 90.364억 달러로 2004년(94.23억 달러) 및 2005년(101.99억 달러)에 비하여 감소되었음. 또한 2010년까지의 잠정적인 예산액도 2004년과 2005년도에 비하여 감소된 수준임. 최소한 예산을 기준으로 볼 때 미국 해양정책의 정책적 우선순위는 최근 떨어지고 있는 상황임
- 반면 한국의 해양관련 예산액은 해양수산부 설립 이후 지속적으로 증가하고 있음. 즉, 해양수산부의 예산은 1997년 16억 달러에 불과하였으나 2006년 47억 달러로 연평균 8.0%의 증가율을 보이고 있음. 예산을 기준으로 볼 때 한국 해양정책의 정책적 우선순위는 계속 높아지고 있음

## 6. 해양정책의 지지

### 1) 미국

- 미국에서의 해양정책에 대한 일반시민의 지지는 특정 해양관리와 이해에 집중되어 왔음. 통합해양정책을 추진하는 데 어려움은 통합적 관리에 대한 충분한 지지의 결여에 있음. 해양관리에 있어서 갈등은 주로 단기적이고 특정한 관리로부터 발생하는 편익과 장기적인 관리정책 사이에서 발생하고 있음

- Pew 위원회와 USCOP가 권고한 생태계기반관리에 대한 높은 관심은 이러한 일반시민의 지지를 얻는 데 도움이 될 것임. 이는 모든 해양개발 및 이용행위는 상호 영향을 미치고 궁극적으로 우리 인류가 의존하는 자연시스템에 누적적으로 영향을 미친다는 점이 점점 분명해지고 있기 때문임

## 2) 한국

- 우리나라의 해양정책에 대한 일반시민의 인식은 해양수산부 설립 전 일련의 해양사고로부터 시작되었으며, 해양수산부 설립 후 일련의 정책에 의해 확고해지고 있음
- 해양수산부 설립 전 서해 횡리 사고와 씨프린스 호 사고는 해양안전 및 연안의 해양오염에 대한 일반시민의 인식을 갖게 하였음. 또한 연안 난개발과 육지오염원에 의한 잦은 적조발생은 일반시민의 연안수질 및 자원에 대한 인식을 높여주었음
- 최근까지 한국에서는 많은 매립이 있었으며 일반시민들은 좁은 국토와 높은 인구밀도를 고려하여 이에 대해 긍정적으로 여겼음. 그러나 시화호 매립 및 새만금 매립에 따른 시민단체의 강력한 반대는 일반시민들의 연안갯벌 및 연안의 중요성에 대한 인식을 새롭게 하였음. 또한 해양수산부 설립 자체와 설립 후의 한·일 및 한·중어업협정의 체결은 어민과 일반시민들의 해양 및 해양자원에 대한 인식을 획기적으로 증대시켰음
- 해양정책에 대한 일반시민의 지지는 이러한 일반시민의 연안 및 해양에 대한 인식의 제고로부터 시작되고 또한 해양이용관리의 추진과 해양산업의 발전과 더불어 증대되고 있음

## 제5장 결론 및 정책적 시사점

- 우리나라와 미국은 모두 넓은 관할해역을 지니고 있으며, 이들 관할 해역은 기회와 책임을 부여하고 있음. 양국은 비록 정치 및 행정적인 시스템, 문화, 역사적인 경험에 상이하지만 그동안 연안, 및 해양환경 및 자원에 관하여 분산된 관리를 하여 왔으며, 이들 결과는 비효과적이라는 것이 입증되었음
- 해양관리는 해양환경의 상호연결성을 고려하고 인간의 개발행위에 의한 충격을 중요한 요소로 간주하고 통합적이고 시스템적으로 접근해야 함. 우리나라와 미국에서 해양관리를 위한 제도, 조직, 정책, 예산 등에 많은 변화가 일어나고 있는바, 이는 그동안 개발위주의 정책이 야기한 제반문제를 풀어야 하는 필요성에 근거하고 있음
- 두 국가 모두 상당한 사회적 비용 없이는 간과할 수 없는 지속적인 개발 정책, 이들 개발관련 이해상충, 생태계 위협에 대한 조치가 절실한 상태임

### 1. 미국

- Stratton 위원회, Pew 위원회, USCOP의 보고서 모두 해양관리에 대한 변화를 요구하고 필요한 조치를 위한 많은 사항을 권고하고 있음. 미국에서는 해양관리를 위한 행정조직의 변화가 많은 장애에 부딪히고 해양 및 연안의 통합관리를 위한 노력은 수산관리와 석유 및 가스개발과 같은 부분적인 정책에 역점을 두어 왔음. 시간이 경과함에 따라 이들 부분적인 관리, 즉 분산된 관리는 특정 행위가 야기하는 외부비용에 관심을 가지게 되었고 결국 하나의 개발 및 이용행위가 다른 부분에 영향을 미치는 점에 시야를 넓히게 되었음

- 공간기반의 관리에서 주목할 만한 점은 연안지역과 관련된 고려사항임. 연안해양 및 육지를 포함하여 법률적으로 정의된 연안지역은 다양한 이용, 이용에 따른 상충, 이용의 우선순위, 분산된 관리가 아닌 좀더 종합적인 관리의 필요성을 모두 고려하여야 하는 지역임. 연안관리법(CZMA)은 연안관리에 관한 국가기준, 주정부에 대한 연방정부의 인센티브, 정책적 유연성, 연방정부 및 주정부에 대한 정치적인 지원과 함께 해양관리에 관한 통합적, 생태계 기반, 지역관리를 위한 모델이 되고 있음
- USCOP는 Pew 위원회와 동일하게 연안관리법을 극찬하고 있으며, 생태계기반관리의 개념을 긍정적으로 여기고 있음. 동 위원회는 현재 미국의 해양정책의 실태를 분석하고 향후 방향을 위해 제도적, 정책적으로 예산, 파트너십에 관한 많은 권고를 하고 있음. 이러한 접근은 정치적 현실의 민감성을 고려하여 단계적인 변화를 추구하고 있음
- 제도적으로 NOAA 조직법은 의회통과를 기다리고 있는바, 동 법은 NOAA를 해양정책의 주관기관으로 규정하고 있음. 해양관련 연방정부 기관 간의 협력과 조정은 지속적으로 추진되어야 하고 연방정부와 주정부 간의 조화와 파트너십도 강화되어야 함. 연안관리법은 이러한 파트너십이 어떻게 추진되어야 하는가에 대한 모델이 되고 있음. 그리고 연안 및 해양생태계를 공유하는 주정부 간의 지역협력체계도 강화되어야 함
- 정치적인 관점에서 좀더 광범위한 목적, 바람직한 결과, 그리고 가이드라인을 설정한 국가해양정책 프레임워크가 필요함. 체사피크 만 (Chesapeake Bay)의 예와 같이 다양한 주정부의 지역협력에 대한 지원이 강화되어야 함. 국제적으로 미국도 1982년 유엔해양법협약의 비준에 대한 준비가 즉시 이루어져야 함. 동 협약에 대한 비준은 유엔해양법협약의 지속적인 발전에 미국의 역할을 증대시킬 것임
- 해양관련 프로그램에서 투자의 증대는 효과적인 해양관리에 필요한 과



학적 연구개발(R&D)에 필수임. 해양관리를 증진시키기 위한 주정부, 지역, 국가적인 프로그램 투자가 필요함. 해양관련 예산의 통합도 배정된 투자의 효과를 극대화하고 투자조정에 기여할 것임

- 이상 논의한 이외에 생태계기반관리를 위한 조치로 정치적 지원이 요구됨. Pew 위원회와 USCOP가 해양관리과정의 중요한 부분으로서 교육과 홍보를 강조하고 있는 점에 주의할 필요가 있음. 해양관리는 정부부처만의 책임이 아니며 일반시민의 광범위한 이해와 지원이 요구됨

## 2. 한국

- 최근까지 우리나라의 해양정책은 약 50여 개의 개별 법률에 의거 다양한 부처에 의해 분산 추진되었음. 이들 개별 법률 및 정책들은 관련 부처들 간에 조정되지 않고 지속가능한 방법으로 추진되지 않았음. 그 결과 해양환경 및 경제적인 측면에서 많은 이슈와 문제점들이 자주 발생하였는바, 예를 들면, 연안의 난개발, 갯벌의 멸실, 수질의 악화, 수산자원의 감소, 수산인구의 감소, 연안 접근의 제한, 과도한 산업도시개발, 과도한 연안관광개발 등임
- 1996년 우리나라는 이들 분산된 해양관련 정부조직, 즉 해운항만청, 수산청, 해양경찰청, 해난심판원, 수로국, 수산진흥원 등 해양관련 대부분의 부처를 통합하여 해양수산부를 설립하였음
- 그러나 우리나라는 해양수산부의 설립과 관련하여 미국 Stratton 위원회의 ‘Our Nation and the Sea: A Plan for National Action’, Pew 위원회의 ‘America’s Living Oceans: Charting a Course for Sea Change’, USCOP의 ‘An Ocean Blueprint for the 21st Century’와 같은 통합해양행정 수립을 위한 종합적인 타당성 조사가 결여되었음
- 또한 한국의 해양정책에 대한 일반시민의 지지는 매우 약한 편이었음. 한국 정부와 일반시민의 분산된 해양정책과 그에 따른 비효율성, 문제

점, 이슈 등에 관해 미국보다 약 20~30년 정도 늦게 인식하였음. 또한 일반시민의 연안환경 및 자원에 대한 인식은 1990년 대형 해난사고 및 정부의 매립정책 실패의 결과에 의해 시작되었음. 일반시민 및 정부부처의 해양정책에 대한 지지가 미약한 결과, 정부부처에서는 정권교체 때마다 해양수산부를 해체하여 해양수산부 설립 전의 형태로 돌아가야 한다고 주장하여 왔음

- 해양수산부 설립과 관련하여 우리나라는 해양관련 정책업무를 해양수산부가 관장하도록 정부조직법(GOA)을 개정하였음. 즉 동법 44조는 해양수산부 장관은 수산, 해운, 항만, 해양환경관리, 해양조사, 해양자원개발, 해양과학기술 연구개발, 해양안전 및 심판 등의 업무를 관장하고, 해양경찰업무를 해양수산부 장관 하에 둔다고 규정하고 있음
- 이 정부조직법에 의거 대부분의 해양관련 정부조직이 해양수산부로 통합되었음. 또한 해양수산부는 환경부로부터 해양환경업무를, 건설교통부로부터 공유수면매립 및 관리업무를 인수하였음. 단, 조선, 기상, 석유 및 가스 개발업무는 통합되지 않았음
- 그러나 정부조직법은 해양수산부의 업무와 관련하여 공간적인 범위에 관하여 명확한 정의를 내리고 있지 않음. 그 결과 해양수산부와 관련 부처 간에 관련 업무에 관하여 이견이 발생하고 있음. 예를 들어, 환경부와 건설교통부는 해양수산부의 기능은 지리적으로 연안 및 해양으로 한정하며 연안육지 내는 아니라고 주장하고 있음. 그 결과 연안육지 내의 관련 개별 법률들은 다양한 부처에 의해 분산되어 시행되고 있음
- 해양수산부는 설립 후 지금까지 연안육역 및 해역을 포함한 통합관리를 위한 많은 노력을 하였으나 성공하지 못하고 있는 상태임. 연안 육역과 해역의 장벽은 매우 높아 이들을 통합한 생태계기반관리의 도입에 장애가 되고 있음. 대신 해양수산부와 환경부가 해양환경과 육지환경을 각각 분리하여 관리하는 이원화된 체계가 정착되고 있음

- 앞으로 한국에서도 미국의 Stratton 위원회, Pew 위원회, USCOP가 시행한 해양정책에 대한 종합적인 연구를 시도하여 해양관련 정부부처 및 일반국민들로부터 해양정책에 대한 지지를 얻을 필요가 있음. 또한 미국의 해양위원회(National Ocean Council) 같은 범정부차원의 위원회를 설립하여 정부부처의 해양정책 관련업무의 조정을 담당하게 할 필요도 있음. 그리고 중앙정부(해양수산부)와 지방정부 간의 해양정책 관련 파트너십을 강화해야 할 것임

# Chapter I

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## Introduction

While ocean use management problems surfaced earlier, it was in the mid- to late 20th century that they emerged full fledged. This was due to a confluence of factors including increased demand pressures for food, energy, and other ocean resources of a growing world population and the development and employment of ever more improved and sophisticated technologies for ocean transportation and ocean resource exploitation. Among other things, the harvesting of the ocean's living resources approached or even surpassed the ability of natural systems to produce desired species and the disposal of wastes into the ocean environment threatened the sustainability of natural systems.

Increasingly, first governments and then intergovernmental organizations, as well, were called upon to address the problems that became ever more manifest with the passage of time and the intensification of human pressures on ocean resources and the broader ocean environment itself. From the vantage point of the early 21<sup>st</sup> century it is clear that, in many respects, the existing approaches to ocean use management have not been sufficiently effective and both governments and international organizations are working to improve management systems. Most particularly, current efforts are being made to develop an ecosystem-based approach to ocean use management. The purpose of this study is to examine the attempt to develop and implement new and more effective ocean management systems in the United

States and the Republic of Korea.

## **1. The Need for Ocean Use Management**

While the geographical extent of the oceans is vast and the resources they hold are plentiful, they are not limitless. Living resources have long been subject to human exploitation but they are presently being overexploited and stocks of highly desired species are in decline. Overfishing, pollution, and habitat destruction have been cited as major factors in the decline of living resources and need to be controlled. While traditional uses, such as ocean transportation and fishing have been intensifying, newer ocean uses such as the exploitation of offshore oil and gas, offshore aquaculture, and offshore windmills have occurred. With the multiple uses of ocean space comes the problem of conflict of use since different uses, such as fishing and waste disposal, can affect one another or even be incompatible. Such conflicts must be addressed. And concern is growing with the health of marine ecosystems that sustain living resources and make available a variety of other needed goods and services. Problems also arise in regard to how the resources of the oceans should be allocated and who should have the authority to make the relevant rules for behavior in particular ocean areas.

At the international level, questions of jurisdictional capacity and state responsibility have been broadly addressed by the 1982 United Nations Convention on the Law of the Sea. At the national level, jurisdictional capacity, mission objectives, and distribution of responsibility and authority for governance are often ambiguous and subject to increasing scrutiny.

Responsibility for ocean uses have been spread among different levels of government and different departments, ministries, and agencies; it is now widely understood that there is a need for coordination and harmonization of efforts to achieve effective ocean use management and to protect the ocean environment.

## **2. Changing Patterns of Ocean Use Governance**

Over time approaches to governance of ocean space have evolved. At the 1883 International Fisheries Exhibition in London, the then preeminent biologist Thomas Huxley maintained that fisheries were so abundant and prolific that there was no need for any type of fisheries management.<sup>1)</sup> Ocean management in this period was minimal or non-existent. However, as ocean use increased, this laissez-faire approach was superseded by pragmatic responses to individual problems that arose, representing a sectoral approach to ocean use management in which different ocean uses were seen and treated in discrete manner. This pattern, seen in both developed and developing states, was marked by governmental agencies and departments responsible for natural resources and ocean/coastal related activities being given authority and oversight over some particular type of activity such as logging or mining or fishing and having a narrow focus, typically concerned with increasing production of desired commodities.<sup>2)</sup>

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1) Papers of the Conferences Held in Connection with The Great International Fisheries Exhibition, Inaugural Meeting of the Fishery Congress, Address by Professor Huxley, June 18, 1883 (London: William Clowes & Sons, 1883).

2) See Jean-Pierre Lévy, "A National Ocean Policy: An Elusive Quest", 17 *Marine Policy* 75-80, 1993; Jens Sorensen and Scott T. McCreary, *Institutional Arrangements for Managing Coastal*

In situations where resources are unlimited and interactions among different user groups are nonexistent, such an approach to governance might be workable. But sectoral approaches to the use of the natural environment and its resources proved to be dysfunctional due to generated externalities and the mutual interference among different users. They have shown themselves to be inadequate to meet contemporary needs and objectives and this realization has led to conscious efforts to develop new policies and institutional arrangements for more effective ocean and coastal management.

As it became clearly evident that different uses and policies impacted one another the need for integrated, multi-use management was recognized.<sup>3)</sup> International recognition of this is seen in the 1982 United Nations Convention on the Law of the Sea which, in its preamble, stipulated that “the problems of ocean space are closely interrelated and need to be considered as a whole”<sup>4)</sup> and Agenda 21, adopted in Rio de Janeiro in 1992 by the United Nations Conference on Environment and Development, emphasized the view that “The marine environment-including the ocean and coastal areas and all seas and adjacent coastal areas-forms an integrated

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*Resources and Environments*, Washington, D.C.: National Park Service, 1990; Lawrence Juda, “Changing National Approaches to Ocean Governance: the United States, Canada, and Australia”, 34 *Ocean Development and International Law* 161-187, 2003. In regard to the situation of developing states, see Jean-Pierre Lévy, “Towards an Integrated Marine Policy in Developing Countries”, *Marine Policy* 326-342, 1988. A recent report of the United Nations Development Program, *Benguela Current Large Marine Ecosystem Programme, Transboundary Diagnostic Analysis*, Windhoek, Namibia: UNDP, October 1999 at p. 2 observes that in Angola, Namibia, and South Africa, following colonial practice, there has been a “relative absence of inter-agency (or inter-ministerial) frameworks for management of the marine environment and its resources ... [To] this day mining concessions, oil/gas exploration, fishing rights and coastal development have taken place with little or no proper integration or regard for other users.”

3) For a classic statement of the need for and meaning of integrated ocean management, see Arild Underdal, “Integrated Marine Policy: What? Why? How?”, *Marine Policy* 159-169, 1980.

4) United Nations Convention on the Law of the Sea, 1982. On line at <[www.un.org/Depts/los/convention\\_agreements/texts/unclos/unclos\\_e.pdf](http://www.un.org/Depts/los/convention_agreements/texts/unclos/unclos_e.pdf)>.

whole.”<sup>5)</sup>

Most recently, in light of increased understanding of the operation of the ocean’s natural systems, attention has focused on ecosystem-based management of ocean/coastal areas, that is, integrated management of the multiple uses of ocean/coastal space within the spatial context of ecosystems (ecologically defined space) rather than political jurisdictions (politically defined space). Ecosystem-based management is predicated on the idea that the oceans must be understood in a systems context, one in which impacts on one part of the system can cascade and impact other parts and the system as a whole. Acceptance of the ecosystem-based perspective has significant implications for governance, again at both the international and national levels. Among other things, it will require organizational and policy change to ensure that management efforts are made in a systems, rather than an individual use framework. Complicating this approach is the fact that there are multiple natural systems at different scales, nested in one another. As may be anticipated the development and implementation of ecosystem-based management systems, while widely prescribed and supported, will present challenges, both for those who use ocean space and those responsible for managing those uses.

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5) UNCED, *Agenda 21*, chapter 17. The full text of *Agenda 21* appears on line at <[www.un.org/esa/sustdev/agenda21text.htm](http://www.un.org/esa/sustdev/agenda21text.htm)>. Chapter 17 is entitled “Protection of the oceans, all kinds of seas, including enclosed and semi-enclosed seas, and coastal areas and the protection, rational use and development of their living resources”. The quotation comes from paragraph 17.1.



## **Chapter II**

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### **Evolution of the U.S. Oceans Policy**

#### **1. Background of NOAA**

Geographically, the United States is among the world's largest countries with a with a land territory of more than three million square miles. Yet, under the terms of the contemporary international law of the sea, as seen in the 1982 United Nations Convention on the Law of the Sea, an even larger area of ocean space comes under the jurisdiction of the United States; the exclusive economic zone of the United States is the world's largest, encompassing more than 3.4 million square miles of ocean, an area larger than the land area of all of the 50 component states combined.<sup>6)</sup>

Given the tremendous resource base found in this vast ocean area, in terms of both living and non-living resources, and combined with increasingly sophisticated technological capabilities and growing demand for ocean-based resources and services, the oceans present the United States with both opportunities and challenges. How will such large ocean areas be managed? And, how will the ocean environment, which sustains the living resources of the oceans and provides a variety of essential goods and services to human populations, be protected? As documented by the recent report of the U.S. Commission on Ocean Policy, the contributions to the

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<sup>6)</sup> The U.S. Commission on Ocean Policy, *An Ocean Blueprint for the 21<sup>st</sup> Century*, pp. 30~31.

American economy from ocean/coastal activities contributes over one trillion dollars annually, approximately one tenth of the gross national product of the United States.<sup>7)</sup> And, it is the coastal areas that show the fastest rate of economic growth in the nation.<sup>8)</sup> It is increasingly clear that in terms of transportation networks, resources, recreational opportunities, economic development, and physical survival, the oceans are of tremendous significance to the well being of the United States.<sup>9)</sup>

As seen in other countries, ocean management in the United States has been sectoral in nature, with management regimes developing and evolving around particular uses. Concern with this approach is not new. In June of 1966, President Johnson signed into law the Marine Resources and Engineering Development Act of 1966<sup>10)</sup> that declared it was the national policy of the United States to:

... develop, encourage, and maintain a coordinated, comprehensive, and long-range national program in marine science for the benefit of mankind to assist in protection of health and property, enhancement of commerce, transportation, and national security, rehabilitation of our commercial fisheries, and increased utilization of these and other resources.<sup>11)</sup>

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7) *Ibid.*, p. 2. In 2000, the ocean economy contributed approximately \$117 billion and economic activity in the coastal areas more than \$1 trillion to the annual gross national product of the United States, pp. 31~32.

8) For a detailed examination of economic activity and population and economic trends in coastal areas, see *ibid.*, Appendix C: *Living Near and Making a Living From the Nation's Coasts and Oceans*.

9) For example, more than \$700 billion of goods pass through American ports annually, the annual value of commercial fish catch surpasses \$28 billion and recreational salt water fishing accounts for another \$20 billion. Some 30% of the U.S. oil supplies and 25% of gas production comes from offshore areas, and while precise aggregate figures on the value of the contribution of coastal and ocean tourism and recreation to GDP are not available, this sector is said to be the fastest growing part of the ocean economy and makes multi-billions of dollars of contributions to the American GDP. the U.S. Commission on Ocean Policy, *An Ocean Blueprint for the 21<sup>st</sup> Century*, pp. 31~35.

10) P. L. 89~454.

Institutionally, this legislation created two bodies: a National Council on Marine Resources and Engineering Development<sup>12)</sup> and a Commission on Marine Science, Engineering, and Resources.<sup>13)</sup> Activation of the cabinet level Council took on significance with the enthusiastic, active, involved leadership of Vice-President Hubert Humphrey who became a strong proponent for increased governmental attention to marine affairs.<sup>14)</sup> When Pres. Nixon succeeded Pres. Johnson in January of 1969, the new Vice-President, Spiro Agnew, replaced Humphrey and it quickly became apparent that he lacked his predecessor's interest in ocean affairs. The Council was downgraded and reestablished with representation coming from lower level officials who did not have the authority to commit their agencies to new lines of action. With the exception of issues associated with the international law of the sea, ocean affairs declined as areas of priority for the Nixon Administration.<sup>15)</sup>

But in 1969, the Commission on Marine Science, Engineering, and Resources, better known as the Stratton Commission, issued its seminal report, *Our Nation and the Sea*, a document that proved to be very influential in shaping American approaches to ocean/coastal areas.<sup>16)</sup> Composed of a variety of experts in ocean matters drawn from government, academia, and industry, and chaired by Dr. Julius Stratton, former President

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11) *Ibid.*, Section 2(a).

12) *Ibid.*, Section 3.

13) *Ibid.*, Section 4.

14) On the Council's work and the active role of Vice-President Humphrey, see Edward Wenk, Jr., *The Politics of the Ocean*, Seattle: University of Washington Press, 1972, pp. 119~128 and pp. 335~338

15) *Ibid.*, pp. 154~166.

16) Commission on Marine Science, Engineering and Resources (Stratton Commission), *Our Nation and the Sea: A Plan for National Action*, Washington, D.C.: Government Printing Office, 1969. The full text of this report is available on line at <[www.lib.noaa.gov/edocs/stratton/title.html](http://www.lib.noaa.gov/edocs/stratton/title.html)>.

of the Massachusetts Institute of Technology, the Stratton Commission went beyond questions of marine science and undertook a broad examination of ocean affairs, considering, as well, the organizational capability of the federal government to respond to emerging needs relating to the management of ocean resources and the ocean/coastal environment.<sup>17)</sup>

In this latter respect, the Commission highlighted and underscored the governance problems resulting from a fragmented governmental approach to the management of ocean uses and the need for a more integrated approach to the oceans. In the view of the Commission marine activities and responsibilities were spread among a variety of executive departments (<Figure II-1>) and many were based in departments in which they were viewed as peripheral to those departments' primary missions and, thus, they did not receive the visibility and attention that they merited. Further, marine programs were isolated from one another, preventing the development of a needed comprehensive and integrated approach to the oceans.<sup>18)</sup> Consequently, the Commission recommended the creation of a new, strong agency independent of existing departments, with a broad ocean mission, that would bring together functions dispersed among different departments and report directly to the President and provide needed leadership in the civilian ocean sector.<sup>19)</sup> The composition of the Stratton

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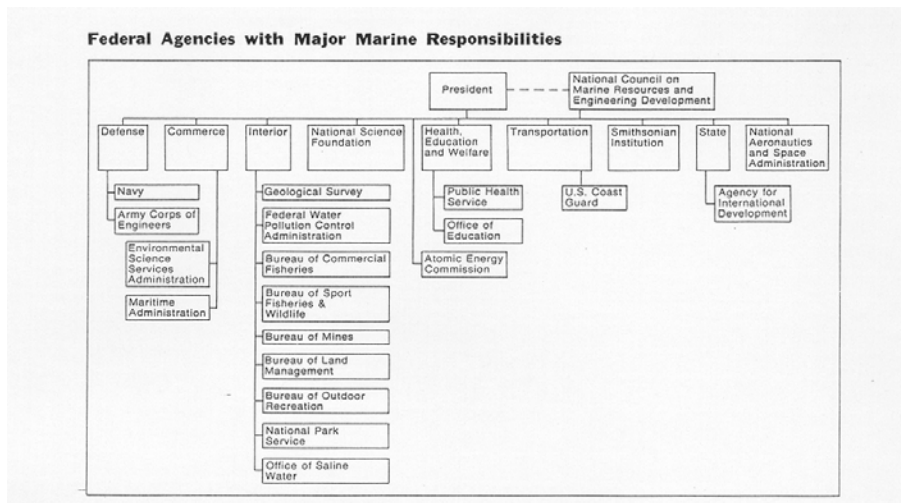
17) The foreword to the report of the Stratton Commission identifies its mandate in the following manner: "First, the Commission was asked to examine the Nation's stake in the development, utilization, and preservation of our marine environment. Second, we were to review all current and contemplated marine activities and to assess their adequacy to achieve the national goals set forth in the Act. Third, on the basis of its studies and assessment, the Commission was to formulate a comprehensive, long-term, national program for marine affairs designed to meet present and future national needs in the most effective possible manner. And finally, we were requested to recommend a plan of Government organization best adapted to the support of the program and to indicate the expected costs", *Ibid.*, p. vi.

18) *Ibid.*, pp. 228~229.

Commission's proposed National Oceanic and Atmospheric Agency is seen in <Figure II-2>.

In making its recommendations calling for the establishment of a National Oceanic and Atmospheric Agency, the Stratton Commission noted that it had considered and rejected the alternative of interdepartmental coordinating mechanisms to overcome identified problems as such mechanisms, it was believed, could not have the effectiveness of a single operating agency possessing the authority and capability that would be commensurate with the challenges that were being faced.<sup>20)</sup> In the view of the Commission, a new, inclusive agency would raise the visibility of ocean issues and be in a position to obtain needed resources.

<Figure II-1> The U.S. Ocean Management Institutions: the view from 1969

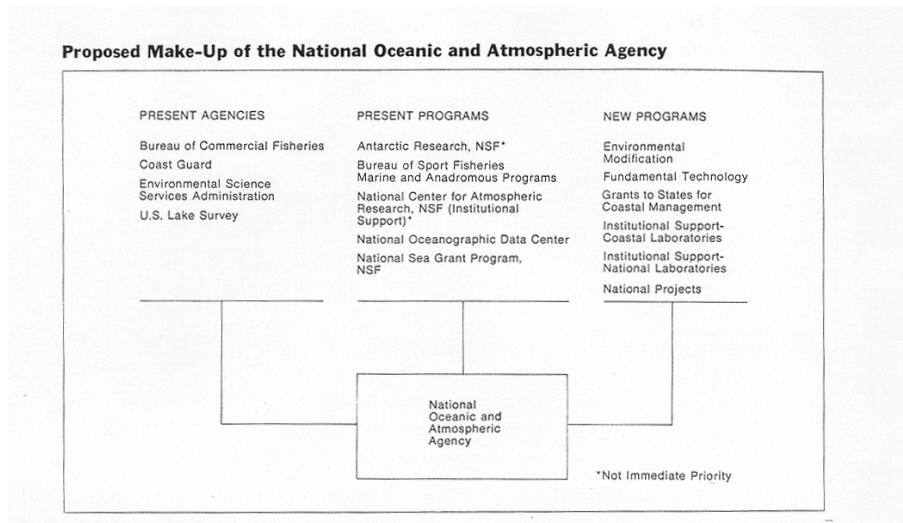


Source : Commission on Marine Science, Engineering and Resources (Stratton Commission), *Our Nation and the Sea: A Plan for National Action*, Washington, D.C.: Government Printing Office, 1969, p. 228.

19) *Ibid.*, pp. 229~234.

20) *Ibid.*, p. 230.

〈Figure II-2〉 The Stratton Commission Proposal for NOAA, 1969



Source: Commission on Marine Science, Engineering and Resources (Stratton Commission), *Our Nation and the Sea: A Plan for National Action*, Washington, D.C.: Government Printing Office, 1969, p. 233.

Subsequent to the commission report, President Nixon, by executive order, created the National Oceanic and Atmospheric Administration (NOAA).<sup>21)</sup> But, as established, NOAA was not exactly what the Stratton Commission recommended. The recommendation of the commission that the Coast Guard be placed in the new agency was not acted upon and the reality remained that many other departments and agencies would retain jurisdiction over a variety of ocean/coastal activities. Notably, NOAA was placed in the Department of Commerce and, thus, made subject to the priorities and control of that department in the shaping of NOAA's policies and budgetary requests. Further, this reorganization plan did not lay out the overall mission of NOAA nor did it establish a national oceans policy. The

21) Reorganization Plan No. 4 of 1970, 35 *Federal Register* 15627-30, 1970. Online at <[www.history.noaa.gov/legacy/act6.html](http://www.history.noaa.gov/legacy/act6.html)>.

focus of the plan appeared to be on scientific investigation and oceanic and atmospheric services rather than on ocean use management.

For some the establishment of NOAA was seen only as the start of a process of centralization of ocean authority and policy.<sup>22)</sup> Indeed, several bills were introduced in Congress calling for the establishment of a Department of the Oceans, a Department of the Environment and Oceans, or an independent ocean agency,<sup>23)</sup> but the energy crisis caused by the Arab oil embargo in the 1970s served to shift reorganization attention toward energy and natural resource concerns. In this context ocean-related programs and resources were not seen as providing an appropriate integrating theme. As noted by Robert White, a former Administrator of NOAA, “Governments are problem oriented, not place oriented”,<sup>24)</sup> so in this perspective it is not surprising that oceans were not seen as a focal point around which to organize government.

But the failure to achieve more substantial organizational change also reflected a continuing problem associated with efforts for governmental reorganization: bureaucratic bodies will mobilize to protect existing agency jurisdiction (turf) and prerogatives.<sup>25)</sup> This characteristic is seen as well in

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22) See, for example, National Advisory Committee on Oceans and Atmosphere (NACOA), *A Report to the President and the Congress, Third Annual Report*, Washington, D.C.: GPO, 28 June 1974; John Norton Moore, “Organizing for a National Oceans Program”, in *Oceans '76*, reprinted in the United States Congress, House of Representatives, Committee on Merchant Marine and Fisheries, Subcommittee on Oceanography, “NOAA Organic Act”, in *Oceanography Miscellaneous-Part I*, 95th Congress, at pp. 306~313.

23) See, for example, S. 3889, The Department of the Environment and Oceans Act, 94th Congress, 2nd session, 30 September 1976 that would have combined, among other elements, NOAA, the Environmental Protection Agency, and the Coast Guard and S. 2224, The National Oceanic and Atmospheric Administration Organic Act, 95th Congress, 1<sup>st</sup> session, 20 October 1977.

24) The United States Congress, House of Representatives, Committee on Merchant Marine and Fisheries, Subcommittee on Oceanography, “NOAA Organic Act”, in *Oceanography Miscellaneous-Part I*, 95th Congress, p. 325.

the standing committees of Congress, whose members are vigilant and wary of change that may weaken committee importance and influence. Indeed, when the Carter Administration advocated the creation of a Department of Natural Resources, that proposal was strongly opposed by Senator Herman Talmadge, Chairman of the Senate Agriculture Committee, who did not want the Forest Service moved out of the Department of Agriculture and into the proposed DNR. Likewise, Senator Hollings, Chairman of the Senate Commerce Committee, opposed a DNR that would include NOAA, removed from the Department of Commerce.<sup>26)</sup> And reorganization also raises anxieties among many nongovernmental stakeholders who are comfortable with existing institutional arrangements and political relationships.

All of these actors are well aware that reorganization has implications for their influence and also the substantive nature of future ocean and coastal policy. In the words of a study drafted by the Department of Commerce in 1978 :

Reorganization is essentially politics itself, and as such can be used to redistribute political influence, alter the substance of public policies, and signal the intention of the Government to place priority on a national goal.<sup>27)</sup>

Accordingly, it is not surprising that suggestions for institutional reorganization and change were to be carefully and skeptically scrutinized. Nonetheless, overtime, the role of NOAA did continue to evolve in

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25) For classic statements of the problems posed for change by bureaucratic politics, see Anthony Downs, *Inside Bureaucracy*, Boston: Little, Brown, 1967; and Matthew Holden, "Imperialism in Bureaucracy", 60 *American Political Science Review* 943-951 (December 1966).

26) The United States Congress, Senate, Committee on Commerce, Science, and Transportation, "National Oceanic and Atmospheric Administration Organic Act", 95th Congress, 2nd session, p. 45.

27) The U.S. Department of Commerce, *The U.S. Ocean Policy in the 1970s: Status and Issues*, Washington, D.C.: Government Printing Office, 1978, p. IX-1.



piecemeal fashion with the passage of legislation addressing matters such as the coastal zone, marine sanctuaries, marine mammals, endangered species, and fisheries that gave NOAA management responsibilities. In 1971 NOAA was funded at a level of almost \$300 million ; by 2006 NOAA had some 12,000 employees and an annual budget in the range of \$3.9 billion, accounting for approximately 60 per cent of the budget of the Department of Commerce.<sup>28)</sup> The present organizational structure of NOAA is seen in <Figure II-3>.

## **2. The National Advisory Committee on Oceans and Atmosphere (NACOA)**

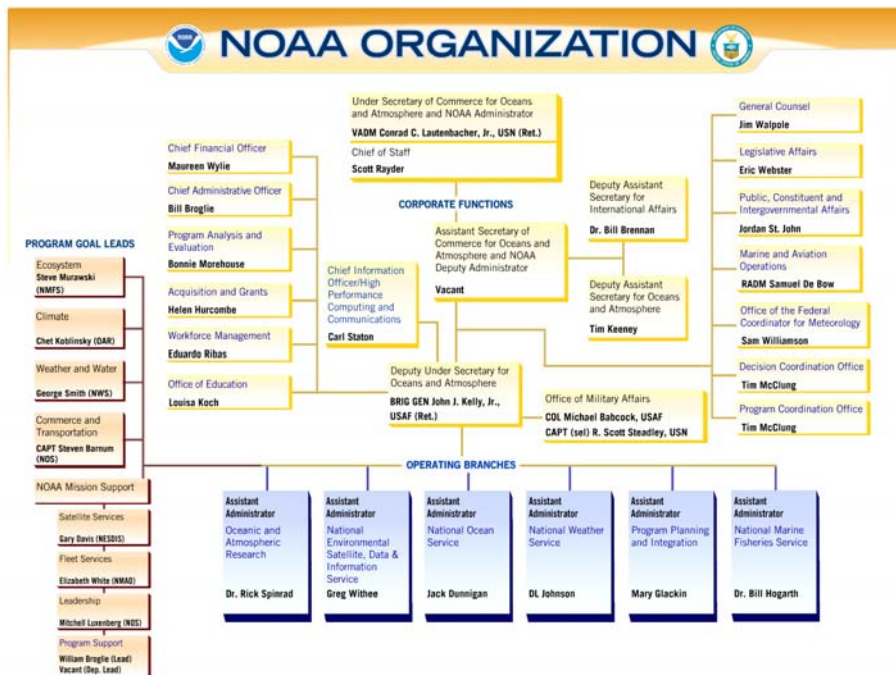
In 1971 Congress adopted legislation that created a National Advisory Committee on Oceans and Atmosphere, with membership appointed by the President and drawn from state and local government, industry, science, and academia, to provide a continuing review of ocean and atmospheric programs.<sup>29)</sup> NACOA was to advise the Secretary of Commerce with respect to NOAA and its activities and to submit an annual, comprehensive report to congress and the president assessing the overall situation of oceanic and atmospheric programs. In its second annual report NACOA questioned whether any meaningful progress had been made with respect to institutional arrangements for ocean/atmospheric affairs. As established,

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28) The United States Congress, House of Representatives, Committee on Science, "National Oceanographic and Atmospheric Administration Act", House Report 109-545, June 29, 2006. For NOAA's self-written history and description of its evolution, see the NOAA History web site at <[www.history.noaa.gov/legacy/agency\\_history.html](http://www.history.noaa.gov/legacy/agency_history.html)>.

29) P. L. 92-125 (August 16, 1971).

〈Figure II-3〉 NOAA Organization, 2006



source: NOAA web page at <[www.pco.noaa.gov/org/NOAA\\_Organization.htm](http://www.pco.noaa.gov/org/NOAA_Organization.htm)>.

NOAA was seen as unable to address adequately the problem of institutional fragmentation since, among other things, important activities such as offshore oil, gas, and minerals continued to be managed separately by the Department of the Interior and other departments and agencies such as the Environmental Protection Agency and the Corps of Engineers also had significant marine responsibilities. In the considered view of NACOA the resulting situation was that:

There are too many actors, too many separate chains of command, too many crosscutting policies, too many separate budgets, appropriations, and programs. In this confusion, national priorities have no perspective and neither the Executive Branch nor the Congress is in a position to lead effectively, much less enforce accountability for results.<sup>30)</sup>

Clearly, the development of a truly integrated approach to ocean/coastal areas continued to be elusive.

To fill this void and achieve effective coordination and regulation, NACOA, in 1973, suggested the creation of a Department of Natural Resources (DNR) that would include NOAA, as well as the Maritime Administration, the Coast Guard, parts of the U.S. Army Corps of Engineers, and pieces of the Department of the Interior, including those concerned with offshore oil and gas. It specifically rejected the use of inter agency coordinating committees, believing them to be inadequate in developing clear priorities.<sup>31)</sup> In fact, President Nixon had called on Congress to establish a Department of Energy and Natural Resources, with ocean and atmospheric affairs to be one of the five major elements of this new department.<sup>32)</sup> However, by 1974, NACOA was concerned that the Administration proposal did not provide appropriate marine focus and called, instead, for the sweeping consolidation of marine related resource management, regulation, and research activities within an existing department or agency that would embody a needed marine orientation.<sup>33)</sup>

By 1976, NACOA concluded that substantial governmental reorganization was not on the immediate horizon and now urged the establishment of a national planning effort organized around the range of uses of the sea and the development of a comprehensive national ocean policy with a coherent and coordinated program for implementation. It called for legislation to

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30) National Advisory Committee on Oceans and Atmosphere, *A Report to the President and the Congress*, Second Annual Report, June 29, 1973, p. 4.

31) *Ibid.*, pp. 4-15.

32) Letter of the Secretary of Commerce to the President of the United States, commenting on the Second Annual Report of NACOA, dated August 15, 1973.

33) National Advisory Committee on Oceans and Atmosphere, *A Report to the President and the Congress*, Third Annual Report (June 28, 1974) pp. 13-19.

establish a task force that would formulate such a policy, together with a plan and coordination mechanism, with the scope of the policy and plan to encompass :

- the use of ocean space
- development and conservation of marine and coastal resources
- protection of marine and coastal environments
- support and conduct of marine related environmental research
- training of personnel<sup>34)</sup>

This proposal of NACOA was not accepted by the Secretary of Commerce, who expressed the view that sufficient mechanisms for ocean policy coordination existed already and were preferred.<sup>35)</sup>

In its annual report in 1977, NACOA once more noted that there were many federal policies addressing individual ocean uses but a lack of a coordinating mechanism that evaluated these policies in reference to one another and the broader framework of the oceans as a whole. Accordingly, it now proposed the creation of a cabinet level, Marine Affairs Council, chaired by the Vice-President that would coordinate all marine policies, planning and operations.<sup>36)</sup> The Secretary of Commerce indicated that this proposal would be taken under advisement as the new Carter Administration undertook its own ocean policy study.<sup>37)</sup>

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34) National Advisory Committee on Oceans and Atmosphere, *A Report to the President and the Congress*, Fifth Annual Report (June 30, 1976) pp. vii and 1~4.

35) Letter of the Secretary of Commerce to the President of the United States, commenting on the Fifth Annual Report of NACOA, dated September 22, 1976, pp. 2~5.

36) National Advisory Committee on Oceans and Atmosphere, *A Report to the President and the Congress*, Sixth Annual Report (June 30, 1977) pp. 1, 9~10.

37) Letter of the Secretary of Commerce to the President of the United States, commenting on the Sixth Annual Report of NACOA, dated September 23, 1977, p. 3.

During the Carter Administration, governmental reorganization options were systematically explored through the President's Reorganization Project and the possible creation of a Department of Natural Resources was once more considered. Indeed, on March 1, 1979, the White House announced that President Carter would propose to congress the establishment of a DNR that would be built around the Department of the Interior and would include the U.S. Forest Service, to be taken from the Department of Agriculture, and NOAA, to be taken from the Department of Commerce.<sup>38)</sup> While NACOA saw some merit in such an approach it indicated that it would be strongly opposed to a reorganization that would submerge NOAA and its ocean programs and responsibilities in a land-oriented department structured around the Department of the Interior whose terrestrial concerns would overwhelm attention to ocean issues, making NOAA ineffective.<sup>39)</sup> Indeed, it was for this reason that the ranking members of the House Merchant Marine and Fisheries Committee expressed strong opposition to a DNR, fearing that a DNR would simply be an enlarged DOI and that, in this framework, ocean issues would not receive the attention they deserve. Instead, they favored the creation of an independent NOAA, along the lines

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38) Office of the White House Press Secretary, *Fact Sheet*, March 1, 1979. This document is reproduced in "Atmospheric Services and Research and a NOAA Organic Act", Report Prepared for the Subcommittee on Natural Resources and Environment of the Committee on Science and Technology, the U.S. House of Representatives, 96<sup>th</sup> Congress, 1<sup>st</sup> session, by the Science Policy Research Division, Congressional Research Service, pp. 122~124.

39) See the testimony of Donald McKernan, Chairman, National Advisory Committee on Oceans and Atmosphere, before the Senate Committee on Commerce, Science, and Transportation, "National Oceanic and Atmospheric Organic Act", 95<sup>th</sup> Congress, second session (April 6, 1978) pp. 63~68 and that of NACOA member Marne Dubs before the House Merchant Marine and Fisheries Committee, Subcommittee on Oceanography, "NOAA Organic Act", 95<sup>th</sup> Congress, second session (April 17, 1978) pp. 288~302.

originally suggested by the Stratton Commission.<sup>40)</sup>

In its 1979 annual report, NACOA called for the creation of a Department of Oceans and Atmosphere (DOA), as opposed to a Department of Natural Resources, favored by the President's Reorganization Project. NACOA's proposed DOA would combine almost all civilian agencies and functions relating to oceans and atmosphere, including NOAA, the Coast Guard, the Maritime Administration, and programs and agencies concerned with fisheries and aquaculture, marine mammals, and offshore oil and gas.<sup>41)</sup> In the view of NACOA the resulting department would provide the potential for integrated ocean program management as well as a stronger mechanism for ocean policy coordination, and also lead to the development of an integrated ocean budget.<sup>42)</sup> After consideration the Carter Administration decided that it would not pursue the DNR option, no executive action was taken on the proposed DOA, and, institutionally, the status quo situation was solidified.<sup>43)</sup>

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40) See the letter from the bi-partisan leadership of the House Merchant Marine and Fisheries Committee to the President's Reorganization Project, dated February 14, 1978 in House Merchant Marine and Fisheries Committee, Subcommittee on Oceanography, "NOAA Organic Act", 95<sup>th</sup> Congress, second session, pp. 279~283.

41) "Reorganizing the Federal Effort in Marine and Atmospheric Affairs", in National Advisory Committee on Oceans and Atmosphere, *A Report to the President and the Congress*, Eighth Annual Report (June 30, 1979) pp. I-5 to I-14.

42) Letter of Donald McKernan, NACOA Chairman, to James McIntyre, Director of the Office of Management and Budget, dated May 2, 1979 in National Advisory Committee on Oceans and Atmosphere, *A Report to the President and the Congress*, Eighth Annual Report (June 30, 1979) pp. I-23 to I-25.

43) National Advisory Committee on Oceans and Atmosphere, *A Report to the President and the Congress*, Eighth Annual Report (June 30, 1979) pp. 1~3.

### **3. Congress and the NOAA Organic Act: The first attempt**

But on its own Congress, was actively contemplating executive branch organizational arrangements to advance the development and implementation of an integrated ocean policy. In the Senate, Senator Hollings led the way, in 1977 introducing a bill entitled The National Oceanic and Atmospheric Organic Act.<sup>44)</sup> The premise of this bill was that most civilian ocean, coastal, and atmospheric programs should be under the responsibility of one lead agency, namely NOAA, that would have sufficient resources and capability to further the achievement of identified national objectives in ocean/coastal areas. Sen. Hollings' bill would provide NOAA with a statutory basis and keep it in the Department of Commerce.

The legislative placement of NOAA in Commerce was clearly an attempt to forestall any incorporation of NOAA into a new DNR that would be dominated by the Interior Department which, Hollings believed, was focused only on oil exploitation and lacked the need broad-based concern with ocean management problems.<sup>45)</sup> This concern was shared by ranking members of the House Merchant Marine and Fisheries Committee who introduced legislation in the House of Representatives similar to the Hollings bill.<sup>46)</sup> Rep. Breaux, one of the co-authors of this legislation clearly stated his fear that placing NOAA into a DNR would make NOAA

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44) S. 2224, 95<sup>th</sup> Congress, 1<sup>st</sup> session (October 20, 1977).

45) Senate Committee on Commerce, Science, and Transportation, "National Oceanic and Atmospheric Administration Organic Act," 95<sup>th</sup> Congress, 2nd session (April 6, 1978) pp. 44-45.

46) H.R. 9708.

a “stepchild” in a big department with minimal ocean concerns.<sup>47)</sup> In the last analysis, a DNR was not established, a NOAA Organic Act was not adopted, and the attention of the executive branch and congress turned to other issues.

## 1) The Oceans Act of 2000 and the U.S. Commission on Ocean Policy

Eventually, focusing events such as the 1989 Exxon Valdez oil spill, the 1992 Rio Conference on Environment and Development, the 1994 international agreement on seabed mining<sup>48)</sup> that led to the widespread adherence to the 1982 UN Convention on the Law of the Sea, the designation of 1998 by the United Nations as the “International Year of the Ocean”<sup>49)</sup>, the 1998 National Ocean Conference in Monterey, California with the participation of President Clinton and Vice-President Gore<sup>50)</sup>, and, in a more practical manner, increasingly frequent beach closings due to pollution began once more to stir interest in ocean affairs. The Oceans Act of 2000,<sup>51)</sup> passed by Congress and signed into law by President Clinton, established the U.S. Commission on Ocean Policy. Supporters of this

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47) See the testimony of Rep. Breaux before the Senate Committee on Commerce, Science, and Transportation, “National Oceanic and Atmospheric Administration Organic Act”, 95<sup>th</sup> Congress, 2nd session, pp. 54-61.

48) United Nations, Agreement Relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982. On line at [www.un.org/Depts/los/convention\\_agreements/texts/unclos/closindxAgree.htm](http://www.un.org/Depts/los/convention_agreements/texts/unclos/closindxAgree.htm).

49) United Nations General Assembly, A/RES/49/131 (10 February 1995).

50) Proceedings, National Ocean Conference, *Oceans of Commerce, Oceans of Life* (Monterey, CA: Naval Postgraduate School, June 11-12, 1998). See also the subsequent report of Richard Danzig, Secretary of the Navy and William Daley, Secretary of Commerce, *Turning to the Sea: America's Ocean Future* (Washington, D.C.: The U.S. Department of Commerce, September 1999).

51) P.L. 106-256.



legislation hoped that the work of the Commission would result in a wide scale examination of American interaction with the oceans, serve to place the oceans firmly on the public policy agenda, and create a window of opportunity for the development of a coherent, consistent, and long-range policy approach to the oceans.

As noted above, thirty one years earlier the Stratton Commission had issued its report, *Our Nation and the Sea*<sup>52)</sup> which led to the creation of the National Oceanic and Atmospheric Administration and set the stage for the passage in 1972 of the Coastal Zone Management Act<sup>53)</sup> and in 1976 of the Fisheries Conservation and Management Act.<sup>54)</sup> Taking into account factors such as population growth, the increasing uses of ocean space, the very large area of ocean space now under the jurisdiction of the United States under the terms of the 1982 UN Convention on the Law of the Sea, the complex and patchwork quality of existing regulatory and management efforts, and the cumulative environmental pressures on the oceans, Congress was of the view that at the start of the 21<sup>st</sup> century the U.S. ocean policy should be comprehensively revisited.<sup>55)</sup>

Following the 2000 year elections, President Bush appointed 16 members to the U.S. Commission on Ocean Policy from among individuals nominated by the majority and minority leadership in the House of Representatives and the Senate.<sup>56)</sup> The Commission was tasked with the

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52) *Our Nation and the Sea: A Plan for National Action*, supra note 16.

53) P.L. 92-583.

54) P.L. 94-265.

55) The U.S. Senate, Report of the Committee on Commerce, Science, and Transportation on S. 2327, Report 106-301, 106th Congress, 2nd session (May 23, 2000).

56) The membership of the Stratton Commission was composed of: Julius Stratton, Chairman of the Ford Foundation, Richard Geyer, Department of Oceanography, Texas A&M University, David Adams, Commissioner of Fisheries, North Carolina Department of Conservation and Development, Carl Auerbach, Professor of Law, University of Minnesota, Charles Baird,

preparation of a broad scale review of present and future ocean and coastal activities, the role of the federal government in ocean affairs and the development of integrated approaches to ocean/coastal activities, and the interplay of federal, state, and local authorities in the regulation and promotion of ocean uses and the protection of the marine environment. This report, with its recommendations for action, was to be sent to both Congress and the President and the President, within 120 days of receipt of this report, was to submit to Congress proposals to implement or respond to Commission recommendations for “the responsible use and stewardship of ocean and coastal resources for the benefit of the United States”.<sup>57)</sup>

Subsequent to a period of comment by state governors and the public on a preliminary report issued in April of 2004,<sup>58)</sup> the Commission presented its final report, *An Ocean Blueprint for the 21<sup>st</sup> Century*, in September of that year.<sup>59)</sup> This detailed document, composed of thirty-one chapters and

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Undersecretary of the Navy, Jacob Blaustein, Director Standard Oil, James Crutchfield, Professor of Economics, University of Washington, Frank DiLuzio, Assistant Secretary-Water Pollution Control, the U.S. Department of the Interior, Leon Jaworski, Attorney, John Knauss, Dean, Graduate School of Oceanography, University of Rhode Island, John Perry, President, Perry Publications, Taylor Pryor, President, The Oceanic Foundation, George Reedy, President Struthers Research and Development Corporation, George Sullivan, Consulting Scientist, General Electric Reentry Systems, and Robert White, Administrator, Environmental Science Services Administration, the U.S. Department of Commerce.

57) P.L. 106-256, section 4.

58) The U.S. Commission on Ocean Policy, *The Preliminary Report of the U.S. Commission on Ocean Policy—Governors’ Draft* (April 20, 2004); full text available online at <[www.oceancommission.gov/documents/prelimreport/welcome.html](http://www.oceancommission.gov/documents/prelimreport/welcome.html)>. State and public responses to the Preliminary Report is found online through the webpage of the U.S. Commission at <[www.oceancommission.gov/documents/gov\\_comments/welcome.html](http://www.oceancommission.gov/documents/gov_comments/welcome.html)>. For an analysis of state concerns and responses see Lawrence Juda, “The Report of the U.S. Commission on Ocean Policy: State Perspectives”, 34 *Coastal Management* 1-16 (2006).

59) The U.S. Commission on Ocean Policy, *An Ocean Blueprint for the 21<sup>st</sup> Century*, Report of the U.S. Commission on Ocean Policy (September 20, 2004), full text available online at: <[http://www.oceancommission.gov/documents/prepub\\_report/pre\\_pub\\_fin\\_report.pdf](http://www.oceancommission.gov/documents/prepub_report/pre_pub_fin_report.pdf)>.

several annexes and totaling almost 700 pages, lays out a set of fundamental principles to guide ocean policy (Table 1), makes 212 recommendations that address a wide array of ocean/coastal policy issues that are built around the fundamental concept of an ecosystem-based approach to the management of the resources and the environment of ocean/coastal space, an approach strongly advocated in the earlier report of privately funded, Pew Oceans Commission.<sup>60)</sup>

Ecosystem-based management is grounded in the understanding that ocean policy must be developed in the context of a systems view of the natural environment.

〈Table II-1〉 Guidance Principles for Ocean Policy (An Ocean Blueprint, chapter 3)

- **Sustainability** : Ocean policy should be designed to meet the needs of the present generation without compromising the ability of future generations to meet their needs.
- **Stewardship**: The principle of stewardship applies both to the government and to every citizen. The U.S. government holds ocean and coastal resources in the public trust—a special responsibility that necessitates balancing different uses of those resources for the continued benefit of all Americans. Just as important, every member of the public should recognize the value of the oceans and coasts, supporting appropriate policies and acting responsibly while minimizing negative environmental impacts.

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60) Pew Oceans Commission, *America's Living Oceans: Charting a Course for Sea Change*(May 2003). Available on line at <[www.pewtrusts.org/pdf/env\\_pew\\_oceans\\_final\\_report.pdf](http://www.pewtrusts.org/pdf/env_pew_oceans_final_report.pdf)>.

- **Ocean-Land-Atmosphere Connections** : Ocean policies should be based on the recognition that the oceans, land, and atmosphere are inextricably intertwined and that actions that affect one Earth system component are likely to affect another.
- **Ecosystem-based Management** : The U.S. ocean and coastal resources should be managed to reflect the relationships among all ecosystem components, including humans and nonhuman species and the environments in which they live. Applying this principle will require defining relevant geographic management areas based on ecosystem, rather than political, boundaries.
- **Multiple Use Management** : The many potentially beneficial uses of ocean and coastal resources should be acknowledged and managed in a way that balances competing uses while preserving and protecting the overall integrity of the ocean and coastal environments.
- **Preservation of Marine Biodiversity** : Downward trends in marine biodiversity should be reversed where they exist, with a desired end of maintaining or recovering natural levels of biological diversity and ecosystem services.
- **Best Available Science and Information** : Ocean policy decisions should be based on the best available understanding of the natural, social, and economic processes that affect ocean and coastal environments. Decision makers should be able to obtain and understand quality science and information in a way that facilitates successful management

of ocean and coastal resources.

- **Adaptive Management** : Ocean management programs should be designed to meet clear goals and provide new information to continually improve the scientific basis for future management. Periodic reevaluation of the goals and effectiveness of management measures, and incorporation of new information in implementing future management, are essential.
- **Understandable Laws and Clear Decisions** : Laws governing uses of ocean and coastal resources should be clear, coordinated, and accessible to the nation's citizens to facilitate compliance. Policy decisions and the reasoning behind them should also be clear and available to all interested parties.
- **Participatory Governance** : Governance of ocean uses should ensure widespread participation by all citizens on issues that affect them.
- **Timeliness** : Ocean governance systems should operate with as much efficiency and predictability as possible.
- **Accountability** : Decision makers and members of the public should be accountable for the actions they take that affect ocean and coastal resources.
- **International Responsibility** : The United States should act cooperatively with other nations in developing and implementing international ocean

policy, reflecting the deep connections between the U.S. interests and the global ocean.

Accordingly, it requires movement away from the traditional sectoral management of individual uses, an approach that is recognized to be seriously flawed as it fails to give needed attention to significant externalities, that is, unintended impacts of one use on another or to the effects of activities in one geographic locale on other parts of the natural system.<sup>61)</sup> But not only must the management effort be integrated in character, encompassing a wide variety of ocean uses, it should also be effectuated utilizing a precautionary approach so as to avoid environmental risk<sup>62)</sup> and in an ecosystem context, that is, within an appropriate spatial area defined by scientific criteria. In particular, the U.S. Commission on Ocean Policy pointed to the concept of Large Marine Ecosystems (LMEs) as such a framework.<sup>63)</sup>

In its vision for the future, the Commission report sees oceans and coasts as supporting multiple uses while making substantial contributions to the national economy through activities such as fishing, tourism, and oil and gas production. At the same time, oceans and coasts need to be managed in a sustainable fashion, allowing for the maintenance of a high level of biodiversity and a wide range of critical habitat.<sup>64)</sup>

To turn this vision into reality, the Commission identifies three broad themes that will have to be addressed to advance needed ecosystem-based management:

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61) *Ibid.*

62) The U.S. Commission on Ocean Policy, *An Ocean Blueprint for the 21<sup>st</sup> Century*, pp. 65~66.

63) *Ibid.*, pp. 63~65.

64) *Ibid.*, pp. 4~5.

- (1) a new coordinated national ocean policy framework to improve decision making;
- (2) cutting edge ocean data and science translated into high-quality information for managers; and
- (3) lifelong ocean-related education to create well-informed citizens with a strong stewardship ethic.<sup>65)</sup>

The report identifies numerous changes in terms of policy and governmental organization, the development and utilization of scientific data, and the need for an informed citizenry to bring about the Commission's vision for the oceans and coasts.<sup>66)</sup> While all three themes deserve careful attention and are interrelated the focus of the present study is on the first element, institutional arrangements and policy. Additionally, consideration must be given to the matter of budgetary support to implement needed change.

## 2) Institutional and policy change

It is striking how, in key respects, the U.S. Commission on Ocean Policy repeats the analysis of the earlier Stratton Commission. Thirty-five years after Stratton, major problems such as institutional overlap, widespread dispersal of authority over ocean affairs <Figure II-4>, and lack of coordination among the parts of the federal government with responsibilities in the ocean/coastal field remained very much in evidence.<sup>67)</sup> And the

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65) *Ibid.*, p. 5.

66) On the importance of widespread ocean education and scientific literacy as a basic support for coherent and sustainable ocean/coastal policy see *ibid.*, Chapter 8.

67) Compare *Our Nation and the Sea*, chapter 7, "Organizing a National Ocean Effort", and *An Ocean Blueprint for the 21<sup>st</sup> Century*, chapter 4, "Enhancing Ocean Leadership and Coordination".

dispersal of authority and responsibility for ocean affairs was not limited to the executive branch. In its 1969 report, the Stratton Commission noted that the diffusion of executive authority over ocean/coastal affairs is also evidenced in the legislative branch through the existence of multiple committees and subcommittees with jurisdiction and authority over particular aspects of oceans and coasts.<sup>68)</sup>

If anything, it appears that this congressional division of responsibility has only grown more pronounced; in its 2002 mid-term report the U.S. Commission on Ocean Policy noted that some 60 congressional committees and subcommittees were involved in the oversight of the work of 20 federal agencies and commissions with ocean related responsibilities based in more than 140 federal, ocean-related laws. The total governance system for the oceans was described as a “Byzantine patchwork of federal and state authorities and regulations”.<sup>69)</sup> This assessment, made decades after the findings of the Stratton Commission report, certainly raises important questions as to why this situation has been allowed to continue, and suggests that the lack of institutional coherence was not viewed as a problem or, more likely, that solutions were too difficult to effectuate. These considerations, in turn, lead to the question of whether, in the present political context, there is now support and impetus to proceed with significant institutional reorganization that had been lacking earlier.

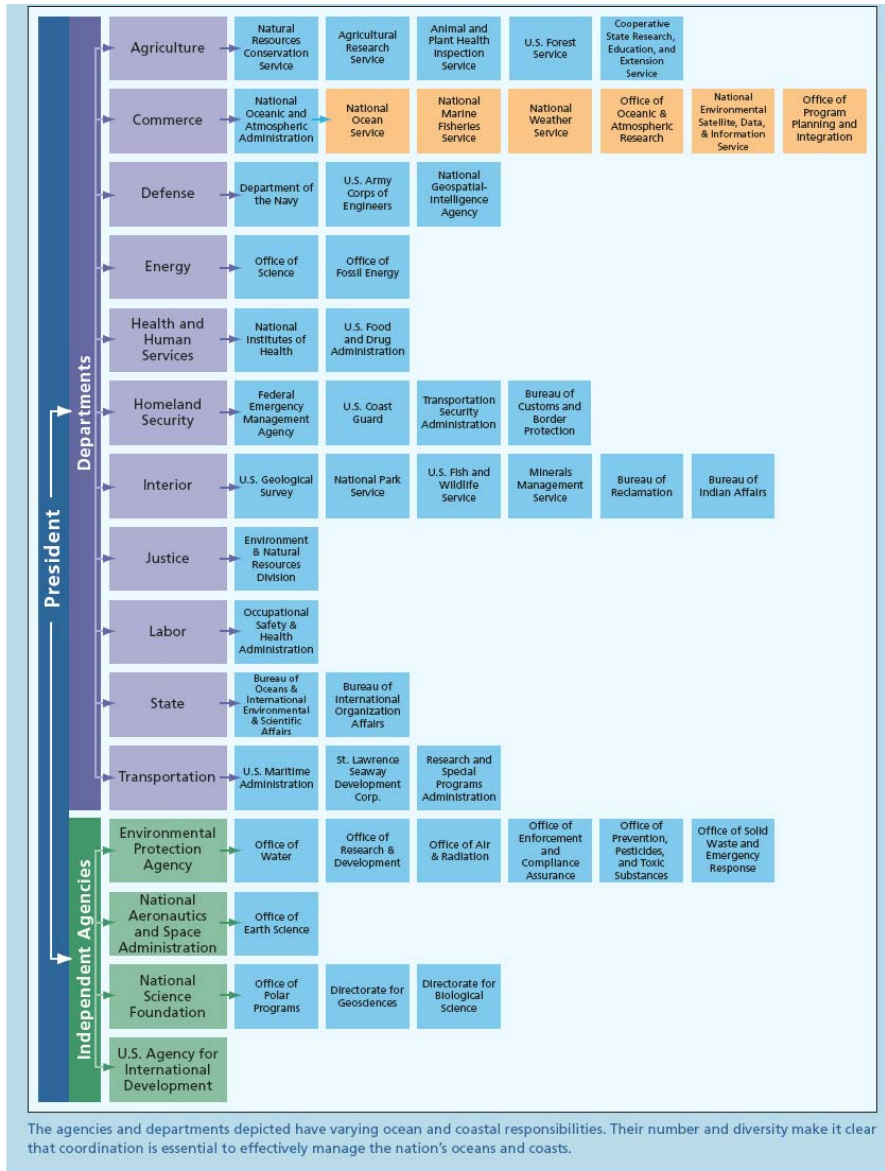
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68) Our Nations and the Sea, pp. 247~249.

69) The U.S. Commission on Ocean Policy, *Developing a National Ocean Policy* (September 2002), p. 4. Online at <[www.oceancommission.gov/documents/midterm\\_report/ReportCovREV10\\_01\\_02.pdf](http://www.oceancommission.gov/documents/midterm_report/ReportCovREV10_01_02.pdf)>. For a listing of congressional committees and subcommittees with jurisdiction over ocean/coastal issue and descriptions of their jurisdictions, see the U.S. Commission on Ocean Policy, *An Ocean Blueprint for the 21<sup>st</sup> Century*, Appendix F.



〈Figure II-4〉 Ocean and Coastal Activities Are Conducted by Many Federal Departments and Agencies



source: The U.S. Commission on Ocean Policy, *An Ocean Blueprint for the 21<sup>st</sup> Century*, p. 78.

In regard to institutional change, the report of the U.S. Commission on Ocean Policy called for the adoption of a new national ocean policy framework and recognition of the ocean leadership role of the National Oceanic and Atmospheric Administration (NOAA) through the enactment of a NOAA Organic Act. Several new institutional mechanisms were recommended, including a National Ocean Council with cabinet-level membership to coordinate federal government departments and programs, a Presidential Council of Advisors on Ocean Policy with wide representation from state governments and nongovernmental stakeholders, and a system of non-regulatory Regional Ocean Councils to address issues of a regional nature and to improve coordination with federal departments and agencies.<sup>70)</sup>

The overriding recommended change in policy framework is the new focus on ecosystem-based management, regionalism, and the very strong emphasis given to federal/state partnerships. Spatially, the Commission calls for decision making to occur within the context of areas defined by ecosystem rather than political boundaries.<sup>71)</sup> In recognition of the need for the best science to support effective management, the report also emphasizes the requirement for federal investment in scientific research and public education that would serve to support ocean stewardship goals.<sup>72)</sup>

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70) The Pew Commission favored the creation of more powerful regional ocean ecosystem councils that would develop and oversee enforceable regional comprehensive ocean governance plans. *America's Living Oceans*, pp. X and 103-105. On regionalism and the reports of the Pew Oceans Commission and the U.S. Commission on Ocean Policy, see Marc J. Hershman and Craig W. Russell, "Regional Ocean Governance in the United States: Concept and Reality," 16 *Duke Environmental Law and Policy Forum* 227-265 (2006). On line through <[www.law.duke.edu/journals/delpf](http://www.law.duke.edu/journals/delpf)>.

71) The U.S. Commission on Ocean Policy, *An Ocean Blueprint for the 21<sup>st</sup> Century*, pp. 63~64.

72) *Ibid.*, pp. 5~11 and chapter 3, pp. 60~69.

### 3) Budget

A significant reason why NOAA was not established as an independent agency by the Nixon White House was opposition from the Bureau of the Budget, predecessor to the Office of Management and the Budget (OMB), that feared an independent NOAA, with increased visibility and coherence, would become another “NASA [National Aeronautics and Space Administration]-like sponge on the budget”.<sup>73)</sup> Budgetary considerations as well as the opportunity cost of funding some agencies and programs at the expense of others are always a matter of concern for policy makers.

At least two aspects of the budget require consideration. The first addresses the adequacy and dependability of funding and the second is concerned with the coherency of the “ocean budget”. In the simplest terms the question must be asked if available funding is commensurate with the tasks that need to be performed. Sanctifying objectives and establishing programs to achieve lofty goals do not in themselves assure success. The U.S. Commission on Ocean Policy has strongly emphasized the point that new, additional federal funding above current levels is absolutely required for effective ocean governance.<sup>74)</sup>

The Commission’s report has estimated the additional costs associated with its recommendations to the federal government as approximately \$1.5 billion in the first year and \$3.9 billion per year after full implementation.<sup>75)</sup> Cognizant that the states, as well as the federal government, will be faced with additional program costs, and that the states are strongly opposed

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73) Edward Wenk, Jr., *The Politics of the Ocean*, supra note 14, p. 350.

74) The U.S. Commission on Ocean Policy, *An Ocean Blueprint for the 21<sup>st</sup> Century*, pp. 459~462.

75) *Ibid.*, p. 24 and chapter 30, pp. 458~470.

to unfunded federal mandates, the Commission proposed that Congress establish an Ocean Policy Trust Fund. Income would be derived from outer continental shelf oil and gas activities and from other economic uses of offshore areas and will be shared among the states and federal agencies in support of ocean management efforts. The Commission estimates that some four billion dollars could be provided to the states from this fund on an annual basis.<sup>76)</sup> Money is the lifeblood of programs; without sufficient funding programs will be undermined and wither or die. Further, funding must be of a dependable nature over a sufficient period of time so as to advance goals.

Given that congressional authorizations and appropriations tend to be of relatively short length, both the Pew and the U.S. Oceans Commissions have favored the creation of trust funds that would disburse funds to federal agencies, states, and other actors. The Pew Commission would establish a fishery conservation and management trust fund that would be available without the need for congressional appropriation or fiscal year limitations with funds coming from royalty payments on landed fish catch and funds would be allocated within the regions where they are raised and used for improving research data collection, management, enforcement, and habitat protection.<sup>77)</sup> This suggestion could expect to receive substantial opposition from fishermen.

The Ocean Policy Trust Fund proposal of the U.S. Commission on Ocean Policy would establish a dedicated source of income to be derived from permitted operations in federal waters, most particularly offshore oil and gas

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76) *Ibid.*, pp. 24~26 and chapter 30.

77) Pew Oceans Commission, *America's Living Oceans: Charting a Course for Sea Change*, pp. 48, pp. 115~116.

operations and, eventually, from other activities such as mariculture, renewable energy, and bio-prospecting.<sup>78)</sup> However, for those concerned with controlling the federal budget this approach may be seen as involving the creation of a new entitlement program, providing yet an additional drain on an already overdrawn budget. Further, automatic funding might serve to reduce the influence of authorization and appropriations committees and subcommittees in congress. Moreover, the coastal states in the Gulf of Mexico where most offshore oil production occurs believe that they should have first claim on federal funds generated by the production off their coasts. A proposal for such an Ocean Trust Fund would face substantial obstacles to its adoption.

The concept of an “ocean budget” refers to the totality of financial support allocated by congress to support ocean/coastal programs that are individually evaluated for support. The suggestion has been made that the various ocean programs ought to be considered together and as a whole<sup>79)</sup>, allowing for some integrated assessment of program interplay and evaluation of the coherence of different programs so as to maximize cumulative benefit and program synergies. The U.S. Commission on Ocean Policy is but the latest body to make this suggestion.<sup>80)</sup>

In essence, the U.S. Commission on Ocean Policy has described a desired future state for ocean/coastal space and has provided a road map to get there. With the provision of its final report, the Commission fulfilled its

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78) The U.S. Commission on Ocean Policy, *An Ocean Blueprint for the 21<sup>st</sup> Century*, pp. 24~26.

79) See, for example, James W. Curlin, “Organizing the National Ocean Effort”, and Don Walsh, “Organization for Ocean Management: Centralization vs. Functionalization”, in National Advisory Committee on Oceans and Atmosphere, *Reorganizing the Federal Effort in Oceanic and Atmospheric Affairs*, volume II (March 1979) pp. 15~30 at 29~30 and pp. 293~309 at 306-309, respectively.

80) The U.S. Commission on Ocean Policy, *An Ocean Blueprint for the 21<sup>st</sup> Century*, pp. 468~469.

legislated mandate under the Oceans Act; it is now up to the executive branch and the congress to consider the Commission's findings and, if in agreement, to effectuate needed change to close the gap between present practice and the future vision for the oceans. While some of the actions proposed by the Commission may be achieved through administrative action within the executive branch, a number of important recommendations will require congressional action. Additionally, it is also clear that the cooperation and participation of state and local governments will be essential to implement the vision of the Commission.

The reports of both the Pew Oceans Commission and the U.S. Commission on Ocean Policy considered the many pressures on the ocean environment and reflected the need for a new perspective on the oceans and a new approach to ocean policy. Yet, significant change in governmental approaches to ocean use management requires consideration of some intermediary elements, namely :

- a) the institutional and organizational structure of government that makes and implements ocean policy ;
- b) the substantive nature of ocean policy in terms of goals and the means selected to achieve these goals ;
- c) the availability of funding for implementation, monitoring, and assessment.

The process that addresses such matters occurs is political in nature and, accordingly, takes into account the socio-economic and political consequences of change, as well as the needs to protect the ocean environment and its resources.

#### 4) Reaction to the report of the U.S. Ocean Commission Report

Initial responses to the An Ocean Blueprint for the 21<sup>st</sup> Century were quite positive and supportive and, as seen below, led to the issuance by the President of the U.S. Ocean Action Plan and the introduction of several major pieces of ocean legislation in Congress that are discussed below. In their comments on the preliminary report, many governors openly endorsed the key findings of the Commission.<sup>81)</sup>

Yet, over a year after the issuance of the final report of the U.S. Commission on Ocean Policy and almost three years after the publication of the Pew Commission Report, the Joint Ocean Commission (JOC) Initiative, composed of members of the now defunct the U.S. Commission on Oceans Policy and the Pew Oceans Commission and which actively seeks to advance implementation of their Commission's recommendations, released a "report card" in February 2006 and gave a disappointing "grade" of D+ to the quality of governmental response in respect of national ocean governance reform.<sup>82)</sup> And more recently, Pew Commission and JOC co-Chairman Leon Panetta, expressed his frustration that while the two Commissions were successful in creating awareness of ocean problems, they did not generate the momentum required to "develop and implement a new framework for ocean policy".<sup>83)</sup> Indeed, the report of the Pew Oceans Commission was dismissed by Rep. Pombo, Chairman of the House

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81) Lawrence Juda, "The Report of the U.S. Commission on Ocean Policy: State Perspectives", 34 *Coastal Management* 1-16 (2006).

82) Joint Ocean Commission Initiative, *The U.S. Gets a D+ on Ocean Policy Reform* (February 3, 2006). On line at <[www.jointoceancommission.org/press/press/release0203.html](http://www.jointoceancommission.org/press/press/release0203.html)>.

83) Joint Ocean Commission Initiative, *Key Senators Agree to Take Action as Ocean Crisis Worsens* (June 13, 2006). On line at <[www.jointoceancommission.org/press/press/release0613.html](http://www.jointoceancommission.org/press/press/release0613.html)>.

Resources Committee and, by virtue of this position, a key congressional player in ocean policy, as a “5.5 million coffee table picture book”.<sup>84)</sup>

He also observed that in light of current budgetary deficits, it was unlikely that an ocean trust fund would be established.<sup>85)</sup>

As budgets reflect administration priorities, it is useful to compare changes in proposed budgetary allocations subsequent to the report of the U.S. Commission on Ocean Policy. In fact, the president’s budget request for ocean/coastal programs for fiscal year 2006 (\$9.364 billion) shows a decline as compared to fiscal years 2004 (\$9.423 billion) and 2005 (\$10.199 billion) and tentative budget projections for the years through 2010 remain at levels below the actual allocations for 2004 and 2005 (see <Table II-2> ).<sup>86)</sup> More recently, the President has budgeted \$3.684 billion for NOAA for fiscal year 2007, some \$227 million (5.8%) less than the actual funding for 2006. In particular the National Ocean Service faces a reduction of \$187 million (31.7% of its 2006 budget) while the National Marine Fisheries Service would see a decrease of \$67 million (8.3% of its 2006 budget).<sup>87)</sup>

Clearly, the Joint Ocean Commission does not believe that to date the work of either commission has received the attention and support that was merited and has now become a strong advocate seeking the development of a coherent, ecosystem-based ocean policy. Of course, it still remains to be

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84) The U.S. House of Representatives, Committee on Resources, “Pew Oceans Commission Issues \$5.5 Million Coffee Table Picture Book”, Press Release, June 4, 2003. On line at <[resourcescommittee.house.gov/Press/releases/2003/0604Pews.htm](http://resourcescommittee.house.gov/Press/releases/2003/0604Pews.htm)>.

85) Erica Werner, “Trust Fund to Restore Oceans Not Likely, House Chairman Says”, *The Associated Press State & Local Wire*, February 2, 2005.

86) Interagency Committee for Ocean Science and Resource Management Integration, *Federal Ocean and Coastal Activities Report to the U.S. Congress* (December 2005) p. ix. Available on line at <[ocean.ceq.gov/Fedoceancoastal.pdf](http://ocean.ceq.gov/Fedoceancoastal.pdf)>.

87) NOAA, *FY 2007 Blue Book (Budget Summary)*, chapter 3, on line at <[www.ofa.noaa.gov/%7Enbo/07bluebook\\_highlights.html](http://www.ofa.noaa.gov/%7Enbo/07bluebook_highlights.html)>.



seen if, ultimately, the report of the new Commission will have an ocean policy impact comparable to that of the earlier Stratton Commission. Generally viewed as successful, even the Stratton Commission did not get all that it wanted. As noted earlier, the National Oceanic and Atmospheric Administration (NOAA) was created but it was not established as an independent agency, as favored by the Stratton Commission, instead being placed in the Department of Commerce. And though NOAA was quickly established in 1970 by executive action, congressional passage of the Coastal Zone Management Act and the Fishery Conservation and Management Act followed several years later.

With an understanding of political realities, the new Commission, in its recommendations on improving executive agency structure, proposed a three step, phased in process of change in which Congress would first pass an organic act codifying the NOAA's existence, then the ocean related responsibilities of all federal agencies would be reviewed with an eye to program consolidation, and only then, with a better understanding of the requirements of ecosystem-based management, would a more fundamental government reorganization in which all natural resources functions, including ocean and coastal, occur.<sup>88)</sup>

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88) The U.S. Commission on Ocean Policy, *An Ocean Blueprint for the 21<sup>st</sup> Century*, pp. 10~11 and pp. 110~118.

〈Table II-2〉 Estimated Federal Funding for Oceans and Coastal Activities (Dollars in Millions)\*

| Agency                                | FY 2004<br>Actual | FY 2005<br>Enacted | FY 2006<br>Budget Request | FY 2007 Budget<br>Projection | FY 2008 Budget<br>Projection** | FY 2009 Budget<br>Projection** | FY 2010 Budget<br>Projection** |
|---------------------------------------|-------------------|--------------------|---------------------------|------------------------------|--------------------------------|--------------------------------|--------------------------------|
| Dept. of Agriculture                  | 634               | 669                | 643                       | 643                          | 590                            | 544                            | 544                            |
| Dept. of Commerce                     | 1,871             | 2,101              | 1,682                     | 1,643                        | 1,654                          | 1,649                          | 1,622                          |
| Dept. of Defense                      | 1,508             | 1,528              | 1,423                     | 1,253                        | 1,249                          | 1,232                          | 1,248                          |
| Dept. of Energy                       | 24                | 16                 | 12                        | 12                           | 12                             | 12                             | 12                             |
| Environmental Protection Agency       | 1,105             | 963                | 782                       | 782                          | 782                            | 782                            | 782                            |
| Dept. of Health & Human Services      | --                | --                 | --                        | --                           | --                             | --                             | --                             |
| Dept. of Homeland Security            | 2,086             | 2,771              | 2,962                     | 3,048                        | 3,185                          | 3,361                          | 3,496                          |
| Dept. of the Interior                 | 732               | 752                | 766                       | 765                          | 769                            | 771                            | 769                            |
| Marine Mammal Commission              | 2                 | 2                  | 2                         | 2                            | 2                              | 2                              | 2                              |
| National Aeronautics & Space Adminis. | 91                | 104                | 136                       | 133                          | 75                             | 54                             | 45                             |
| National Science Foundation           | 358               | 340                | 344                       | 344                          | 344                            | 344                            | 344                            |
| Smithsonian Institution               | 1                 | 1                  | 1                         | 1                            | 1                              | 1                              | 1                              |

〈Table II-2〉 (continued)

| Agency                   | FY 2004<br>Actual | FY 2005<br>Enacted | FY 2006<br>Budget Request | FY 2007 Budget<br>Projection | FY 2008 Budget<br>Projection** | FY 2009 Budget<br>Projection** | FY 2010 Budget<br>Projection** |
|--------------------------|-------------------|--------------------|---------------------------|------------------------------|--------------------------------|--------------------------------|--------------------------------|
| Dept. of State and USAID | 96                | 93                 | 96                        | 92                           | 78                             | 76                             | 70                             |
| Dept. of Transportation  | 893               | 837                | 492                       | 373                          | 373                            | 374                            | 374                            |
| Dept. of the Treasury    | 16                | 16                 | 16                        | 16                           | 16                             | 16                             | 16                             |
| TOTAL                    | \$9,423           | \$10,199           | \$9,364                   | \$9,112                      | \$9,138                        | \$9,224                        | \$9,332                        |

\* Numbers may not add due to rounding.

\*\* Unless specified by the agencies. Estimates for FY 2007 to FY 2010 were assumed equal to the President's 2006 Budget Request. Presidential budget requests for these programs are evaluated annually; as such, the budget projections herein for FY 2007 and beyond are subject to reassessment and change, and should not be construed as equivalent to budget requests.

Source: Interagency Committee on Ocean Science and Resource Management Integration, *Federal Ocean and Coastal Activities Report to the U.S. Congress* (December 2005), p. ix. On line <[ocean.ceq.gov/Fedoceancoastal.pdf](http://ocean.ceq.gov/Fedoceancoastal.pdf)>.

In contemplating the potential impact of the new Commission as compared to that of Stratton, it must be noted that there are significant differences in the political context of the two periods. The Stratton Commission report emerged at time of exploding public interest in environmental protection and with a congress that was amenable to and supportive of the adoption of legislation such as the National Environmental Policy Act, the Endangered Species Act, the Coastal Zone Management Act, and the Marine Mammal Protection Act. In the current period and with a different congress, supporters are fighting to maintain existing legislation and programs. Further, they are faced with an administration that is not environmentally oriented that, for example, has strongly questioned the significance of human contribution to global warming or even the phenomenon of global warming itself.

Presidential attitude is very significant in achieving institutional and policy change. Edward Wenk, Jr., an ocean policy participant from the 1960s, in observations that are still applicable, has noted that:

Translated into political terms, the question of how important the oceans are to the nation can be directly measured by how important the President believes they are. Of all the officers of government, the President has by far the greatest power to the nation's major political goals, to synthesize divergent interests into a public interest, and to develop strategies and tactics to accomplish his programs. He is manager of the bureaucracy, obliged to enforce a coherent unity to the fractured internal machinery that endeavor to respond to signals from clientele they serve, and to resolve disputes...<sup>89)</sup>

In this vein, the U.S. Commission on Ocean Policy observed that while there is a clear need for ocean issue visibility and leadership, only the

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<sup>89)</sup> Edward Wenk, Jr., *The Politics of the Ocean*, supra note 14, p. 149.

President has the authority to overcome agency conflicts and the President can provide needed leadership in establishing a national commitment to the oceans and in defining needed budgetary priorities.<sup>90)</sup> Thus, among the key questions that must be asked in considering the prospects for significant action in regard to ocean policy are: do the oceans have a significant place on the president's agenda? If not, can this shortcoming be somehow overcome?

For its part, Congress may have had its fill with broad scale reorganization in the bruising fight over the creation of the Department of Homeland Security following 9/11. The politics of reorganization tends to be intense as departments, agencies, and congressional committees seek to protect their jurisdictional turfs and, consequently, their base of power and influence. And, as is always the case, Congress has a wide range of pressing issues competing for its limited time and attention. In the period following the Stratton Commission report, the presence of a number of influential ocean "champions" such as Senators Magnuson, Hollings, and Pell were concerned with the oceans "big picture" and were willing to devote time and effort to broad ocean initiatives. Are there presently members of Congress who are able and willing to take the needed leadership roles to advance the agenda laid out by the U.S. Commission on Ocean Policy?

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90) The U.S. Commission on Ocean Policy, *An Ocean Blueprint for the 21<sup>st</sup> Century*, pp. 77~78.

#### **4. Transitioning to Ecosystem-Based Management: General Approaches and Problems**

As did the Pew Oceans Commission, the U.S. Commission on Ocean Policy emphatically emphasized the need for ecosystem-based ocean policy. Moving in this direction requires attention to a variety of problems including those of a conceptual and a strategic/political character. While there appears to be consensus that ecosystem-based management involves management within ecologically as opposed to politically defined geographical space, it is an approach subject to different renderings. It involves operationalizing broad and often ambiguous concepts such as sustainability, adaptive management, participatory governance, and stewardship.<sup>91)</sup> At the same time it also requires consideration of strategic and political issues such as what exactly needs to be done and in what order. Always of concern in the policy environment is the question of what types of measures will be politically acceptable and, thus, actually achievable and how will needed efforts be financially supported.

In general, there appear to be two general approaches to moving forward toward an integrated, systematic, ecosystem-based approach to ocean/coastal management. The first is what might be called the “big picture” approach and involves an effort to achieve major changes with a sweeping measure providing for significant structural change in governmental organization and agency mandate or through development of a overarching broad, national

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91) These principles are among those identified as guiding principles in the report of the U.S. Commission on Ocean Policy report. Others are ocean-land-atmosphere connections, multiple use management, preservation of marine diversity, best available science and technology, understandable laws and clear decisions, and timeliness. Ibid., pp. 61~62. Note, too that the Commission also endorses the precautionary approach. Ibid., pp. 65~66.

ocean policy. The second, is a more incremental effort that relies on change in a variety of existing individual statutes, programs, and measures addressing a particular ocean use such as fishing or a problem such as water quality, that either introduces or reinforces ecosystem-based elements. Collectively, such changes contribute to a broader mosaic that eventually may coalesce into an ecosystem-based management system. The report of the U.S. Commission on Ocean Policy, having contemplated not just the question of what was needed but how it could be accomplished, concluded that the most promising approach was through a phased in process rather than through one single, grand effort.<sup>92)</sup>

The incremental approach is pragmatic and piecemeal while the former is more in the nature of a grand design and more difficult politically to move forward. The traditional sectoral orientation in the management of oceans uses has strong roots and reflects the reality that the policy environments or policy space that originally developed around particular uses have provided direct stakeholders, such as fishermen in regard to fisheries policy and oil interests in relation to continental shelf development, with significant influence in what they had viewed as discrete activities of limited interest to the larger public. An EBM approach to ocean policy, however, implies a broader public stake in decisions made in individual sectors, reflecting a systems perspective of the natural environment, concerned with the interplay of system elements and externalities associated with particular uses, and, consequently, introducing additional considerations into the decision making process, such as environmental sustainability, and new parties, such as environmentalists, who also view themselves as stakeholders. Policy space

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92) The U.S. Commission on Ocean Policy, *An Ocean Blueprint for the 21<sup>st</sup> Century*, p. 10 and pp. 108~118.

in the context of EBM is thus enlarged, affecting policy, decisions, and outcomes, altering existing patterns of decision making and distributive outcomes in regard to ocean uses. The process of transitioning to EBM is deeply political in nature.

#### 1) Executive Branch Response (political level/administrative level)

In December of 2004, the Bush Administration provided its initial response to the Commission's recommendations with its Ocean Action Plan.<sup>93)</sup>

In general terms it expressed support for the principle that sound science is needed to support effective management, for an ecosystem-based approach to water, land, and resource management and, specifically, for congressional passage of a NOAA Organic Act. In the quest for ocean policy effectiveness, the Administration emphasized the need for federal-state- local partnerships and, wherever possible, the utilization of economic incentives rather than federal mandates to encourage needed cooperation across levels of government.

While it is important to consider the elements included in the President's Action Plan it is also necessary to consider what is not stipulated. Notably, and significantly, there was no statement of administration support for the Commission's recommendation for an Ocean Policy Trust Fund and, although supporting particular regional efforts as in the Great Lakes and the Gulf of Mexico, there was no indication of support for the Commission's

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93) Council on Environmental Quality, *The U.S. Ocean Action Plan* (December 17, 2004), The full text of this report is found on line at <[ocean.ceq.gov/actionplan.pdf](http://ocean.ceq.gov/actionplan.pdf)>.



suggestions on Regional Ocean Councils.

In terms of administrative action, President Bush, by executive order, established an advisory Cabinet-level Committee on Ocean Policy (COP) with wide membership, headed by the Chairman of the Council of Environmental Quality, and gave it the responsibility to develop an 18 month work plan to address Commission recommendations.<sup>94)</sup> A subsidiary Interagency Committee on Ocean Science and Resource Management Integration with membership at the Undersecretary/Assistant Secretary level<sup>95)</sup> was to report to the COP. In turn, this body would receive reports from a new Interagency Working Group on Ocean Resource Management, now referred to as the Subcommittee on Integrated Management of Ocean Resources (SIMOR), with membership at the Deputy Assistant Secretary level<sup>96)</sup>, and from an existing National Science and Technology Council Joint Subcommittee on Ocean Science and Technology (JSOST), also with membership at the Deputy Assistant Secretary level (See <Figure II-5>)<sup>97)</sup>.

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94) Executive Order 13366, December 17, 2004, 40 *Weekly Compilation of Presidential Documents*, 2987-2989 (December 20, 2004). Sitting as members of the Committee on Ocean Policy are the Secretaries of State, Defense, Interior, Agriculture, Health and Human Services, Commerce, Labor, Transportation, Energy, and Homeland Security. Also members are the Administrator of the Environmental Protection Administration, the Director of the Office of Management and the Budget, the Administrator of the National Aeronautics and Space Administration, the Director of National Intelligence, the Director of the Office of Science and Technology Policy, the Director of the National Science Foundation, the Chairman of the Joint Chiefs of Staff, the Assistants to the President for National Security Affairs, Homeland Security, Domestic Policy, and Economic Policy, a designee of the Vice President, and other government officials as the Committee chairman may designate.

95) A membership list of this group as of April 6, 2006 is available on line at <[ocean.ceq.gov/about/docs/icosrmi\\_membership040106.pdf](http://ocean.ceq.gov/about/docs/icosrmi_membership040106.pdf)>.

96) A membership list for SIMOR is found on line at <[ocean.ceq.gov/about/docs/SIMOR\\_Membership030206.pdf](http://ocean.ceq.gov/about/docs/SIMOR_Membership030206.pdf)>.

97) Council on Environmental Quality, *The U.S. Ocean Action Plan* (December 17, 2004), pp. 6-9. The membership list for JSOST as of March 13, 2006 is found on line at <[ocean.ceq.gov/about/docs/JSOST\\_membership032006.pdf](http://ocean.ceq.gov/about/docs/JSOST_membership032006.pdf)>.

The work, to date of each of these bodies is considered below.

#### (1) ICOSMRI

Under the terms of the Oceans Act of 2000 which created the U.S. Commission on Ocean Policy, the President is required to report to Congress every two years providing a detailed listing and description of federal programs related to ocean and coastal activities, indicating the level of funding support, and projecting program funding levels for the next five year period.<sup>98)</sup> Prepared by the Interagency Committee on Ocean Science and Resource Management Integration (ICOSMRI), the December 2005 report to Congress was organized around the general themes of the U.S. Ocean Commission report.<sup>99)</sup> While providing an overview of existing programs and highlighting a number of specific programs, the report is perhaps most revealing in its federal government-wide budgetary statistics. Most strikingly, as seen in <Table II-2>, it appears that Commission's support for additional funding for ocean/coastal programs is not receiving Administration political support and, indeed, that the budget request for fiscal year 2006 represents a reduction from the enacted budgets of 2004 and 2005.

In particular, budgetary information from NOAA shows a substantial decline in funding for ocean/coastal programs as between the enacted fiscal year 2005 budget (\$640.19 billion) and the Administration requested 2006

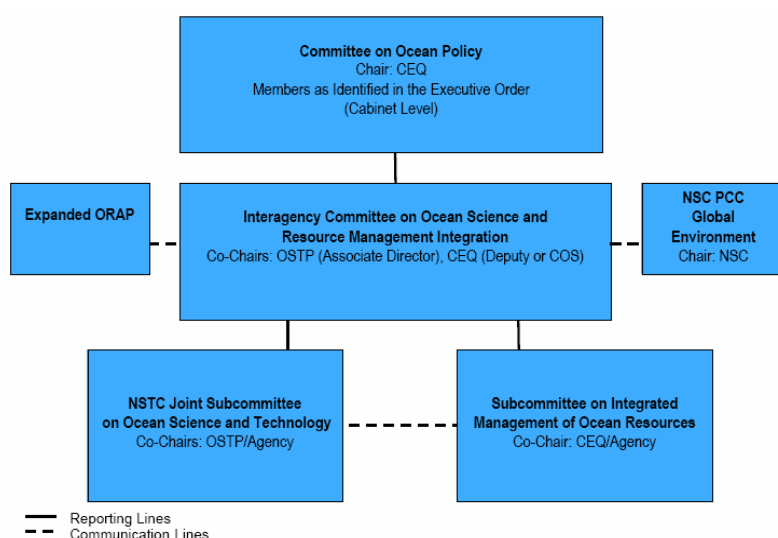
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98) P.L. 106-256, section 5.

99) Interagency Committee on Ocean Science and Resource Management Integration, *Federal Ocean and Coastal Activities Report to the U.S. Congress*, (December 2005). Available on line at: <[ocean.ceq.gov/Fedoceancoastal.pdf](http://ocean.ceq.gov/Fedoceancoastal.pdf)>. For federal government projections from the vantage of 2003 see the letter and attachment from Anu Mittal, Acting Director, Natural Resources and the Environment, General Accounting Office, to Senators John McCain and Ernest Hollings, dated August 11, 2003. Full text available on line at <[www.gao.gov/new.items/d031070r.pdf](http://www.gao.gov/new.items/d031070r.pdf)>.

budget (\$569 billion), with a projected decline in support for programs including coastal management, the marine sanctuary program, the ocean assessment program, and the NMFS habitat and restoration program.<sup>100)</sup> A similar reduction is seen in the ocean/coastal budget of the EPA with a decline from enacted 2005 fiscal year budget of \$962.77 billion to a 2006 Administration requested \$782.41 billion.<sup>101)</sup> Such budgeting appears to contradict the Commission's findings that additional funding, beyond current outlays, were required for ocean/coastal programs.

〈Figure II-5〉 Committee on Ocean Policy and Subsidiary Bodies



### Acronyms

CEQ : Council of Environmental Quality

NSC PCC : National Security Council Policy Coordinating Committee

NSTC : National Science and Technology Council established a Joint Subcommittee on

100) *Ibid.*, pp. A10~A11.

101) *Ibid.*, p. A23.

Oceans in 2003. This group, with its name altered to include science and technology, will continue to report to the NSTC Committee on Science and the Committee on Earth and Natural Resources, now being co-chaired by OSTP and agency representatives, and will report directly to the Co-chairs of the new Interagency Committee on Ocean Science and Resource Management Integration. The group consists of Deputy Assistant Secretaries or appropriate representatives from the Executive branch agencies and departments of the Committee on Ocean Policy.

ORAP : Ocean Research Advisory Panel, mandated by Congress with the establishment of the 1997 National Oceanographic Partnership Program (NOPP) and functions under the auspices of the 1972 Federal Advisory Committee Act. Consists of 10-18 members, representing the National Academies, academic oceanographic research institutions, ocean policy organizations, state governments, ocean industry, educators, and others.

OSTP : Office of Science and Technology Policy

source : Council on Environmental Quality, *The U.S. Ocean Action Plan* (December 17, 2004).

## (2) SIMOR

The Subcommittee on Integrated Management of Ocean Resources (SIMOR) views its role as advancing ecosystem-based management and serving as the focal point in promoting federal agency collaboration, involving federal agencies in regional and local management efforts and in assisting in the creation of broad partnerships among governments at all levels, the private sector, and stakeholders. Well aware of the reality of turf sensitivities, the SIMOR purpose statement indicates that in seeking to improve the effectiveness of interagency efforts at all levels, SIMOR will be respectful of existing authorities and jurisdictions.<sup>102)</sup> In this context it is not surprising that SIMOR is structured with four co-chairs, representing the

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102) Subcommittee on Integrated Management of Ocean Resources, Statement of Purpose, on line at <[ocean.ceq.gov/about/docs/SIMOR\\_Purpose.pdf](http://ocean.ceq.gov/about/docs/SIMOR_Purpose.pdf)>.

Council on Environmental Quality (CEQ), the Environmental Protection Agency (EPA), the Department of the Interior, and the National Oceanic and Atmospheric Administration.

In March 2006, SIMOR released its work plan in which it identifies its initial four areas of priority :

- supporting regional and local collaboration with initial emphasis given to areas where regional efforts are already being made, including the Gulf of Mexico, the Great Lakes and New England
- facilitating the use of ocean science and technology in ocean resource management by ensuring that needed research takes place and that the results of that research are applied by those with management responsibilities
- enhancing ocean, coastal, Great Lakes resource management to improve use and conservation by developing an interagency mechanism that would serve to inform all agencies of proposed activities, thus furthering widespread awareness of what is occurring and identifying potential interagency conflicts, and
- advancing ocean education by improving coordination of federal, ocean-related education and outreach to better serve broad national goals and priorities.<sup>103)</sup>

### (3) JSOST

Functionally, the purposes of the Joint Subcommittee on Ocean Science and Technology (JSOST) are to identify national priorities in ocean science

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103) Subcommittee on Integrated Management of Ocean Resources, *Implementing the Work Priorities of the Subcommittee on Integrated Management of Ocean Resources (SIMOR), Work Plan* (March 2006) on line at <[ocean.ceq.gov/about/docs/SIMOR\\_WorkPlan\\_Final.pdf](http://ocean.ceq.gov/about/docs/SIMOR_WorkPlan_Final.pdf)>.

and technology, facilitate needed disciplinary and inter-disciplinary research, including international collaboration, provide scientific and technological advice for ecosystem-based management and policy, and identify educational, outreach, and capacity building opportunities. Joint Subcommittee on Ocean Science and Technology, Functions, on line at <[ocean.ceq.gov/about/sup\\_jsost\\_functions.html](http://ocean.ceq.gov/about/sup_jsost_functions.html)>. On April 5, 2005, JSOST issued its Oceans Priorities Framework that is to be followed by a detailed plan and strategy to be made available by December 31, 2006. To further the development of this strategy, JSOST provided a draft work plan that sought to identify research priorities<sup>104)</sup> and invited public comment and further provided for a public workshop in April 2006.<sup>105)</sup> Seven broad themes for consideration were identified by JSOST :

- Enhancing human health
- Improving ecosystem health
- Sustaining natural resources
- Promoting marine operations
- The ocean's role in climate change and variability
- Mitigating effects of natural hazards
- Improving quality of life.

An additional three cross-cutting themes were identified :

- Basic understanding of the ocean

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104) This document is found on line at <[ocean.ceq.gov/about/docs/jsost\\_orpp\\_planningdoc.pdf](http://ocean.ceq.gov/about/docs/jsost_orpp_planningdoc.pdf)>.

105) CEQ, *Ocean Research Priorities Plan and Implementation Strategy Development-Public Comment Period*, on line at <[ocean.ceq.gov/about/sup\\_jsost\\_public\\_comment.html](http://ocean.ceq.gov/about/sup_jsost_public_comment.html)>.

- Research support through ocean observations and infrastructure
- Expanded ocean education.<sup>106)</sup>

While these executive bodies contemplate broad changes in ocean policy, NOAA, as an operating agency with actual management responsibilities, has been leading efforts to further the use of the ecosystem-based approach within its own domain. NOAA's new framework emphasizes an ecosystem approach to management that is said to be scientific based and integrated in nature, reflecting five principles:

- adaptive management
- geographically specific management areas utilizing regional ecosystem boundaries based in the concept of large marine ecosystems
- accounting for ecosystem knowledge and uncertainty with a precautionary approach
- considering multiple external influences
- balancing diverse societal objectives.<sup>107)</sup>

To overcome the divisions imposed by the line organization structure of NOAA, NOAA has established a matrix organizational structure that recognizes the need for joint efforts of various line offices with significant responsibilities for planning, programming, and budgeting <sup>108)</sup> (See <Figure

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106) JSOST draft work plan, on line at <[ocean.ceq.gov/about/docs/jsost\\_orpp\\_planningdoc.pdf](http://ocean.ceq.gov/about/docs/jsost_orpp_planningdoc.pdf)>, pp. 4-5.

107) James Burgess, et al., "NOAA's Ecosystem Approach to Management", July 1, 2005 on line at <[ecosystems.noaa.gov/docs/EGT\\_Oceans\\_2005\\_Paper\\_070105.doc](http://ecosystems.noaa.gov/docs/EGT_Oceans_2005_Paper_070105.doc)>.

108) NOAA, External Ecosystem Task Team, Preliminary Report to NOAA Science Advisory Board: Evolving an Ecosystem Approach to Science and Management Throughout NOAA and its Partners. On line at <[ecosystems.noaa.gov/docs/EETt.pdf](http://ecosystems.noaa.gov/docs/EETt.pdf)>.

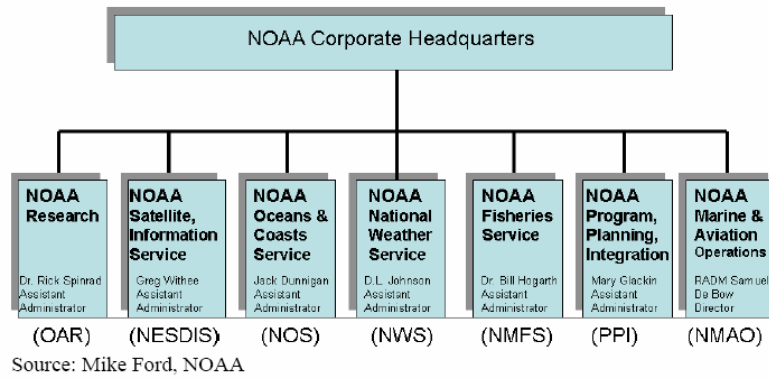
III-6>). In particular it established an Ecosystem Goal Team to provide interaction across line offices in NOAA and to strengthen ecosystem research.<sup>109)</sup> This new arrangement, however, addresses the need for integration within NOAA but does not have application to agencies and offices in other executive departments.

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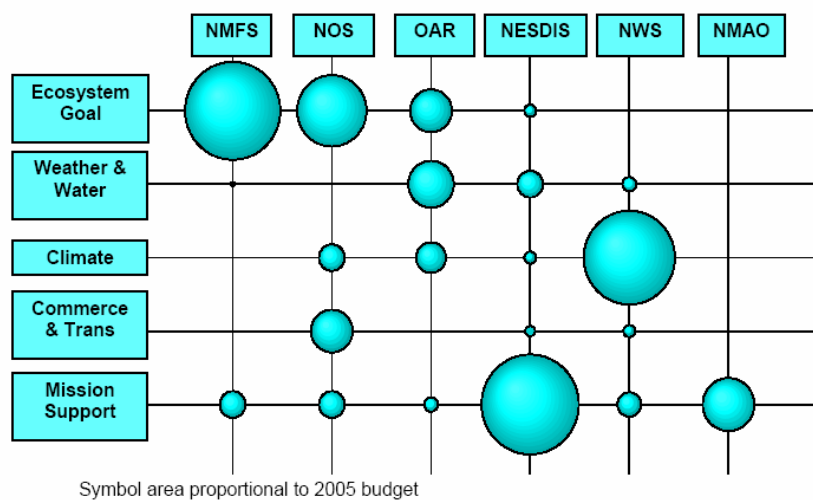
109) The web site of the NOAA Ecosystem Goal Team is found at <[ecosystems.noaa.gov](http://ecosystems.noaa.gov)>.



〈Figure II-6〉 NOAA' s traditional line office structure supporting ecosystem, climate, weather and water, and commerce and transportation, and mission support activities



NOAA' s matrix structure integrating line offices and goal teams



Source: Mike Ford, NOAA

## 2) Congressional Action

The movement of legislation requires a combination of dedicated leadership within congress and significant political support from without. And, timing is of the essence. In this regard the questions arises: is there, in the current policy making framework, what Kingdon terms an open window of opportunity<sup>110)</sup> for new ocean proposal to pass through? For those in the ocean policy community, the preparation and issuance of the report of the U.S. Commission on Ocean Policy is seen as providing an important focusing event, shining the spot light on ocean policy and management. But the reality is that at any time there other and multiple compelling issues competing for the limited attention of Congress, including politically highly charged matters such as Social Security and Medicare reform, immigration, and a host of budgetary issues.<sup>111)</sup> Will Congress invest its time on an issue that may be seen as amorphous in character, with many interrelated subcomponents, lacking committed presidential leadership and investment of political capital, and for which public pressure is of a limited and less immediately pressing nature? Will it authorize and appropriate budgetary resources sufficient to do what needs to be done in

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110) John W. Kingdon, *Agendas, Alternatives, and Public Policies*, 2nd edition (New York: Longman, 1995).

111) Immediately following the release of the final report of the U.S. Commission on Ocean Policy, Rep. Sam Farr of California and co-chair of the bi-partisan House Oceans Caucus, noted that "While we have many crises - at home and abroad - that require our immediate attention, we cannot overlook the fact that our oceans are in a state of crisis, too". Urging the need to adopt an ecosystem-based approach to the oceans, he noted, "Simply put, our current ocean and coastal management system, created over thirty years ago, is archaic and incompatible with new knowledge about how the oceans and coastal waters function as a whole. Our policies are fragmented, both institutionally and geographically". *Congressional Record*, September 21, 2004, pp. E1665~1666. It is such considerations that led Rep. Farr and his ocean caucus colleagues to introduce H.R. 4900 in the 108th Congress.

the face of other political demands on the budget?

Such questions raise the specter that rather than seeking improvement of ocean policy through some omnibus, all encompassing oceans bill, the more realistic alternative is to move forward on a piecemeal basis through the adaptation and revision of existing legislation or through new legislation that addresses parts of the total perceived problem.<sup>112)</sup> The reality of the dispersion of ocean responsibility and jurisdiction among a host of congressional committees and subcommittees and the lack of a single committee with a comprehensive ocean focus may provide further support for this view. Nonetheless, efforts that could be described as “big picture” or incremental were both in evidence in the 108<sup>th</sup> (2003-2004) and 109<sup>th</sup> (2005-2006) Congresses.

#### **(1) The “Big Picture” Approach: Institutional Change and a National Ocean Policy**

As noted by the U.S. Commission on Ocean Policy, there have been numerous proposals made in the executive branch and in congress for the reorganization of ocean/coastal resource management in the thirty years subsequent to the creation of NOAA.<sup>113)</sup> None were adopted. The creation of the new Commission on Ocean Policy, however, once more opened the possibility for institutional change.

In the 108<sup>th</sup> Congress (2003-2004), two bills that would give NOAA a statutory base were introduced even before the issuance of the final report of the U.S. Commission on Ocean Policy. H.R. 4607, the Administration

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112) This approach has been considered in Lawrence Juda, “Ocean Policy, Multi-use Management, and the Cumulative Impact of Piecemeal Change: the Case of the United States Outer Continental Shelf”, 24 *Ocean Development and International Law* 355-376 (1993).

113) See the U.S. Commission on Ocean Policy, *A Blueprint for the 21<sup>st</sup> Century*, pp. 116-118.

bill, while stipulating among NOAA's purposes the management, protection, and restoration of America's oceans, coasts, and Great Lakes areas, did not contain a broad statement of the U.S. ocean policy nor did it explicitly designate NOAA as the lead agency in ocean/coastal matters. It simply provided that NOAA's objectives were to be pursued "complementary to, and in partnership with" federal agencies, state, and local governments and other actors.<sup>114)</sup> This bill was favored by the Bush Administration over another House bill that was similar in nature but more detailed in stipulating agency structure<sup>115)</sup> the Bush Administration supported the first bill as it provided for more flexibility in internal agency organization.<sup>116)</sup> Both bills would leave NOAA in the Department of Commerce. But in congressional testimony, former NOAA Administrator James Baker once more put forward the idea favored by the Stratton Commission that NOAA should be an independent agency because of its need for greater recognition, support, and autonomy.<sup>117)</sup>

The most far reaching and encompassing bill introduced in the House of Representatives was the Oceans Conservation, Education, and National Strategy for the 21<sup>st</sup> Century Act sponsored by members of the House Oceans Caucus that was said to answer the call of the Pew Oceans Commission and the U.S. Commission on Ocean Policy.<sup>118)</sup> With eleven

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114) H.R. 4607, 108<sup>th</sup>, 2nd session, introduced June 17, 2004 and sponsored by Representatives Ehlers and Gilchrest Section 105(a)(5).

115) H.R. 4546, 108<sup>th</sup>, 2nd session, introduced June 14, 2004 and sponsored by Representatives Ehlers, Bordallo, and Owens.

116) The U.S. House of Representatives, Committee on Science, Subcommittee on Environment, Technology, and Standards, "National Oceanic and Atmospheric Administration Organic Acts", 108th Congress, second session (July 14, 2004).

117) *Ibid.*, p. 32.

118) H.R. 4900, 108<sup>th</sup>, 2nd session, introduced July 22, 2004. See the comments of Representative Farr on behalf of the sponsors of this bill, *Congressional Record*, July 22, 2004, pp. E1500-1501.

titles, this bill was sweeping in its scope, and would establish a comprehensive national ocean policy and a framework for ecosystem-based management and regional planning. Further, it would provide for institutional restructuring, including the creation of regional ocean councils that would be responsible for ecosystem planning, recognize the important roles of state, local, and tribal governments, strengthen ocean science, education, and mass media awareness, as well as establishing a mechanism, the Ocean and Great Lakes Conservation Fund, for the generation of the needed additional funding to accomplish the broad goals of the bill. Introduced late in the life of the 108th congress, this bill was referred to the Committee on Resources and the Committee on Science, and no further action was taken.

Likewise, in the Senate, a bi-partisan group led by Senators Hollings and Stevens proposed passage of a bill, the Fritz Hollings National Ocean Policy and Leadership Act, that would provide for the development of a national ocean policy, would institutionalize the role of an independent NOAA as the lead federal agency in ocean affairs, and address the problems of cross-cutting efforts by multiple federal agencies with ocean responsibilities.<sup>119)</sup> This bill, clearly declared the ocean/atmospheric federal government leadership role of NOAA and gave the NOAA Administrator responsibility to cooperate and coordinate management efforts with other federal agencies and the states, even authorizing the NOAA Administrator to request from the head of any federal to clarify or justify actions taken by that agency that the NOAA Administrator determined to be inconsistent or conflicting

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119) S. 2647, 108<sup>th</sup> Congress, 1<sup>st</sup> session, introduced July 13, 2004. See the comments of Sen. Hollings in introducing this bill in *Congressional Record*, July 13, 2004, pp. S. 8038~8041.

with NOAA functions.<sup>120)</sup> Further, it provided a statutory basis in the context of an explicit national ocean policy that stressed the need for a long-term, coordinated, national program that recognized the linkages between ocean, land, and atmospheric systems and with a view toward protecting and restoring the ocean environment and, thus, ensuring sustainable use of the ocean/coastal environment.<sup>121)</sup> While this bill was approved by the Senate Commerce Committee<sup>122)</sup>, floor action was not taken in the Senate.

With the convening of the 109<sup>th</sup> Congress in January 2005, NOAA Organic legislation was once more introduced in the House of Representatives that, again, would provide a statutory basis for NOAA.<sup>123)</sup> Among the stipulated functions of NOAA was that of “protecting, restoring, and managing the use of the coasts, oceans, and Great Lakes through ecosystem-based research, development, demonstration, and management”. H.R. 5450, section 3(c)(8). Yet, while giving this responsibility to NOAA, the legislation explicitly states that it does not change the responsibility or authority of any other federal agency and, further, specifically stipulates that it does not provide NOAA with any new regulatory authority.<sup>124)</sup> These latter provisions were added to the bill after a jurisdictional clash between the House Science Committee and the House Transportation and Infrastructure Committee that once again underscores the reality of

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120) S. 2647, 108<sup>th</sup> Congress, 2nd session, introduced July 14, 2004. Sponsored by Senators Hollings, Stevens, Inouye, and Gregg. See section 208.

121) *Ibid.*, section 103.

122) Senate Committee on Commerce, Science, and Transportation, Fritz Hollings National Ocean Policy and Leadership Act, Senate Report 108-407, 108th Congress, 2nd session (November 10, 2004).

123) H.R. 50, 109<sup>th</sup> Congress, 1<sup>st</sup> session, introduced January 4, 2005, replaced by H.R. 5450, 109<sup>th</sup>, 1<sup>st</sup>, May 22, 2006.

124) *Ibid.*, section 12.

jurisdictional and “turf” considerations that may be expected in governmental reorganization efforts. These amendments clarify the fact that the legislation does not grant NOAA any new regulatory authority<sup>125)</sup> thus, if this bill becomes law, NOAA would not have the ability, beyond what it presently has, to compel action by other agencies of the federal government in the furtherance of its ecosystem-based management mandate. Further, while stipulating the mission and functions of NOAA, namely those it already has, this bill does not establish a national ocean policy with overriding goals and objectives.<sup>126)</sup>

As noted above, division of turf among different House Committees have complicated the task of passing a NOAA Organic Act. In the 109<sup>th</sup> Congress, the House Science Committee was able to bring its version of an organic act, H.R. 5450, to the floor but the House Resources Committee, with jurisdiction over the marine and coastal aspects of NOAA, failed to take any action on the bill and address the issues within its jurisdiction. Thus, while the bill did win the approval of the House of Representatives on September 20, 2006, it does not provide needed guidance on ocean/coastal management issues. Accordingly, this bill has been characterized as “half a bill” by supporters of a NOAA Organic Act, and

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125) House of Representatives, Committee on Science, “Science Committee Passes NOAA Organic Act”, (June 14, 2006). Online at <[www.house.gov/science/press/109/109-279.htm](http://www.house.gov/science/press/109/109-279.htm)>.

126) The United States Congress, House of Representatives, Committee on Science, “National Oceanographic and Atmospheric Administration Act”, House Report 109-545 (June 29, 2006). According to this report, “The Committee does not view this Act as changing the current mission of NOAA”. Under this legislation, NOAA, however, now would have the authority to promulgate rules and regulations without going through the Secretary of Commerce. See section by section analysis, Section 4. According to the Congressional Budget Office the total fiscal impact of this bill due to additional reporting requirements and minor personnel changes would be less than \$500,000 annually. See Congressional Budget Office Cost Estimate, Section X, dated June 19, 2006.

characterized as a National Atmospheric Administration Act, rather than a National Oceanic and Atmospheric Administration Act.<sup>127)</sup> House supporters of a “full” NOAA Organic Act expressed anger that the House Resources Committee did not act, resulting in adoption of a bill that was “seriously flawed” and suggestive of “disinterest” in ocean issues on the part of the House Resources Committee.<sup>128)</sup>

The most comprehensive and detailed proposals for ocean policy reform were contained in two bills, one in the House, the other in the Senate. Both H.R. 2939, the Oceans Conservation, Education and National Strategy for the 21<sup>st</sup> Century Act, and S. 1224, the National Oceans Protection Act encompassed comprehensive approaches to ocean policy and management.

H.R. 2939 is a complex and lengthy bill that seeks to “to secure, for present and future generations of people of the United States, the full range of ecological, economic, educational, social, cultural, nutritional, and recreational benefits of healthy marine ecosystems”.<sup>129)</sup> It would accomplish this broad and ambitious goal by establishing a comprehensive ocean policy, together with standards to measure compliance, consolidate and restructure federal ocean programs, and promote sustainable ocean uses and management.<sup>130)</sup> Steeped in concern with maintenance of marine ecosystems, the sweep of this bill is enormous and would require that any

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127) On the floor discussion in the House of Representatives of this legislation, see *Congressional Record*, September 20, 2006, pp. H6761~6765.

128) *Ibid.* See, for example, the comments of Reps. Farr and Pallone, pp. 6762 and 6764, respectively.

129) H.R. 2939, 109<sup>th</sup> Congress, 1<sup>st</sup> session, The Oceans Conservation, Education and National Strategy for the 21<sup>st</sup> Century Act, introduced June 16, 2005, section 3. Section 101 lays out the character of the comprehensive ocean policy, stressing the importance of ecosystem protection and sustainability, the need to apply precaution, the use the best available scientific, social, and economic information to make decisions, and to provide for transparency and accountability.

130) *Ibid.*



action taken by the federal government, including the issuance of a license or permit, or by anyone using federal funds affecting the United States ocean waters or ocean resources to be consistent with the protection and maintenance of healthy marine ecosystems. Any covered action could proceed only if is not likely to significantly harm the health of any marine ecosystem or significantly impede the restoration of a marine ecosystem.<sup>131)</sup>

Institutionally, the bill provides a statutory basis for NOAA, explicitly recognizing its ocean leadership role with the mandate to “act as the nonmilitary Federal agency with responsibility for providing oversight of all United States ocean waters and ocean resources.”<sup>132)</sup> In this capacity NOAA is to report provide Congress with a report every three years on the status of marine ecosystems, trends in use, but, as well, a review of the programs and covered actions of the entire federal government, state and local governments, and nongovernmental entities or individuals, together with recommendations for future legislation.<sup>133)</sup> While maintaining NOAA in the Department of Commerce (DOC), and providing that the NOAA Administrator is subject to the policy direction of the DOC Secretary, the bill is authorizes the Administrator to “exercise independent control of its budget allocation, formulation, and expenditures” and provide budget requests directly to the Office of the Management and the Budget which is to consider the requests in the context of natural resource programs.<sup>134)</sup>

The House bill was again referred to both the Committees on Resources and that on Science. But rather than acting on the bill itself, an attempt was made in the House by Rep. Gilchrest, chairman of the House Resources

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131) *Ibid.*, sections 111(a) 4(a).

132) *Ibid.*, section 201(a).

133) *Ibid.*, section 202(d).

134) *Ibid.*, section 202(d)(9) and (10).

Committee, Subcommittee on Fisheries and Oceans, to establish a task force composed of House members to develop recommendations for a national ocean policy.<sup>135)</sup> According to Rep. Gilchrest the task force was need to sort out ocean policy because the legislative actions needed to address the recommendations of the U.S. Commission on Ocean Policy cut across the jurisdiction of a variety of House Committees including: the Resources Committee, the Science Committee, the Transportation Committee, the Agriculture Committee, the International Relations Committee, the Education Committee, and the Financial Services Committee.<sup>136)</sup> On the one hand, frustrated House Democrats saw this legislative maneuver as an effort to put off consideration of H.R. 2939 and, with the support of some Republican colleagues, were able to prevent adoption of the task force resolution.<sup>137)</sup> On the other hand, no action has been taken on H.R. 2939 as the 109<sup>th</sup> Congress moves toward its close.

S. 1224, the National Oceans Protection Act of 2005, introduced by Senators Boxer and Lautenberg, also provided a comprehensive package

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135) H.Res. 599, 109<sup>th</sup> Congress, 1<sup>st</sup> session.

136) See *Congressional Record*, December 14, 2005, p. H. 11564.

137) See *Congressional Record*, December 14, 2005, pp. H. 11561-H. 11567. In the words of Rep. Matsui of California, "The bill before us today would spend \$400,000 of taxpayer money to establish a House Task Force on Ocean Policy. Quite simply, it is duplicative and wasteful. There is already a standing House committee to deal with ocean policy that professional staff already have in place." To this, Rep. Pallone added: "Its task will literally be to write a report on a report [reference is to the report of the U.S. Commission on Ocean Policy] that itself is already quite prescriptive in its instructions to Congress. We don't need to study what is wrong with the oceans. We don't need more reports. What we need now is action, real action, not this task force... The truth is the real obstructionists are the Republican leaders and the Republicans on the Resources Committee, not all, but most, who have refused to allow a comprehensive consideration of major ocean issues this entire year." And Rep. Farr, sponsor of H.R. 2939 observed that "What is happening is that this task force that is before the House today is just a way of delaying, stalling and not getting anything done". *Congressional Record*, December 14, 2005, pp. H. 11563~11564.

with which to advance ecosystem-based ocean governance. With a number of provisions similar to those seen in the H.R. 2939, this bill called for the establishment of a coordinated, encompassing national ocean policy that recognized linkages among ocean, land, and atmospheric developments and establishing NOAA as the lead federal agency in ocean and atmospheric affairs.<sup>138)</sup> The stated purpose of this bill “is to secure, for present and future generations of people of the United States, the full range of environmental, economic, educational, social, cultural, nutritional, and recreational benefits of healthy marine ecosystems.”<sup>139)</sup> As is the case with the House bill, this proposed legislation is ambitious in intent and bold in the means to attain this goal. The Senate bill was sent to the Committee on Commerce, Science, and Transportation and there too no legislative action, in terms of hearings or committee consideration of the Senate bill, has taken place. Rather, in August of 2006 the National Ocean Policy Study Subcommittee of the Senate Commerce Committee held a day of hearings on the general subject of the “State of the Oceans 2006”.<sup>140)</sup>

## (2) The Incremental Approach

While legislation that addresses particular ocean/coastal problems may be characterized as sectoral in nature, in fact, depending on their substance, they may serve as significant devices to advance the ecosystem-based management approach to ocean uses favored by the Pew and the U.S. Commission on Ocean Policy. Several examples of such legislation are considered below.

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138) S. 1224, 109<sup>th</sup> Congress, 1<sup>st</sup> session, introduced June 9, 2005. See sections 2, 102, and 103.

139) *Ibid.*, section 3.

140) These hearings have not yet been published. The prepared testimony of witnesses may be found on line at <[commerce.senate.gov/public/index.cfm?FuseAction=Hearings.Hearing&Hearing\\_ID=1788](http://commerce.senate.gov/public/index.cfm?FuseAction=Hearings.Hearing&Hearing_ID=1788)>.

## ① Fisheries Management

In the 109<sup>th</sup> Congress a variety of bills were introduced addressing specific problem areas such as aquatic invasive species<sup>141)</sup>, fisheries science and management<sup>142)</sup>, marine mammals<sup>143)</sup>, coastal barriers<sup>144)</sup>, and ocean habitat protection.<sup>145)</sup> Among the bills that could be seen as advancing particular recommendations made by the U.S. Commission on Ocean Policy were several that sought to reauthorize or amend the Magnuson-Stevens Fishery and Conservation Act, the basic federal law applying to fisheries management.

Over time the original Magnuson Act has been reauthorized and amended. While the original act that became law in 1976<sup>146)</sup>, focused largely on the need to control access to American fishing grounds by foreign fishermen, reauthorization, especially in 1996<sup>147)</sup> gave attention to issues such as reducing bycatch<sup>148)</sup>, identifying and protecting essential fish habitat<sup>149)</sup>, redefining the term “optimum yield” in such a manner as to reduce pressures on fisheries<sup>150)</sup>, and rebuilding over-exploited fish stocks so as to

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141) H.R. 1591, National Aquatic Invasive Species Act of 2005, introduced April 13, 2005.

142) H.R. 1431, Fisheries Science and Management Enhancement Act of 2005, introduced March 17, 2005.

143) H.R. 2130, Marine Mammal Protection Act Amendments of 2005, introduced June 5, 2005.

144) H.R. 3552 Reauthorization of the Coastal Barrier Resources Act, introduced July 27, 2005.

145) H.R. 2673, Ocean Habitat Protection Act, introduced June 26, 2005; H.R. 3469, Coral Reef and Protection Act of 2005, introduced July 27, 2005; H.R. 3778, Bottom Trawl and Deep Sea Coral Habitat Act, introduced September 14, 2005.

146) The Fisheries Management and Conservation Act, P. L. 94-265, (April 13, 1976).

147) The Sustainable Fisheries Act, P.L. 104-297 (October 11, 1996).

148) *Ibid.*, see, for example, sections 101(8)(b); 105(b) and(c); 106(b); and 108(11).

149) *Ibid.*, see, for example, sections 101; 102(10) that defines “essential fish habitat” as “those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity” and section 108.

150) *Ibid.*, section 102(28). In determining optimal yield the 1996 Sustainable Fisheries Act allows only the reduction, as opposed to the earlier FCMA wording permitting the modification,

protect resource and ecological sustainability.<sup>151)</sup> Moreover, the 1996 reauthorization specifically required that the Secretary of Commerce create an advisory panel to report to Congress on the extent of current application of ecosystem principles to fisheries management and on additional steps that need to be taken to further advance ecosystem-based management of fisheries.<sup>152)</sup> The resulting congressionally mandated report provided a number of recommendations to the regional fishery management councils that would serve to widen the perspective of the decision making process of the councils so as to protect ecosystem integrity.<sup>153)</sup>

The Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006, S. 2012, was approved with unanimous consent by the U.S. Senate on June 19, 2006 ; the committee report on that bill specifically notes that the Commission was a catalyst in shaping provisions and moving this legislation forward.<sup>154)</sup> This proposed legislation explicitly supports an ecosystem-based approach to fisheries management, clarifying “existing statutory authority to incorporate ecosystem considerations” in fishery management plans, and authorizing, on a discretionary basis, the inclusion of measures for the conservation of non-target species and habitat in those plans.<sup>155)</sup> Within 180 days after

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upward or downward, of total catch based on maximum sustainable yield by any relevant social, economic, or ecological factor. The original wording is found in the FCMA, section 3(18)(B).

151) *Ibid.*, see, for example, sections 106, 108, and 109(e).

152) *Ibid.*, section 207.

153) A Report to Congress by the Ecosystems Principles Advisory Panel, *Ecosystem-Based Fishery Management*(1999) on line at <[www.st.nmfs.gov/st7/documents/epap\\_report.pdf](http://www.st.nmfs.gov/st7/documents/epap_report.pdf)>.

154) The U.S. Senate, Committee on Commerce, Science, and Transportation, “Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2005”, Senate Report 109-229, 109<sup>th</sup> Congress, 2nd session (April 4, 2006).

155) *Ibid.*, pp. 10~11 and S.2012, section 105.

passage, this legislation would require that the Commerce Secretary, in consultation with the regional councils, undertake a “complete a study on the state of the science for advancing the concepts and integration of ecosystem considerations in regional fishery management”.<sup>156)</sup> This study would include consideration of how to ensure participation by a wide range of stakeholders in the development of the ecosystem-based approach and an evaluation of the lessons learned from the experiences to date of the regional councils in attempting to implement ecosystem-based management.

In particular, the bill contained a number of elements that reflect the ecosystem approach endorsed by the Commission addressing the need to control total allowable catch and overfishing, bycatch, overcapacity, and environmental impacts of fishing. This bill would require that Regional Fishery Management Councils establish catch limits at optimal yield for each managed fishery and ensure that any excessive catch be deducted from the following year’s limit.<sup>157)</sup> Further, it seeks to increase the role of science in decision making by requiring that the Scientific and Statistical Committees (SSC) of the Councils provide the Council with recommendations for annual catch limitations.<sup>158)</sup> While the bill does not absolutely bind the Council to the SSC recommendations because of the fear that to do so would make the process too rigid and not allow for unique circumstances, the Commerce Committee in its report clearly expresses the expectation that the SSC recommendations will be normally be followed and meaningfully utilized.<sup>159)</sup>

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156) S.2012, section 210.

157) S.2012, section 104.

158) *Ibid.*, section 103(b).

159) The U.S. Senate, Committee on Commerce, Science, and Transportation, “Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2005”, Senate Report 109-229, 109<sup>th</sup> Congress, 2nd session (April 4, 2006), pp. 17~19.

Under its terms, the Commerce Secretary in consultation with the public, the Councils of Environmental Quality, and the Regional Fisheries Management Councils, is to develop a uniform, fishery management, specific environmental review process that meets NEPA review requirements and appropriate timelines for fishery management decisions under the Magnuson-Stevens Act.<sup>160)</sup> The expressed congressional intent of this last action is to streamline the environmental review, to make it work in the context of fishery management.<sup>161)</sup> With a systems view, the bill would establish a bycatch-reduction engineering program to develop fishing technology that would decrease bycatch mortality.<sup>162)</sup> Overcapacity in the fishing industry, in the face of reduced federal funding, would be addressed by new procedures to encourage, with industry participation, voluntary capacity reduction programs.<sup>163)</sup> Recognizing the need for additional funding to accomplish its objectives, the bill directs the Secretary of Commerce to establish a fishery conservation and management fund that he would use on a regional basis to further data collection and analysis on fisheries, marketing, consumer education, and assistance to fishermen to accomplish gear modification. The fund, however, would not be supported by federal appropriations but rather from the sale of quota set aside by a Council and donations from state and local authorities and private organizations.<sup>164)</sup>

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160) *Ibid.*, section 107.

161) The U.S. Senate, Committee on Commerce, Science, and Transportation, "Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2005", Senate Report 109-229, 109<sup>th</sup> Congress, 2nd session (April 4, 2006), p. 8.

162) S. 2012, section 117.

163) The U.S. Senate, Committee on Commerce, Science, and Transportation, "Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2005", Senate Report 109-229, 109<sup>th</sup> Congress, 2nd session (April 4, 2006), pp. 9-10 and S. 2012, section 113.

164) The U.S. Senate, Committee on Commerce, Science, and Transportation, "Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2005", Senate Report 109-229, 109<sup>th</sup> Congress, 2nd session (April 4, 2006), pp. 39-40 and S.2012, section 208.

Counterpart legislation reported by the House of Representatives is entitled the American Fisheries Management and Marine Life Enhancement Act<sup>165)</sup> and is somewhat different from the Senate bill. For instance, the House legislation reflects concern that the environmental impact assessment process associated with the National Environmental Policy Act has caused unnecessary delay and been utilized by environmental groups to stall or to prevent action by regional fishery management councils. Supporters of the House bill believe that NEPA has been used as a “litigation tool” by some environmental interests and has served to frustrate the work of the regional councils.<sup>166)</sup> Accordingly, the House bill would allow the Secretary of Commerce to exempt fishery management plans from the traditional application of NEPA if he determines that the actions of the regional fisheries management council “are substantially equivalent” to NEPA requirements.<sup>167)</sup>

Generally, the House bill is seen by its supporters as being more flexible in approach than the Senate bill in regard to the rebuilding of depleted fish stocks while those who support the Senate bill view the House bill as too focused on the short term needs of fishermen rather than the longer term requirements of the fishery.<sup>168)</sup> Unlike the Senate bill, for example, the House bill does not require a reduction of future catch if present quotas are exceeded. If reauthorization of the Magnuson Act is to succeed in the 109<sup>th</sup> Congress, it will be necessary to reconcile differences in the Senate and

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165) H.R. 5018, 109<sup>th</sup> Congress, 2nd session.

166) The U.S. House of Representatives, “American Fisheries Management and Marine Life Enhancement Act”, House Report 109-567, 109<sup>th</sup> Congress, 2nd session (July 17, 2006), p. 25.

167) H.R. 5018, 109<sup>th</sup> Congress, 2nd session, section 10.

168) Manu Raju, “Fishing Rewrite Proves Slippery”, *Congressional Quarterly Weekly*, August 14, 2006, pp. 2244~2245.



House bills.

## ② Coastal Zone Management

The Coastal Zone Management Act of 1972<sup>169)</sup> represented a fundamental change in policy perspective, advancing integrated, as opposed to sectoral, management of coastal space. Providing incentives to states to undertake coordinated planning for its entire coastal zone, the CZMA established national standards that had to be met to obtain the benefits of federal funding and federal consistency. Among the standards was the requirement for establishing priorities among competing uses that necessitated consideration of the functional interplay of different coastal zone uses and their relative priorities in relation to one another. Operationally, participating states, thus, were encouraged to develop a systems view of coastal use and to move away from discrete, single use management decisions. Under the terms of the CZMA, federal funding supported state planning and implementation efforts and federal consistency gave states the ability to influence and even prevent federal activities that would negatively impact the state coastal zone. The CZMA has had strong congressional support and has been reauthorized several times.

Integrated management is a key element of ecosystem-based management. However, the CZMA encourages integrated approaches in the context of politically defined geographic areas, namely that coming under the jurisdiction of individual states ; it does not provide for regional consistency among the states themselves. Yet, over time the spatial framework of the CZMA has been legislatively modified in one respect. In reaction to a

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169) P.L. 92-583 (October 27, 1972).

decision of the U.S. Supreme Court in *Secretary of the Interior v. California*<sup>170)</sup>, Congress in its 1990 reauthorization expressly stipulated that federal activities or activities requiring a federal permit, such as for offshore oil exploitation, occurring even outside of the defined coastal zone but which have impact in the coastal zone, indeed, are subject to federal consistency requirements.<sup>171)</sup>

The most recent attempt to reauthorize the CZMA, the Coastal Zone Enhancement Reauthorization Act of 2005<sup>172)</sup>, has been passed by the Senate and calls for increased funding of state efforts, providing for increased authorizations for coastal zone grant programs, with 2006 a fiscal year 2006 level of \$125.5 million growing to \$138 million in fiscal year 2010. Further, the bill attempts to speed up the consistency process and, generally, improve state/federal relations over consistency. It also would establish a new coastal community program to support partnerships between state and local communities and among local communities themselves and gives additional emphasis and support for addressing the problem of non-point pollution contained in runoff.<sup>173)</sup> While all of these provisions further the program of recommendations of the U.S. Commission on Ocean Policy, it is interesting to note that in this legislation interstate and regional consistency of action does not receive the explicit reference and support that both ocean commissions appear to find compelling.

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170) 104 S. Ct. 656 (1984).

171) See Coastal Zone Reauthorization Act Amendments of 1990, contained in the Omnibus Budget Reconciliation Act of 1990, P.L. 101-508 (November 5, 1990), Sec. 6208 and House Report 101-964 (1990), p. 970.

172) S. 360 (109<sup>th</sup> Congress, 1<sup>st</sup> session).

173) Senate Committee on Commerce, Science, and Transportation, "Coastal Zone Enhancement Reauthorization Act of 2005", Senate Report 109-137 (September 15, 2005). Online at <[frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=109\\_cong\\_reports&docid=f:sr137.109.pdf](http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=109_cong_reports&docid=f:sr137.109.pdf)>.

Moreover, despite the importance attached to a renewal of the CZMA by the Pew and the U.S. Oceans Commission and despite the passage by the Senate of the CZMA bill during the 109th congress, reauthorization of the CZMA was not even considered by the House Resources Committee that has jurisdiction over such legislation. Thus, reauthorization will not occur at least until the 110th Congress.

### ③ Outer Continental Shelf

The basic legal framework for the management of the mineral resources of the continental shelf of the United States was laid out in two pieces of legislation adopted in 1953. Together they established a dual system of control with the state governments, under the terms of the Submerged Lands Act<sup>174</sup>), responsible for control out to three nautical miles (in the case of Texas and west Florida to three marine leagues) and the federal government, under the terms of the Outer Continental Shelf Lands Act (OCSLA)<sup>175</sup>), responsible for management in the area beyond state jurisdiction.

The OCSLA, in its original form, is a perfect example of the sectoral approach to ocean use management. This legislation has but one focus: the development of the mineral resources, particularly oil and gas, found in the continental shelf areas of the United States. The 1953 act provided the Secretary of the Interior the authority to lease offshore lands for mineral exploitation. While in later years understanding had advanced and recognized that exploitation of the resources of the continental shelf involved possible trade-offs in regard to both onshore and offshore uses,

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174) P.L. 83-31 (May 22, 1953).

175) P.L. 83-212 (August 7, 1953).

such thinking did not appear evident at the time the OCSLA was originally adopted. The legislative history of the 1953 OCSLA shows very occasional concern with fisheries, but only in relation to the possible impact of the legislation on the legal status of the waters above and the need to avoid any precedent that might be used by foreign countries to restrict access to American fishermen. Completely lacking in the legislative history is any indication that oil and gas operations might in some way interfere with fishing or place fishery resources at risk. Likewise, consideration of the potential for ocean pollution from oil spills is markedly absent.<sup>176)</sup>

The purely sectoral focus of the established regime for the continental shelf was to change, however, as a consequence of the 1969 Santa Barbara oil blowout off the coast of California. That large oil spill with its economic and visual impacts received widespread attention in the mass media and among the public, demonstrating that oil extraction had implications for interests beyond the oil industry. Accordingly, it served to widen the public attentive to continental shelf policy and led state officials and representatives to demand meaningful participation in OCS decisions so that state interests could be protected.

In 1978 the OCSLA was amended very significantly and the changes show a substantial shift from the original, sectoral approach seen in the original act in terms of multiplicity of objectives, concerns, and procedural mechanisms.<sup>177)</sup> While the changes adopted were occasioned, in substantial part, by the Arab oil embargo of 1973 which demonstrated American dependence on foreign energy sources and thus sought to improve the

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176) Lawrence Juda, "Ocean Policy, Multi-use Management, and the Cumulative Impact of Piecemeal Change: The Case of the United States Continental Shelf", 24 *Ocean Development and International Law* 355-376 (1993).

177) P.L. 95-372 (September 18, 1978).

efficiency of the federal offshore oil program, it was also very clear that a fundamental intent of the amendments' framers was to broaden the consideration of factors taken into account as OCS decisions were made and to widen and diversify the cast of participants who would be involved in the decision making process. The stated findings and purposes of this new legislation make frequent note of the need for environmental protection, demonstrate full awareness of the OCS as a multi-use area, indicate an explicit awareness of possible use conflicts, the need for appropriate compensation for damage resulting from oil exploitation, and the recognition of the need for coastal state input into federal OCS decisions.<sup>178)</sup>

Substantively, the amendments provide for:

- the preparation by the Secretary of the Interior of a five year leasing program subject to stated provisions including one that stipulates :  
management of the OCS shall be conducted in a manner which considers economic, social and environmental values of the renewable and non-renewable resources contained in the outer Continental Shelf, and the potential impact of oil and gas exploration on other resource values of the outer Continental Shelf and the marine, coastal, and human environments<sup>179)</sup>
- consultation by the Secretary of the Interior with affected states and local governments and Interior Department consideration of the recommendations of a coastal state's governor<sup>180)</sup>
- preparation of environmental studies of areas to be included in oil/gas lease sales<sup>181)</sup>

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178) *Ibid.*, see sections 101 and 102.

179) *Ibid.*, section 208.

180) *Ibid.*

181) *Ibid.*

- provision of compensation funds for economic loss resulting from oil pollution and reimbursement for damages to fishing gear from equipment used in oil exploitation.<sup>182)</sup>

Most recently, with the increase in oil prices, attention has once more turned to the potential of the U.S. offshore energy production. National security and economic concerns have again intensified pressure for expanded exploration and exploitation despite qualms from environmental groups and from coastal states such as California and Florida. This development affects the potential for advancing the objectives laid out by the two ocean commissions in at least two ways. First, it alters the balance of political considerations so that the focus is on energy rather than the oceans. Rising oil prices have a direct and discernible economic impact on all Americans and, thus, have a high degree of political salience and resonate with policy makers in a manner that “oceans”, “integrated management”, and “ecosystem-based management” simply do not.

Second, the current and vociferous discussion in congress on offshore oil has fixed largely on an element that has a long and still unsettled history, namely how the government revenues generated by offshore oil and gas operations should be shared as between the federal government and the states. The 1953 regime embodied in the Submerged Lands Act and the Outer Continental Shelf Lands Act has long been challenged by coastal states, particularly in the Gulf of Mexico, off whose coasts oil exploitation occurs.<sup>183)</sup> In their view the present system is not equitable since the states

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182) *Ibid.*, Titles III and IV.

183) See, for example, Edward A. Fitzgerald, “Outer Continental Shelf Revenue Sharing: A Proposal to End the Seaweed Rebellion”, 5 *UCLA Journal of Environmental Law and Policy* 1-45 (1985).

believe they bear the infrastructure support and environmental costs while the federal government reaps the revenue benefits.

Bills passed by both the House and the Senate during the 109<sup>th</sup> Congress would provide for the opening up of areas that have been off limits for exploitation, with the Senate bill applying only to the Gulf of Mexico while the House bill is much more expansive and applicable to Atlantic and Pacific areas as well. Both bills depart from past practice and provide for very significant revenue sharing by the federal government with coastal states from outer continental shelf activity off their coasts, beyond the so-called 8(g) area, that is the three mile area immediately beyond state waters that already generate benefits to coastal states.<sup>184)</sup>

If such legislation becomes law, then funds that the U.S. Commission on Ocean Policy would be the base of support for an Ocean Trust Fund for all coastal states would no longer be available and a new source of financial support would need to be identified. The Senate bill does, however, specify that funds shared with the proximate coastal states, and political subdivisions thereof, are to be used for coastal and fisheries restoration and mitigation of the environmental impacts of OCS operations. S. 3711, section 5(d). The House bill is different in this regard and does not require that funding shared with states and their subdivisions be used for coastal or ocean programs ; instead it gives them wide discretion in the use of this

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184) See the Deep Ocean Energy Resources Act of 2006, H.R. 4761, 109<sup>th</sup> Congress, 2nd session, section 7 and the Gulf of Mexico Energy Security Act of 2006, S. 3711, 109<sup>th</sup> Congress, 2nd session, section 5. Note that section 8(g) of the 1978 amendments to the OCSLA provided that coastal states were to receive a "fair and equitable" division of revenues generated from the leasing of lands within 3 miles of their seaward boundary where oil and gas pools or fields underlay both the OCS and lands subject to the jurisdiction of that state. See also, Outer Continental Shelf Lands Act Amendments of 1985, Public Law 99-272 which mandated that 27 percent of all revenues from production within 3 miles seaward of the federal/state boundary be given to the coastal states.

funding, including the option of cutting taxes.<sup>185)</sup>

#### ④ Mariculture

Offshore aquaculture was highlighted in the report of the U.S. Commission on Ocean Policy as an example of an activity subject to overlapping and confusing agency responsibilities, a situation that serves to prevent industry development and not providing the needed level of environmental protection.<sup>186)</sup> In light of growing interest in marine aquaculture (mariculture), legislation was introduced in the 109<sup>th</sup> Congress by Senators Stevens and Inouye to establish a permitting system for such activity and sought to ensure that mariculture operations would be compatible with other uses of the exclusive economic zone.<sup>187)</sup> Under its terms the Department of Commerce, the designated permitting authority, is to consult with other federal agencies to make certain that environmental standards are met, that risks to marine fish stocks and marine ecosystems are considered, and that mariculture operations are compatible with navigation, fishing resource protection, recreation, defense, mineral exploitation and other offshore activities.<sup>188)</sup> Further, the Secretary of the Interior could require and enforce additional conditions on the mariculture permittee to ensure that mariculture operations are compatible with activities authorized under the terms of the Outer Continental Shelf Lands Act.<sup>189)</sup>

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185) H.R. 4761, section 7(f).

186) The U.S. Commission on Ocean Policy, *An Ocean Blueprint for the 21<sup>st</sup> Century*, p. 101.

187) National Offshore Aquaculture Act of 2005, S.1195, 109<sup>th</sup>, 1<sup>st</sup> session (June 8, 2005).

188) *Ibid.*, section 4(d).

189) *Ibid.*, section 4 (h).



### 3) Problems with the Incremental Approach

While some of the legislative efforts noted above may serve to advance integrated ocean management and elements of ecosystem-based management, it is apparent that the adoption of positive measures are subject to a process of ebb and flow, with a mix of some advances and some setbacks due to the operation of a wide variety of political pressures, the whims and preferences of particular legislators and of executive branch officials, and a of lack of focus on the big ocean/coastal picture. Indeed, the lower level of funding for NOAA recommended by the Bush Administration noted above was reduced still further by almost \$300 million for fiscal year 2007 by the House of Representatives in its relevant appropriations bill.<sup>190)</sup>

If cumulative incremental change is to provide the model with which to move forward, it could strongly benefit from a broad national ocean policy framework directive. This directive would underscore the importance of the ocean/coastal environment and lay out objectives and principles to provide needed rationale, guidance, and standards for management efforts in different functional areas. And it would serve to ensure that activities affecting the ocean/coastal environment are considered within a systems, rather than a sectoral, context. The United States has ocean policies; what it is lacking is an overall, congressionally mandated ocean policy.

As seen above, legislation that would establish such a policy has been introduced in the 108<sup>th</sup> and 109<sup>th</sup> Congresses but has not been considered, let alone adopted. The leadership and priorities of these congresses have

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190) H.R. 5672 and House of Representatives, Science, State, Justice, Commerce, and Related Agencies Appropriations Bill, Fiscal Year 2007, House Report 109-520 (June 22, 2006), pp. 83~93.

not been hospitable to such legislation and the political pressure to move this legislation forward has been absent. A new congress, with different leadership, however, may be more prepared to give a higher priority to the oceans and be more supportive of the need for an ocean policy.

It is clear, too, that some institutional change is needed to ensure coherency among the different elements of ocean policy both in terms of policy formulation and administration and in regard to the budgetary process. Despite the work and recommendations of the two latest national ocean commissions, Congress has continued to demonstrate an inability even to adopt a NOAA Organic Act that provides legislative sanction for what NOAA is already doing. And while, there is evidence of some organizational change within NOAA, the essential matter of interdepartmental and interagency coordination needs to be given the careful consideration that is required. The lead role of NOAA in ocean use management should be acknowledged and mechanisms are needed to address the problem of use conflicts and interagency differences. Further, the development of a coherent ocean budget that considers the interplay of the multiplicity of ocean programs across the executive branch and seeks to emphasize and maximize the positive synergy of the various executive branch efforts is needed. Strong leadership and commitment in both the highest levels of the executive branch and of key members of congress is required if change of the type recommended by the U.S. Commission on Ocean Policy is to occur and succeed.

## Chapter III

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# Evolution of Korean Oceans Policy

### 1. Korea's Coastal Resources

Comparing the small land of 99,291 square kilometer, Korea has a long coastal line of 11,542 kilometer and numerous islands. This comes from a much indented coastline along the west and south regions including many rivers that empty to the sea in these regions.<sup>191)</sup> The ratio of its coastline to land is one of highest in the world with 24.4 kilometers per thousand square kilometers. Some 83% of Korea's 2,393 square kilometers of tidal wetlands lie along the west coast, where the high tidal range and shallow depth produce wide expanses of mud flats and extensive salt marshes along this highly indented coastline.<sup>192)</sup>

Korea coastal sea is composed of East Sea, South Sea, and Yellow Sea. The management area of above coastal sea of 447,000 square kilometer is about 4 times of the national land. The continental shelf of South and Yellow Sea is 345,000 square kilometer. Korea's wetlands are one of five biggest wetlands in the world and important habitat in fisheries and marine

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191) Heung-Dong Lee and Hak-Bong Chang, "Economic Valuation of Tidal Wetlands in Korea: Economic and Policy Implication", *The First Annual Korea-U.S. Marine Policy Forum-Marine Policy and the Korean Economy: Key Issues and Opportunities* 5.2.1-5.2.18. Korea Maritime Institute and University of Rhode Island (1998).

192) Cho, D. O. and S. B. Olsen, "The Status and Prospects for Coastal Management in Korea", *Coastal Management* 31: 99-119, 2003.

ecosystem.

Korea is traditionally a maritime nation. Along its coast are a string of some two thousand villages and hamlets, the majority of which depend on the sea for their livelihood. Korea's coastal municipalities and districts that border the coastal zone comprise approximately one third of the land space and a similar share of the population.

East Sea is wide and depth is deep comparing South Sea and Yellow Sea. Most coastal line is rocky and there is no large port. But the beaches are beautiful. There is no large river and the small rivers are short because large mountains are near the coastal lines. Because of small difference (0.2-0.3 m) of high and low tides, there are no wetlands. Except summer the temperature is low. Fishers are abundant because of cold and warm currents.

Most of South Sea is continental shelf and average depth is 101 meters. There are two large rivers (Nak-Dong River and Sum-Jin River) flowing into South Sea. Most coastal lines are complex and there are many bays. South Sea is valuable coastal resources for tourism because of clean water, many beautiful islands and bays. Also appropriate water temperature, sea depth, and many bays are natural benefits for aquaculture. However, water quality of South Sea is threatened many industrial complexes, coastal cities and ports, and dense aquaculture. Most of red tides have been occurred in the South Sea.

Yellow Sea is a semi-closed sea enclosed by China and the Korean peninsula. Average depth is 44 meters. The temperature rises to 25-27 Centigrade in summer and falls to 2-8 Centigrade in winter. Because of large amount of fresh water input, the degree of salt is low comparing the East and South Sea. Three large rivers (Han, Keum, Young-San) flow into West Sea. Because of big differences between high and low tides and plains

in the coastal area, large wetlands are developed and about 82.7 % of total wetlands are in the west coast. Yellow Sea is also good for aquaculture because of good habitat of wetlands and proper water temperature. However, many parts of wetlands are good target for reclamation planning and large industrial complexes, coastal cities, and agriculture.<sup>193)</sup>

Korea's economy is strongly oriented toward marine and coastal activities and is becoming more ocean-oriented.<sup>194)</sup> Hwang and Yoon pointed out that the ocean sector has played a central role in Korea's economic boom. Korean shipbuilding now ranks first or second in the world, shipping in ninth, and fisheries ranks fifth. However, fishing is shrinking while manufacturing and perhaps service-oriented activities, including coastal tourism, are expanding. Between 1991 and 1995 the ocean sector grew, in terms of gross output, much faster than the overall GDP, by 17.19%. Despite this dramatic expansion, Hwang and Yoon conclude that a revised approach is needed.

Until very recently, the development of the ocean industry in Korea has been monotonously pursued in the context of economic growth, but not of sustainable development. As a consequence, there have been problems of external diseconomies such as overexploitation of ecologically limited ocean resources and deterioration of marine and coastal environments. These problems impair the ocean's ability to replenish resources and, in turn, limit

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193) Cho, D. O. 2001. Sharing lessons on ICZM in the Asia Pacific region: Experiences of ICZM in Korea. In *Impacts of population and markets on marine environment: Perspective of the Asia-Pacific economies*, 22-35. Pukyong National University-University of Washington Joint Seminar Proceeding. Busan, Korea: College of Fisheries Science, Pukyong National University.

194) Hwang K. H. and D.G. Yoon. 1998. Contribution of ocean industries to the Korean economy. In *The First Annual Korea-U.S. Marine Policy Forum – Marine Policy and the Korean Economy: Key Issues and Opportunities*, 2.2.1-2.2.19. Kingston, RI: Korean Maritime Institute and University of Rhode Island.

the potential growth of Korea's ocean industries. Hence, to maintain the growth of marine-related industrial activities, a more effective framework for ocean management should be established under the context of sustainable development.

## **2. Ocean-Related Institutional Arrangement before MOMAF**

### **1) Ocean-Related Institutional Arrangement in 1945**

As other governmental agencies, ocean-related administration was under the authority of the U.S. Armed Forces in 1945. In November 1946, the Maritime Transportation Bureau was established in the Ministry of Transportation. In March 1946, the Fisheries Bureau was established in the Ministry of Agriculture, whose functions were fishing, aquaculture, manufacture, and facilities.

### **2) Ocean-Related Institutional Arrangement in the beginning of Korean Government**

In July 1948, the Ministry of Transportation was created and its functions were the land transportation, water transportation, and air transportation. The Shipping Transportation Bureau was in charge of sea transportation, statistics, port management, hydrographic, navigational channels, vessel inspection, shipbuilding, seamen, berth management, etc. In January 1951,

local offices of the Shipping Transportation Bureau were established. In 1948, the Fisheries management was moved to the Fisheries Bureau of the Ministry of Trade and Industry.

### 3) Ocean-Related Institutional Arrangement after Korean War

The Korean War damaged about 10% of port and shipbuilding facilities and about 35% of aids to navigation and ocean-related administration, which was arranged for two years, was also disturbed. However, the general public started to recognize the coastal transportation as they evacuated by the coastal refuge vessels. Accordingly the government established the First Shipbuilding Plan and Three Years Plan for Restoring Aid to Navigation purchased large vessels.

In July 1955, the Maritime Administration was established under the Ministry of Trade and Industry and its subsidiaries were the Fisheries Bureau, the Shipping Bureau, and the Facilities Bureau. The Maritime Administration was created by integration of most ocean-related policies, such as the shipping management, the fisheries management, the port construction and management, marine police management, shipbuilding. This was a result of integration of ocean-related policies and simplification of ocean-related administration. In December 1955, 9 offices of the Maritime Administration were established at the major ports.

In July 1955, three fisheries-related divisions such as the Fisheries Policy Division, the Fishing Division, and the Manufacturing Division were created under the Fisheries Bureau. Also the Ocean Guard Division was established under the Fisheries Bureau, whose major authority was to monitor foreign fishing vessels within the Peace Line.

#### 4) Ocean-Related Institutional Arrangement after 5.16

In October 1961 after the 5.16, according to simplification of governmental agencies, the Maritime Administration was abolished and broken into three parts, that is, the shipping management by the Ministry of Transportation, the fisheries management by the Ministry of Agriculture and Forest, and marine law enforcement by the Ministry of Interior.

#### 5) The Fisheries Administration and Maritime & Port Administration

In 1970s the import and export cargoes increased very sharply and the shipping industry also grew continuously by the increase of import and export cargo and support of the Korean government. In December 1975, the Port Administration was created by integration of port construction service and port management and shipping management. In December 1977, the Port Administration was changed to the Maritime and Port Administration (MPA). In February 1991, MPA subsidiaries, such as 11 Regional MPAs, 13 local offices, Maritime Safety Tribunal, and the Hydrographic Office were established.

In February 1966, the Fisheries Administration (FA) was newly created and the Fisheries Policy Bureau, the Production Bureau, and the Facilities Bureau were under the FA.

In April 1962, the National Marine Police Force was established in the Ministry of Interior for law enforcement in the Korean coastal waters. In 1988, the Marine Pollution Prevention Bureau was created for response the frequent oil spill from the vessels.



### 3. Economic Development and Ocean Industry

The economic development in Korea is a miracle, which has created something from nothing. Long period of the Japanese colony (1910-1945) and the Korea war (1950-1952) made its economy completely devastated with scarce natural resources and densely population comparing small land. The economic development was initiated by a series of “National Economic Development Plans” that have been based on the strategy of importing raw materials and exporting finished goods, among which steel, automobiles, shipbuilding, textiles, and most recently, computer chips figure importantly.

The First National Economic Development Plans was started in 1962 to 1966, the second from 1967 to 1971, the third from 1972 to 1976, and thereafter the fourth, fifth, sixth and seventh through 1996. Through all the seven National Economic Development Plans from 1962 to 1996, Korean economy developed very rapidly and surprisingly. The annual economic growth rate was 8.7% in the 1960s, 7.6% in the 1970s, 9.12% in the 1980s and 7.1% in the 1990s. And thereby GNP per capita has increased from US\$87 in 1962 to US\$249 in 1970, US\$1,598 in 1980 and US\$5,886 in 1990. Korean exports increased from US\$1 billion in 1970 to US\$10 billion in 1977. This took place in only 7 years whereas West Germany and Japan took eleven years and sixteen years respectively.<sup>195)</sup>

In this economic situation the National Economic Development Plans had the strategies that focused the limited resources into some particular manufacturing industries such as the light industry and then the heavy and

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195) Dong-Oh Cho, “Lessons learned from Lake Shiwaha Project” Coastal Management 33: 315-334 (2005).

chemical industry, which has changed as the series of plans passed. In the early of 1960s, the share of the light industry and the heavy and chemical industry was 73.7% and 26.3% but it changed to 22.8% and 77.2% respectively in 1997.

In developing Korea's economy in such a short period, the ocean policy (or ocean governance) has contributed greatly. KMI (Korea Maritime Institute) estimated the portion of the added value of marine industry to GDP at 4.4% in 1998, 4.3 %, 4.5 %, and 5.3% in 2000, 2003, and 2010 respectively. However, according to "the Marine and Fisheries Development Basic Plan"(Korea's Oceans Policy) established in 2004, the share of Marine Industry to GDP is about 7.0% and it is planned to increase to 11.3% by 2030.

#### **4. Major Issues and Efforts before MOMAF**

##### **1) Major Issues**

In implementing the seven National Economic Development Plans from 1962 to 1996 the Korean government densely developed and used the marine ecosystem for a short period of time. And the public accepted losses in environmental quality and resources as a necessary and acceptable cost of the development process in the 1960s, 1970s, 1980s, and even early 1990s. As a result, following issues were occurred before establishing MOMAF in 1996.

### **(1) High Demand for Intensive Coastal Development**

The Korean government expected that there would be an intensive coastal development for agriculture, industrial complexes, ports, and coastal cities in implementation of the National Economic Development Plans. So, in 1962, the Korean government enacted “the Public Water Reclamation Act” as soon as “the First National Economic Development Plan” started.

Then why was the coastal development popular? The main reasons are low cost for securing sites and simple administrative procedures :

- The costs of reclamation of wetland and coastal water for development were far cheaper than purchasing land from many private owners.
- Administrative procedures, such as solving conflict, compensation fund raising, legal and administrative support, is very simple comparing purchasing land from many privates owner.

### **(2) Loss of Wetlands**

Korea has very large wetlands (2,393 square km) comparing with small national land and the portion of wetland to national land is 2.4%. Wetland is very important fishery habitat and produces various and large quantities of fisheries. However, during the last 10 years from 1987 to 1998 about 25.3% of total wetland were lost due to reclamation or filling for expanding of agriculture land or making industrial complex. They said that more than 40% of total wetland was lost since 1945 of independence from Japanese colony.

The reclamation and infilling of tidal wetland, carried out at large scale mostly on the west coast, have caused the loss of important marine habitat and fishing ground. According to the assessment by MOMAF (1998), the total area of Korean coastal wetland was diminished by 30-40% since

1987, and only coastal 2,393 square kilometers of wetlands was left in the west and south coasts. Also the decentralization of administrative power and responsibility gave regional governments strong inducement of reclamation for regional economy development and tax income.

### (3) Declining of Water Quality

Over the last three decades, various pollutants, which were produced by industrial activities and municipalities located along coastal area, have been discharged into the seas. They imposed cumulative impacts on coastal ecosystem and caused serious problem of eutrophication, red tides and mass mortality of marine organisms. Since 1991, coastal water quality measured by COD maintained at the second class standard. Although the COD level showed a decreasing annual trend, the level of nitrogen and phosphorus, which were the main triggering factors of red-tides, marked much higher than the standard.

With the increased activities of cargo transported by ships, Korean marine waters suffered from oil-spill accidents, approximately 300 cases annually. During the period of 1991-1998, total of 3,100 cases of oil-spill accidents took place, discharging 42,500 kiloliters of oil. The spill accidents occurred mostly by oil-tankers, and the major cause was identified as carelessness of crew members.

Korea entered London Dumping Convention in Dec. 1993, which was effected from January 1994. However, ocean dumping increased continuously due to population growth and economic and industrial development.

Due to the declining of water quality and increasing of nitrogen and phosphorus, the number of red-tides occurrence increased continuously.

Period of red-tide in Korea was from April to October, of which lasting period of red-tide was about one week before 1980s, but one to two months after 1980s. Harmful red tides in Korea was about 43 kinds including *Cochlodinium*, *Gymnodinium*, *Gyrodinium*.

#### **(4) Declining Number of Fishers**

Total fisheries products decreased continuously from the peak of 3.5 million ton in 1994. The problems were that all kinds of fisheries products, such as ocean fishing vessel, coastal fishing vessel, aquaculture, and fresh water, were decreasing. The main reasons were the worldwide expansion of EEZ, over exploitation and deteriorated water quality, and loss of aquaculture area due to reclamation. Although aquaculture was very important alternative, frequent red tides and deteriorated water quality made it very difficult. MOMAF's plan was that the rate of aquaculture to total products would increase from 27% in 2000 to 45% in 2030.

Comparing the decrease of total fisheries products, the domestic demand for fisheries products increased rapidly. By the result, the rate of fisheries products to domestic consumption decreased continuously from the peak of 138% in 1980.

In 1990, Korea exported fisheries products 1,058,000 tons (1.5 billion dollars) whereby imported 380,000 tons (368 million dollars). However, in 1997 imports increased to 1,189,000 tons and 1.0 billion dollars. In seven years, imports increased by 313% and 284% by weight and amount respectively.

#### **(5) Decreasing of Fisheries Population**

Despite of strong government policies and support, fisheries population

and fisheries employment decreased continually. The main reason were the deterioration of living condition and reduced income of fisheries. Fisheries income per capita increased 107.9% in ten years from 8,079,000 won in 1989 to 16,794,000 won in 1998. However, in same period, that of agriculture and urban workers increased 117.2% and 162.5% respectively.

#### **(6) Limit of Public Access**

There were many forecasts that coastal tourism would increase rapidly as income increase and work hour decrease, which would require public access to coastal zone. However, public access was limited seriously due to unplanned development and low recognition for public access. Designated places for tourism by laws in coastal zone were national parks, provincial parks, municipal parks, and various tourism purpose districts. But most of them were public beaches for swimming in summer. Survey revealed that there were about 100 places of natural scenic. However, those areas were not developing environmentally. Too many motels, restaurants, and various pleasure facilities deteriorated water quality, destroyed scenic value, and limited public access to coastal zone. Also most harbors, fishing harbors, industrial complexes, and military facilities were constructed for their own purposes and limited public access to coastal zone.

#### **(7) Intensifying Industrial Urban Development**

Korea coastal lands were very densely used. Total 22 industrial complexes, 25 coastal cities, 50 harbors, 415 fishing harbors were sited in coastal zone. Most of the chemical complexes and steel factories were situated in coastal land. In addition all shipbuilding docks and many generators were situated in coastal land.

About 33% of total population lived in the coastal land. Forecasting was that coastal population would increase to 40% of total population and coastal GDP would increase to 50% of total GDP in 2030. The portion of coastal urban area to total coastal land was about 6.0% only, but that of agriculture is 26.0 %. Therefore there would be continuing stress to reclaim wetland and shift agriculture field to urban development.

#### **(8) Growth in Tourism Facilities**

Demand for tourism and leisure increased rapidly with increase of income and leisure hour. Many businesses began to run 5 days a week and 5 day-work was discussed seriously in Korea society at that time. Inland tourism was limited due to traffic jam, crowd of travelers, and inconvenient facilities. Coastal tourism was an emerging industry due to its opposite nature to inland tourism. Yacht leisure would be popular in 2010 when GNP per person would be US\$1,5000 and ocean leisure would be popular when GNP per person would be US\$20,000.

Generally Coastal Tourism was recognized environment-friendly industry and contributes to local economy. Therefore local governments were strongly planning to invest to coastal tourism for local economic development, employment increase, tax revenue. But the problems were that most local governments wanted and planned large tourism facilities in their area and they didn't consider impacts on coastal ecosystem.

## **2) Fragmented Ocean Use Governance**

However, until the establishment of the Ministry of Maritime Affairs and Fisheries in 1996, Korea's ocean policy was sectoral and fragmented

management like other countries: the Fisheries Administration (FA) in charge of fisheries management, the Maritime and Port Administration (MPA) in charge of shipping, port management, and maritime safety management, the Ministry of Commerce, Industry and Energy (MOCIE) in charge of shipbuilding and oil and gas exploitation, the Ministry of Construction and Transportation (MOCT) in charge of wetlands and public waters reclamation, the Ministry of Environment (MOE) in charge of marine environment management, and the National Marine Police Administration (NMPA) in charge of oil spill response and maritime laws enforcement.<sup>196)</sup>

### 3) Recognition of Marine Environment and Resources

Compared to the U.S. and Canada, where the general public recognized the negative effects and issues on their coastal waters and shorelines caused by the fragmented and sectoral management in the 1960s and early 1970s, the general public in Korea became to recognize the value of marine environment and resources and major issues on the coastal waters and shoreline in the 1990s about twenty to thirty years later than the U.S. and Canada.

The recognition of the marine environment and resources of the general public started in the 1990s when a series of maritime accidents occurred and a government reclamation project was confirmed to be an environmental disaster.<sup>197)</sup>

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196) For the ocean-related individual government agencies and individual laws before establishing MOMAF in Korea see Jihyun Lee, "Policy Issues and Management Framework of Chinhae Bay, Republic of Korea", *Ocean & Coastal Management* 38: 161-178 (1998).

197) For the recognition of the marine environment and resources of the general public see Dong-Oh Cho, "Evaluation of the Ocean Governance System in Korea", *Marine Policy* in press (2005).



The most disastrous maritime accident in the coastal sea in Korea was the accident of the Passenger Ship M/V Seo-Hae Ferry at south-western coastal water in 1993, which capsized and sunk soon after leaving the island causing 292 deaths. Although at the time of accident the vessel was overboard and there were strong winds and waves, the most direct cause of the accident was derelict fishing ropes entangled in shafts and propeller. Because there was no marine debris management in Korea, there were so many derelict fishing ropes and nets in the coastal waters, which caused maritime accidents and loss of fisheries production.

M/V Sea Prince, a full loaded VLCC<sup>198)</sup>, was run aground at out-harbor of Kwangyang on July 23, 1997 by the strong wind of a typhoon and spilled 10,000 tons of bunker C, which polluted the coastal waters and shoreline of the south coast of Korea and damaged the large area of aquaculture and deteriorated the marine environment. Although the cargo of crude-oil did not spill, it was the first big oil pollution in Korea. Until the accident, the Korean government (NMPA) policy focused on the military security and there were not established any National Oil Spill Contingency Plan and allocated poor resources for oil spill response. So it took several months in cleaning the polluted waters and shorelines and international cooperation from Japan and Singapore to respond to the spill.

Dense population and development in the coastal land generated much land-based pollutant, which degraded the coastal waters and occurred the red tide frequently especially on the southern sea in Korea. Because of its natural and geographical environment there are dense aquacultures on the southern sea, which were damaged severely by the red tide. However,

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198) Very large crude-oil carrier.

although there were red tide annually and compensation to fishermen by government, there was no policy on prevention of red tide or land-based pollutant or governmental cooperation.

The most representatives of the development-oriented policies are the Lake Shiwha Reclamation Project<sup>199)</sup> and the Saemangeum Wetland Reclamation Project, which were brought the recognition of the value of wetlands and coastal environment of the general public.

The Lake Shiwha was an estuary at the mid-western part of Korea with vast wetlands receiving nutrients from six small rivers, which flowed into and then mixed with the Yellow Sea and the associated 494 square kilometers watershed. Korea's government planned to build a dike 12.7 kilometers in the mouth of an estuary, thereby keeping 180 million tons of freshwater in the lake for agriculture and to create land of 110 square kilometers for agriculture and industrial complex by draining out of associated wetland. The dike was started in 1987 and completed in 1994. As soon as the dike was started, two large industrial complexes and a new city began to be built in the northern part of the Lake. During the building of the dike, large amounts of pollutants from these industrial complexes and the city came into the Lake due to the lack of capacity in the waste treatment facilities. Also at the time of building of the dike, many farms began to expand in the upper area of the watershed, from where large amounts of pollutants also were discharged into the lake. The environmental state of the Lake Shiwha was getting worse since the completion of the dike. In response the government had to open the gates to flow out the polluted water into the sea in 1996 and thereafter opened the gates

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199) For the Lake Shiwha Reclamation Project and its impact see Dong-Oh Cho, "Lessons learned from Lake Shiwha Project", *Coastal Management* 33:315-334 (2005).

frequently to encourage the outflow of the polluted water. Despite the opening the gates to permit the outflow of the polluted water into the sea, the quality of the Lake did not get better but actually became worse as time passed. Finally, in 2001, the government declared the abandonment of keeping freshwater in the Lake and to, instead, keep seawater there by opening the gates frequently. However, the daily inflow of seawater is 16 million tons, which amounts to only 8.9% of the storage capacity of 180 million tons of the lake and therefore cannot circulate or exchange the water enough in the upper area of the Lake. Also the quality of the water in the bottom of the Lake and upper area has not been improved because the gates are 10 meters higher than the bottom of the seabed so the water in bottom can not be circulated or changed.<sup>200)</sup>

The Lake Shiwha Project is dwarfed by the Saemangeum Wetland Reclamation Project further to the south. When completed, this project will include the longest dike in the world, stretching 33 kilometers and filling waters of greater than 10 meters in depth. As with the Lake Shiwha Project, the result is projected to be a freshwater reservoir of nearly 120 square kilometers and 283 square kilometers of reclaimed tidal land. Of the land created, the majority, 62%, is slated for agricultural use, primarily rice production. Of the remainder, 22% will be dedicated to urban area and “public use” and 13% will be for industrial parks.<sup>201)</sup> The Saemangeum Project was planned at the end of the 1980s with construction beginning before the failure of the Lake Shiwha Project. However, since the environmental disaster of the Lake Shiwha Project, the public and NGOs

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200) Dong-Oh Cho, “Evaluation of the Ocean Governance System in Korea”, *Marine Policy in press* (2005).

201) Dong-Oh Cho and Stephen B. Olsen, “The Status and Prospects for Coastal Management in Korea”, *Coastal Management* 31: 99-119 (2003).

recognized the value of the wetlands and estuary and have strongly opposed the Saemangeum Project. So, in the middle of construction, the prime minister established a special committee to reanalyze the economic feasibility of the project, which also brought a severe controversy on the methodology of study among academia and NGOs.

#### 4) Efforts for Integrated Ocean Use Management

Compared to the U.S. (and Canada), where a comprehensive research on the ocean policy was conducted and recommendations for the future action were given before the institutional arrangement, there was no such a comprehensive study or public hearings on the ocean policy before the institutional arrangement in Korea. Instead of a comprehensive research, a feasibility study on creating ocean-related organization was conducted by a small group of academia with support from the prime minister in the early 1990s but neither across the government nor the general public.<sup>202)</sup>

The President Kim Young-Sam, who entered office in 1993 as the first civilian president elected by popular vote after 32 years of military rule, vowed to construct what he termed a “New Korea” with strong leadership based on the legitimacy he gained through a fair election. During his presidential campaign, Kim pledged to set up a Ministry of Ocean Industry, integrating sectoral marine administrations into one institution.<sup>203)</sup>

His pledge was persuasive because a series of maritime accidents and failures of government policies increased the recognition of the general

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202) Dong-Oh Cho, “Evaluation of the Ocean Governance System in Korea”, *Marine Policy* in press (2005).

203) Seoung-Yong Hong and Young-Tae Chang, “Integrated Coastal Management and the Advent of New Ocean Governance in Korea: Strategies for Increasing the Probability of Success”, *The International Journal of Marine and Coastal Law* 12(2):131-161 (1997).

public of the natural value of the coastal waters and resources. The general public thought that something must be done for it.

Three years later after his entering office in 1993, the administration started to set up an ocean-related ministry. So they tried to benchmark from foreign ocean-advance countries. However, at that time (and still at the present moment) there were only two integrated-ocean-related organizations in the world : the Department of Fisheries and Ocean (DFO) in Canada and the National Oceanographic and Atmospheric Administration (NOAA) in the U.S. However, the Korean government wished to establish a more integrated and strong ocean-related organization.

#### **4. Establishment of MOMAF**

On August 8, 1996 the Korean government established the Ministry of Maritime Affairs and Fisheries (MOMAF) in response to a Presidential declaration made on the very first Ocean Day, which was celebrated nationally on May 31, 1996. MOMAF integrated almost all marine administrations into one “superagency”. The basic framework of the Ministry incorporates the Maritime and Port Administration (MPA), the Fisheries Administration (FA), the National Marine Police Administration (NMPA), the Hydrographic Affairs Office and other marine-related agencies.<sup>204)</sup>

The structure and authorities of all the government agencies are provided in the Government Organization Act (GOA). So for establishment of

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204) Seoung-Yong Hong and Young-Tae Chang, “Integrated coastal management and the advent of new ocean governance in Korea: Strategies for increasing the probability of success”, *The International Journal of Marine and Coastal Law*, 12(2):131-161 (1997).

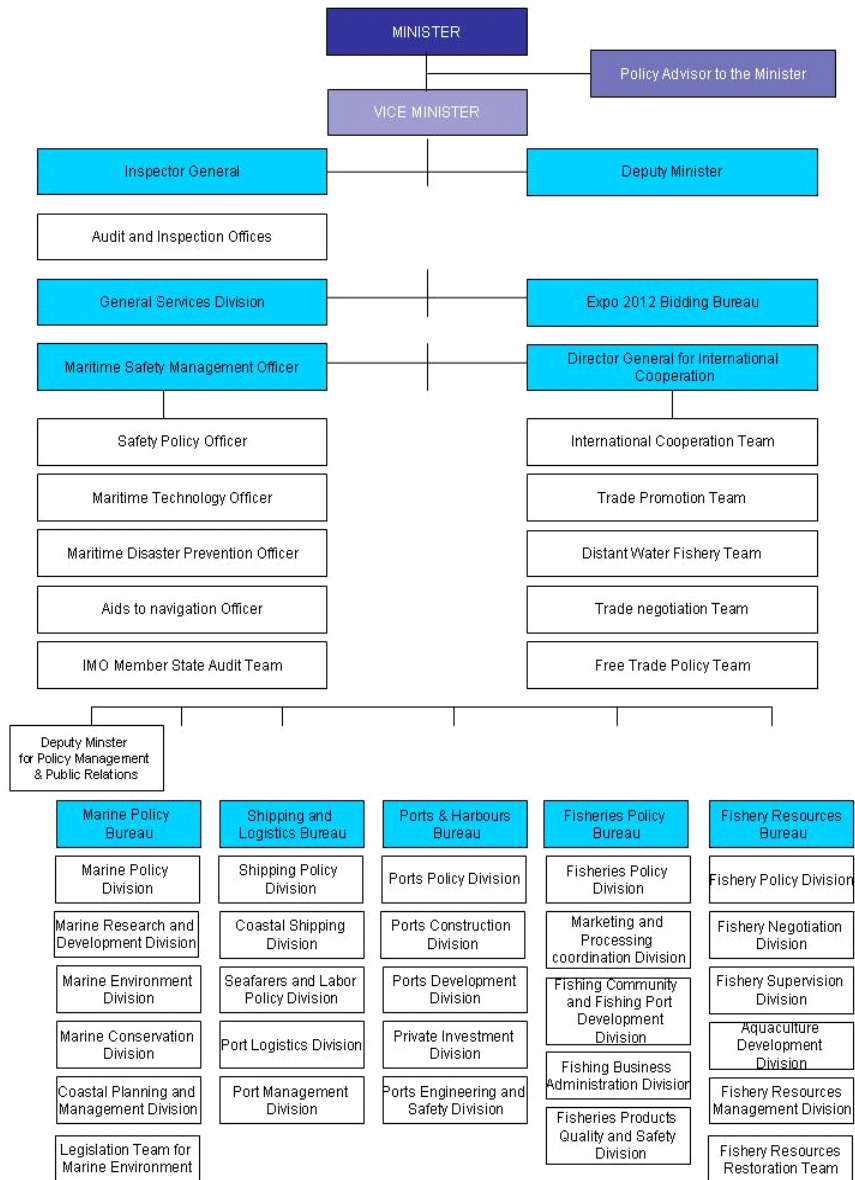
MOMAF, the Korean government revised GOA mandating MOMAF to be in charge of oceans policies as follows (Article 44) : (1) The Minister of MOMAF is in charge of function of fisheries, shipping, ports, marine environment preservation, oceanographic research, marine resources development, marine science technology research and development and maritime safety and judge ; (2) The NMPA, which is in charge of function of police and oil response at sea, is under the Minister of MOMAF.

By the GOA, most of the ocean-related government agencies together with their authorities, such as MPA with shipping and port management, FA with fisheries management, NMPA with maritime law enforcement, Maritime Safety Tribunal with maritime accident investigation and judgment, and National Oceanographic Research Institute with research on oceanographic, were integrated into MOMAF. Also based on the GOA, MOMAF took over marine environment management from the Ministry of Environment (MOE) and public water management and reclamation policy from the Ministry of Construction and Transportation (MOCT). So, most of ocean-related organizations with their authorities integrated into one single administration except shipbuilding, atmospheric forecasting and exploitation of offshore oil and gas.<sup>205)</sup> Shipbuilding and oil and gas exploitation are under the charge of the Ministry of Commerce, Industry and Energy (MOCIE) and atmospheric forecasting is under the charge of Korea Meteorological Administration (KMA).

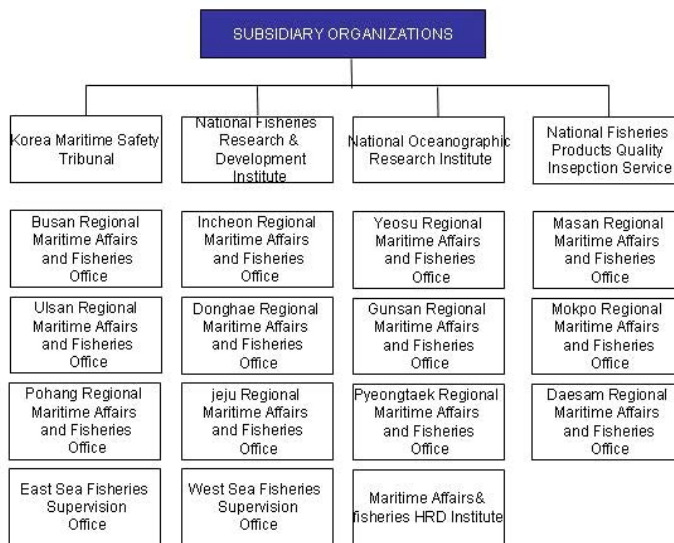
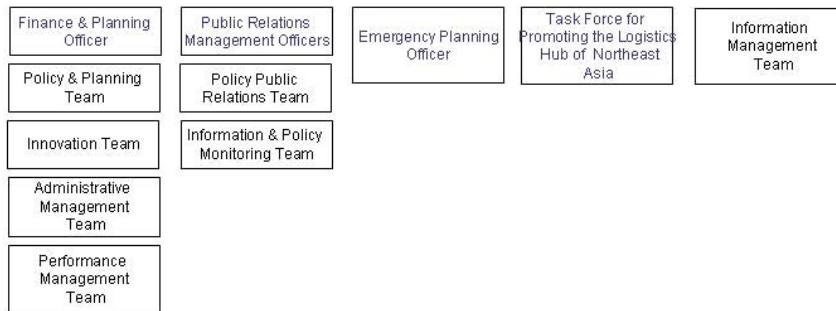
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205) Dong-Oh Cho, "Evaluation of the Ocean Governance System in Korea", *Marine Policy in press* (2005).

〈Figure III-1〉 Organization Chart of MOMAF



〈Figure III-1〉 (continued)





KCG : Korea's Coast Guard is in charge of all maritime police affairs and marine pollution control task. In 1953, the Korean government enacted a Presidential Decree No. 844, establishing that Coast Guard Authority (Busan) belongs to the Ministry of Commerce and Industry, reorganizing the Coast Guard Authority under to Ministry of Commerce & Industry in 1955, reorganizing the Coast Guard Authority belonging to Ministry of Home Affairs in 1962, reorganizing the command of public security to the Department Security in Ministry of Home Affairs, and reorganizing as a independent branch office of MOMAF in 1996. KCG has 1 Deputy Commissioner General, 6 Bureaus, and 23 Divisions in the KCG Headquarters. As a subsidiary, there are a KCG Academy and a KCG Maintenance Workshop. As the special local administrative agency, KCG has 13 Regional Coast Guard Offices nationwide on top of 71 Branch Offices, and 266 Subagencies. KCG has patrol ships, crime response boats, pollution response boats, and aircrafts (airplane, helicopter), etc.

KCG's main services are as follows (use commas between items in list) : search & rescue ; marine security ; marine environment protection ; international affairs ; marine traffic management ; and marine pollution response.

NFRDI : NFRDI (National Fisheries Research and Development Institute) was established in 1921, reorganized in 1949 as the Central Fisheries Experiment Station under the Ministry of Commerce and Industry, renamed in 1963 as the National Fisheries Research and Development Institute, reorganized in 1966 as the National Fisheries Research and Development Institute under the National Fisheries Administration, and reorganized in 1996 as the National Fisheries Research and Development Institute under MOMAF.

NFRDI is actively researching practical technologies to boost the competitiveness of Korea's fisheries industry and to deal with current marine issues. Focusing on aquaculture, the institute has infused advanced technologies into traditional oceanographic research to create high-end fisheries technologies that can virtually turn oceans into fishing farms. It has also placed high priority on the protection of the marine environment.

Fields of R&D are as follows : research for the investigation and the protection of the marine environment ; maintenance of fisheries resources and development of oceanographic technology ; development of methods to reproduce and cultivate useful aquatic organisms ; development of technologies for hygienic management of fisheries resources and processing technology ; genetic improvement of aquaculture species and development of new high value added materials from aquatic organisms.

NFRDI conducts a variety of events and exhibitions on the ocean to raise public interest and understanding: maritime and fisheries education and training ; new curriculum to fit the paradigm shift in human resources development ; on-site training and curriculum focusing on major themes; program to raise teenager's interests in maritime affairs ; training sessions for public servants in relevant division; programs for fishery households to boost the competitiveness of the fisheries industry ; operation of the Fisheries Science Museum.

NORI : NORI (National Oceanographic Research Institute) has greatly contributed to maritime traffic safety and marine development through the issue and distribution of charts, electronic navigational charts, and publications made by oceanographic research around the ports and coastal area in Korea and its analysis of data.

In 1949 NORI was established as the Hydrographic Division under the

Operation Department of the Korea Navy, became a member of International Hydrographic Organization (IHO) in 1957, enacted Hydrographic Act in 1961, was reorganized as Hydrographic Office under the Ministry of Transportation in 1963, and was reorganized as the National Oceanographic Research Institute under MOMAF.

Major functions of NORI are ocean observation, hydrographic survey, coastal survey, basic maps of the sea, marine information network, safety navigation, information for fishery, international cooperation, and marine geographic names.

## 5. Review of MOMAF for Ten Years

### 1) Integrated Ocean Policy

The integrated ocean policy is one of alternatives for the fragmented and sectoral ocean management and many scholars define and recommend integrated oceans policy for ocean governance.<sup>206)</sup>

Although the scholars on ocean governance define “integrated management” differently, it is most likely that the term is the opposite of

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206) For definition of integrated ocean policy see Lawrence Juda, “Considerations in Development a Functional Approach to the Governance of Large Marine Ecosystems”, *Ocean Development and International Law* 30: 89-125 (1999), Kenchington R. and Crawford D, “On the Meaning of Integration in Coastal Zone Management”, *Ocean & Coastal Management* 21: 109-127 (1993), Geoffrey Wescott, “The Development and Initial Implementation of Australia’s ‘Integrated and Comprehensive’ Oceans Policy”, *Ocean & Coastal Management* 43: 853-878 (2000), Arild Underdal, “Integrated Marine Policy – What? Why? How?”, *Marine Policy* 4:159-169 (1980), Biliana Cicin-Sain, “Sustainable Development and Integrated Coastal Management”, *Ocean and Coastal Management* 21: 11-43 (1993).

sectoral or fragmented management.

Underdal argues that the most general purpose of policy integration is to improve outcomes, and the key to this improvement is “internalization of externalities”. Fragmented decisions often produce externalities, here broadly defined as consequences which are not adequately incorporated as decision premises because they fall outside the scope of attention or because of poor aggregation. He suggests that an integrated policy must meet three requirements: comprehensiveness, aggregation, and consistency.<sup>207)</sup>

The integrated ocean management was also addressed in Chapter 17 of Agenda 21. One of the basic recommendations emanating from the historic Earth Summit (United Nations Conference on Environment and Development (UNCED)) held in Rio de Janeiro in June 1992 was that national management of coasts and oceans (including Exclusive Economic Zones) should be “integrated in content and precautionary in ambit”.<sup>208)</sup>

At the beginning of MOMAF, the ocean policy was fragmented and sectoral because the individual ocean-related laws and programs from various agencies were just incorporated into MOMAF. So, first of all, MOMAF tried to streamline the unnecessary overlapping policies based on those individual laws and programs. MOMAF also established a new bureau, the Marine Policy Bureau, to establish and implement new policies that were not tried or neglected before MOMAF.<sup>209)</sup> The representative policies conducted by the bureau are integrated coastal zone management,

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207) Arild Underdal, “Integrated Marine Policy – What? Why? How?”, *Marine Policy* 4:159-169 (1980).

208) Biliiana Cicin-Sain, “Sustainable Development and Integrated Coastal Management”, *Ocean and Coastal Management* 21: 11-43 (1993).

209) There are Marine Policy Division, Marine Research and Development Division, Marine Environment Division, Marine Conservation Division, Coastal Planning and Management Division and Legislation Team for Marine Environment under the Marine Policy Office.

wetlands management, reclamation policy, special area management, marine debris management, marine sand management, and research and development (R&D) of oceans.<sup>210)</sup>

In nature the oceans policy is so broad and interdisciplinary that coordination and cooperation among governmental agencies are vital for its establishment and implementation despite of institutional integration. Juda argues that although the creation of NOAA represented a significant step toward ocean policy centralization, it did not eliminate the reality that a number of civilian federal government departments and agencies still maintained important jurisdictional and programmatic responsibilities relating to ocean/coastal matters.<sup>211)</sup> Although the fragmented ocean-related organizations were integrated into one single agency, MOMAF, the coordination on developing and implementing oceans policy was challenging.

Before MOMAF, the Korean government enacted the Marine Development Basic Act (MDBA, Law No. 3983, 1987) to coordinate the sectoral management of oceans policy which was conducted by multi-governmental agencies. MDBA was a welcome response to the urgent need for a more visionary approach to providing direction for the government's basic policy necessary for marine development, and the even greater need for coordinating inter-ministerial conflicts rationally through the deliberation of the Marine Development Committee (MDC), chaired by the Prime Minister.<sup>212)</sup> However, the Korean government failed to achieve its

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210) Dong-Oh Cho, "Evaluation of the Ocean Governance System in Korea", *Marine Policy* in press (2005).

211) Lawrence Juda, "Changing National Approached to Ocean Governance: The United States, Canada, and Australia", *Ocean Development and International Law* 34: 161-187 (2003).

212) Seoung-Yong Hong and Young-Tae Chang, "Integrated Coastal Management and the Advent of New Ocean Governance in Korea: Strategies for Increasing the Probability of Success", *The International Journal of Marine and Coastal Law* 12(2): 131-161 (1997).

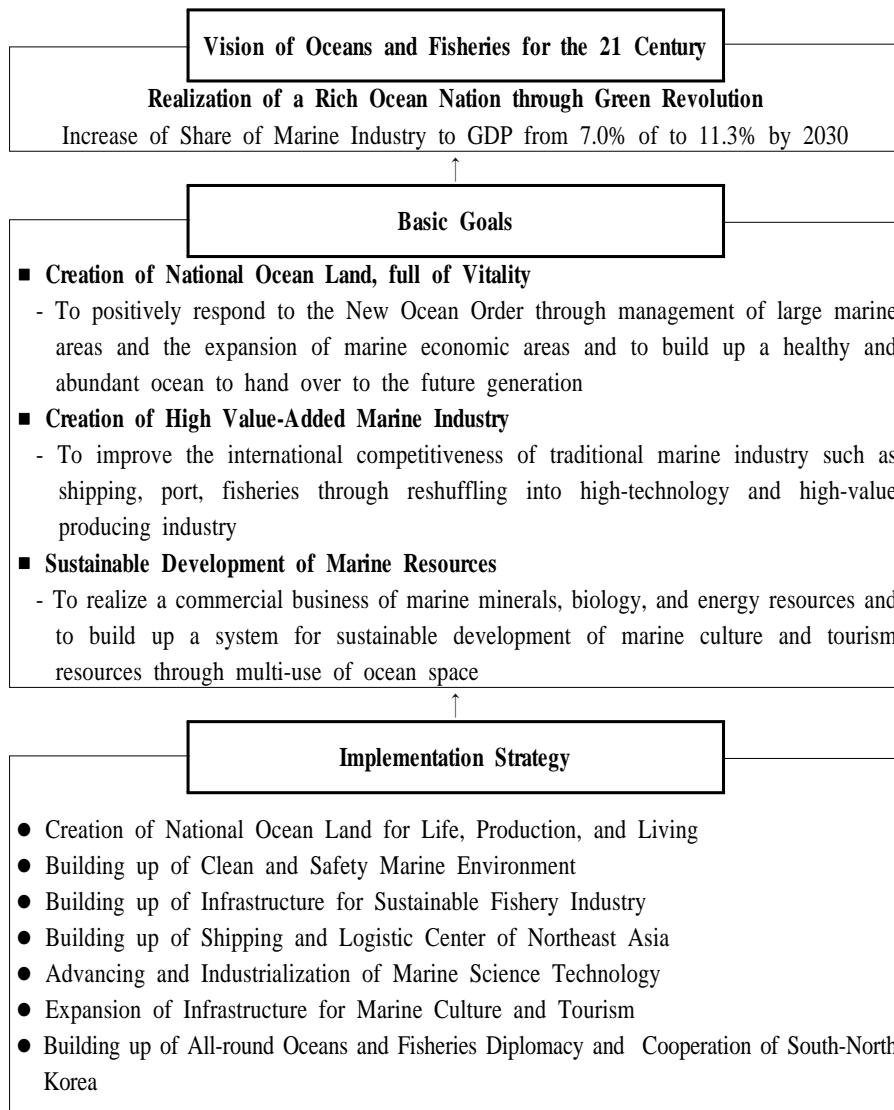
goal due to the lack of enthusiastic leadership and responsible institutions.<sup>213)</sup>

Also the major contents of MDBA were to enhance R&D of oceans rather than to establish a comprehensive oceans policy because the law was under the authority of the Ministry of Science and Technology (MOST), which was in charge of advancing the national science and technological program and infrastructure.

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213) Seoung-Yong Hong, "Marine Policy in the Republic of Korea", *Marine Policy* 19: 97~113 (1995).

〈Figure III-2〉 Basic Direction of Korea's Oceans Policy<sup>214)</sup>



214) Dong-Oh Cho, "Evaluation of the Ocean Governance System in Korea", *Marine Policy* in press (2005).

So MOMAF repealed the MDBA and enacted “the Marine and Fisheries Development Basic Act”(MFDBA : Korea Oceans Act) in 2002 to establish a comprehensive oceans policy, whose major contents are shown in <Table III -1>.

<Table III-1> Major contents of MFDBA (Korea Oceans Act) of 2002

|  |
|--|
| <ul style="list-style-type: none"> <li>■ Establishment and Implementation System of Marine and Fisheries Policy <ul style="list-style-type: none"> <li>- Marine and Fisheries Development Basic Plan (Korea's Oceans Policy)</li> <li>- Committee on Marine and Fisheries Development</li> </ul> </li> <li>■ Marine Development <ul style="list-style-type: none"> <li>- Management of Oceans</li> <li>- Conservation of Marine Environment</li> <li>- Conservation of Marine Ecosystem</li> </ul> </li> <li>■ Maritime Safety Management</li> <li>■ Development and Use of Marine Resources <ul style="list-style-type: none"> <li>- Development of Marine Resources</li> <li>- Marine Science R&amp;D</li> <li>- Use of Marine Space</li> <li>- Pioneering of Ocean Development Frontier Base</li> <li>- Establishment of Marine Science Base and R&amp;D</li> <li>- Driving Forward of International Cooperation</li> <li>- Marine and Fisheries Cooperation between South and North Korea</li> </ul> </li> <li>■ Fostering of Marine Industry <ul style="list-style-type: none"> <li>- Strengthening Competitiveness of Shipping and Port Industry</li> <li>- Expanding and Improving of Port Facilities</li> <li>- Fostering of Fisheries Industry</li> <li>- Accelerating of Fisheries Technologies Development</li> <li>- Improvement of Living Environment of Fisheries Village</li> <li>- Development of Marine Tourism</li> <li>- Support for New Technology Industrialization</li> </ul> </li> <li>■ Creation of Basis and Environment for Marine and Fisheries Development <ul style="list-style-type: none"> <li>- Establishment and Fostering of Research Institute</li> <li>- Educating and Training of Marine and Fisheries Experts</li> <li>- Accelerating of Information System for Marine Development</li> <li>- Support for R&amp;D Business</li> <li>- Creation of Marine Culture</li> <li>- Financial Support</li> </ul> </li> </ul> |
|--|



Based on the act, MOMAF initiated and established “the Marine and Fisheries Development Basic Plan”(Korea’s Integrated Oceans Policy) in 2004 by the support and coordination of all the ocean-related governmental agencies, which is consisted of the action plan through 2010 and the long-term vision through 2030.

## 2) Major Achievement

Since its establishment MOMAF has recognized that the economic development is closely related with the sustainable development of marine ecosystem, so struggled hard to tackle the negative issues on marine ecosystem through ecosystem-based management. Followings are major achievement of MOMAF, which could not or at least would be very difficult to achieve without creation of MOMAF.

### (1) Marine Environment Preservation Comprehensive Plan

Before establishment of MOMAF, the marine environment protection plan was limited to oil spill response from vessels. However, after its establishment, the Korean government tried to establish more comprehensive marine environment preservation plan to prevent and mitigate the land-based sources of pollutant. In 1996, the government established the First Marine Environment Preservation Comprehensive Plan for five years 1996 through 2000 and the Second Comprehensive Plan for five years 2001 through 2005. MOMAF initiated to establish those plans and is now preparing the third Comprehensive Plan for five years 2006 through 2010.

## **(2) Coastal Zone Management**

Since its establishment, MOMAF has struggled to manage and conserve the natural coastal resources that had been ‘abandoned’ by all the previous government agencies. One of this strategies was the enactment of “the Coastal Zone Management (CZM) Act” in 1999. Although the ICZM Act has very weak mandates for the management of coastal resources, it has the following basic management directions through “the National ICZM Plan”.

1. future development and conservation priorities
2. designation of conservation areas
3. direction of pollution load management
4. identification of scenic areas and sites where public access is considered a priority
5. identification of sites where readjustments to existing coastal development plans are as necessary

Together with its establishment, MOMAF took over “the Public Water Reclamation Act” from MOC, which had already approved the Second Basic Public Water Reclamation Plan for the period of 2001 to 2011. This ten years plan called for reclamation projects on 355 sites totaling 390 square kilometers. MOMAF, however, accepted only 186 sites totaling 38 square kilometers based on the National ICZM Plan.

## **(3) Wetland Preservation**

Together with the enactment of CZM Act in 1999, MOMAF enacted “the Wetland Conservation Act” and ratified “the RAMSA Convention” to conserve and manage the important and precious wetland and thereby to preserve endangered wildlife and biodiversity.

By the Wetland Conservation Act, MOMAF has designated important sites as “the Wetland Conservation Sites.” Until now, five sites covering 141 square kilometers have been designated as Wetland Conservation Sites. MOMAF has plans to designate a further 13 sites by 2010. Also MOMAF has designated 4 wetland sites covering 71 square kilometers as Biodiversity Conservation Sites.

#### **(4) Special Area Management**

Together with its establishment, MOMAF took over “Marine Pollution Prevention Act” from MOE (Ministry of Environment), which regulates that such seriously polluted area might be designated as a Special Management Area. Before the establishment of MOMAF, MOE designated the coastal waters of Ulsan, Busan, Masan and Kwangyang as the Special Management Marine Area but did not establish any Special Area Management Plan.

However, MOMAF has monitored, surveyed and forecasted the carrying capacity of the Special Management Area and the total land-based and sea-based pollutant flowing into the area. And MOMAF has established Special Area Management Plans for the coastal waters of Ulsan, Busan, Masan, Kwangyang and Shihwa-Incheon, totaling 1127.61 square kilometers of sea and 1065.15 square kilometers of land, of which main objectives are to regulate the land-based pollutant. Also MOMAF designated the Bay of Kamak, Hampyung, Wando-Doam and Deugryang as the Environment Conservation Areas and established the management plan, totaling 1172.41 square kilometers of sea and 1718.40 square kilometers of land.

#### **(5) Oil Spill Management**

With the increased activities of cargo transported by ships, Korean coastal waters continually suffered from oil-spill accidents, approximately 300 cases annually. These oil spills imposed adversely on the marine environment including dense aquaculture in the south and west coast in Korea. However, the oil spill management before the establishment of MOMAF was so poor that the National Contingency Plan (NCP) or any Regional Contingency Plan (RCP) was not established and the resources for response to large oil spill were not enough.

However, since its establishment, Korea Coast Guard (KC) of MOMAF established NCP in 2000 and RCPs for twelve major coastal waters from 1999 to 2002. And then Korea government ratified the OPRC in 2000 and has tried to cooperate with neighboring nations throughout the Northwest Pacific Action Plan (NOWPAP) to respond to big oil spill accidents. Also in 1997, MOMAF established KMPRC (Korea Marine Pollution Response Corporation) to effectively response oil spill accident by the contribution of oil refinery industry and tanker and shipping industry.

#### **(6) Fisheries Resources Management**

Since the mid-1970s, Korea has been faced with depletion of fishing stocks in coastal and off-shore waters due to overfishing and indifferent management of fishing stocks by fishers and government respectively. To restore the reduced fishing stocks and to redevelop the Korean fisheries industry, the Korean government has suggested various alternatives (e.g. a limited license regulation, technical regulation methods, and a vessel buy-back program) related to a licensed fishery system that has been a major part of the conventional fisheries management regime in Korea since

1908. Nevertheless, these measures have had little effect on the Korean fisheries industries and its resource recovery.<sup>215)</sup>

Therefore, MOMAF has struggled to restore the fishing stocks since its establishment. One of them is introduction of TAC (Total Allowable Catch) system in 1998, which was implemented successfully in several countries, such as USA, New Zealand, Iceland, and Norway). The TAC system was a turning point of Korean fisheries management from input control to output control approaches, by which biological maximum resources can be maintained. Nine species and five fisheries are now in the TAC system as of 2004 and it will be expanded to 21 species in 2010.

MOMAF has also enforced the policy on aquaculture industry instead of catches by fishing vessels. Also marine ranching program is one of the policies that MOMAF has invested much for restoration of fishing stocks. MOMAF has also designated 422 sites (10,603.6 km<sup>2</sup>) as MPA (Marine Protection Area) for restoration of fishing stocks.

### 3) Budget

At the time of creation of MOMAF, the total amount of budget was 1.585 billion dollars in 1997. However, the budget has continuously increased to 4.670 billion dollars in 2006. The annual rate of increase for ten years from 1997 through is 8.0 %. Since its creation, Korean ocean policy has got a high priority among the central government agencies.

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215) Ryu J. G., J. O. Nam, J. M. Gates., "Limitations of the Korean Conventional Fisheries Management Regime and Expanding Korean TAC System toward Output Control Systems", *Marine Policy* in press.

〈Table III-2〉 The trend of MOMAF budget

| Year                   | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  | 2003  | 2004  | 2005  | 2006  |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Budget<br>(Million \$) | 1,585 | 2,007 | 2,244 | 1,901 | 2,038 | 2,525 | 2,936 | 3,518 | 4,216 | 4,670 |

Source: MOMAF and KCG, 2006.

## Chapter IV

### Comparative Analysis of the U.S. and Korea Oceans Policy

Ocean policy is a substantial subject and, accordingly, there are advantages to considering it in several parts for purposes of analysis.<sup>216)</sup> In this study, ocean governance efforts of both countries, in terms of ocean policy and organization, are analyzed by consideration of significant elements such as oceans acts, institutional integration and coordination, the role of legislative bodies, integrated oceans policy, congress, budget and policy priority, and constituency. Some key points of comparison are summarized in <Table IV-1>.

<Table IV-1> Comparing of the U.S and Korea Ocean Government

|                            | The U.S.   | Korea  |
|----------------------------|--|--|
| Governmental type          | federal system   | unitary system   |
| Legislative body           | bicameral: power dispersed among numerous committees   | unicameral: one ocean related committee  |
| Institutional arrangements | 1970: NOAA<br>2004: The U.S. Commission call for NOAA Organic Act jurisdictional divisions continue<br>2004 National Ocean Council | 1996: MOMAF integrates several departments jurisdictional divisions continue<br>No counterpart |

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216) Jacques P, Smith ZA. Ocean Politics and Policy (Santa Barbara: ABC-CLIO. 2003).

〈Table IV-1〉 (continued)

|                           | The U.S.   | Korea  |
|---------------------------|--|--|
| Oceans Act                | 2000: creates Ocean Policy Commission, no legislatively mandated ocean policy                            | 2002: integrated oceans policy   |
| Integrated ocean policy   | supported by ocean commissions, some integration provided for in reauthorizations of CZMA, OCSLA, MSFCMA | 1987: Marine Basic Act<br>2002: Marine/Fisheries Development Basic Act |
| Sea/land coordination     | need clearly recognized  | strong bureaucratic resistance   |
| Ocean budget              | declining from larger base   | increasing from smaller base   |
| Ocean policy constituency | sectoral focus   | sectoral focus   |

## 1. Oceans Acts in Korea and the United States

In 2002, the Korea Oceans Act was enacted after creation of MOMAF, that is, after the establishment of an integrated institutional arrangement. Therefore, the act does not mandate creation of an integrated institutional arrangement but rather the establishment of an integrated oceans policy. MOMAF has endeavored to create such a comprehensive and vision-oriented oceans policy. Based on this act, a Korea Oceans Policy was adopted in 2004.

Compared with the Korean Oceans Act, the U.S. Oceans Act enacted in 2000 provided for a high level commission to undertake a detailed and careful analysis of the present state of the U.S. Oceans Policy and to provide recommendations for the future. The conclusions and recommendations of the



U.S. Committee on Oceans Policy are found in its 2004 report to Congress and the President, *An Ocean Blueprint for the 21<sup>st</sup> Century*. The Bush Administration responded with a Plan of Action, but it has been cautious about acting upon a number of the Commission's recommendations.

## **2. Integrated Institutional Arrangements and Coordination**

Chapter 17 of Agenda 21 recommends that coastal states undertake integrated management of the coastal and marine environment. To this end, it is recognized that institutional adaptation will be required, with greater emphasis being placed on the need for mechanisms to coordinate governmental efforts in the management of ocean and coastal areas and for participation of a range of organizations, local communities, resource user groups, and indigenous peoples. It is clear that effective ocean policy and management require coordination and cooperation among governmental agencies at the same level of government (the horizontal dimension) and also between different levels of government within countries (the vertical dimension).<sup>217)</sup>

### **1) The United States**

With respect to the horizontal dimension of integration, the 1969 report of the Stratton Commission emphasized the need for institutional change within

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217) Arild Underdal , "Integrated Marine Policy – What? Why? How?," *Marine Policy* 159-169 (1980).

the U.S. government so as to improve the interplay of governmental departments and to take advantage of ocean opportunities. The existing situation was one in which responsibility for ocean activities was spread among a number of departments and agencies, with departments having overlapping jurisdiction leading to conflicts, and with important ocean-related programs placed in departments in which those programs were seen to be of only marginal importance.<sup>218)</sup>

In response to the Stratton Commission's recommendations, NOAA was created in 1970 by an executive order issued by President Nixon. However, NOAA was not the strong independent, lead ocean agency that the Stratton Commission had recommended. It did not report directly to the President; instead, NOAA was placed in the Department of Commerce. And, notwithstanding the recommendation of the Stratton Commission, the Coast Guard was not included in NOAA. Despite the creation of NOAA, the varied aspects of ocean policy have continued to be shaped and executed by a multiplicity of government departments and agencies. The establishment of NOAA did not eliminate the reality that a number of civilian federal government departments and agencies still maintained important jurisdictional and programmatic responsibilities relating to ocean/coastal matters.<sup>219)</sup>

The two recent national commissions, the U.S. Commission on Ocean Policy and Pew Oceans Commission, have issued reports and recommended that a comprehensive and integrated ocean policy should be established. Congress has yet to adopt legislation that would do this. The U.S.

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218) Lawrence Juda, "Changing National Approaches to Ocean Governance: The United States, Canada, and Australia", 34 *Ocean Development and International Law* 161-187 (2003).

219) L. Juda, *Ibid.*

Commission has called for the passage of a NOAA Organic Act that would provide a statutory basis for NOAA as an operating agency and the establishment of a high-level interdepartmental National Ocean Council. Such a Council has been established as a coordinating mechanism but the NOAA Organic Act is still in legislative limbo. The lack of a legislative mandate for a comprehensive ocean policy and the continued fragmentation of agency responsibilities for ocean/coastal matters are significant factors limiting ocean policy integration in the United States.

In regard to the vertical dimension of policy integration, the situation of the United States is complicated by the federal nature of its governmental system. In this system, the governmental authority is shared with constituent states having constitutionally defined roles. The states, for example, have significant authority with respect to land use and coastal waters. Accordingly, cooperative interplay between the federal and state governments is a necessity and may require negotiation and compromise, rather than command, to be made effective.

The Stratton Commission report understood this and, consequently, in its recommendations on coastal zone management, called for the establishment of a voluntary federal program that would provide inducements to the states to cooperate. This program has been very successful in obtaining state participation and in getting states to take a more holistic view of coastal areas. Both the Pew and the U.S. Ocean Commission reports emphasize the need for federal-state-community partnerships to effectuate a more coherent, integrated, and ecosystem-based approach to ocean/coastal management.

## 2) Korea

For its part, in 1996, the Korea Government created the Ministry of

Maritime Affairs and Fisheries (MOMAF) as an integrated institutional arrangement by revising the Governmental Organization Act (GOA). By the terms of the GOA, most of the ocean-related government agencies, together with their authorities, such as the Maritime and Port Authority Administration (MPA), with shipping and port management, the Fisheries Administration (FA), with fisheries management, the National Marine Police Administration (NMPA), with maritime law enforcement, the Maritime Safety Tribunal with maritime accident investigation and judgment, and the National Oceanographic Research Institute with research on oceanographic matters, were integrated into MOMAF. Also based on the GOA, MOMAF took over marine environmental management from the Ministry of Environment (MOE) and public water management and reclamation policy from the Ministry of Construction and Transportation (MOCT). So, most of the ocean-related organizations with the exception of those concerned with shipbuilding, atmospheric forecasting, and exploitation of offshore oil and gas, were integrated into one single administration. After creation of MOMAF in 1996, that Ministry repealed the Marine Development Basic Act (MDBA, Law No. 3983), enacted the Korean Oceans Act (the Marine and Fisheries Development Basic Act (MFDBA)) in 2004, and established an integrated oceans policy (Korea's Oceans Policy : the Marine and Fisheries Development Basic Plan) in 2004.

By revising the GOA and establishing MOMAF, MOMAF has become the sole government agency in charge of conservation of the marine environment and its resources. However, there are still other government agencies, such as MOCT and MAF, that have strong incentives and the power to impact marine ecosystems. Also local governments have shown strong interest in the development of marine ecosystem for tax revenues and

regional economic development since the local self-government movement started in 1995.

MOMAF has worked hard to coordinate and cooperate with other government agencies and has established ocean-related programs or policies. The representative programs and policies are : the Marine Environment Preservation Comprehensive Plan, Special Area Management Plans, the Land Use Plans for Lake Shiwha Reclamation Project, and Oil Spill Response Management Plan on the Lakes, Rivers, and Oceans. However, there has not been established any formal mechanism, such as National Ocean Council in the U.S., to coordinate the ocean-related programs or policies in Korea.

With respect to the vertical dimension of ocean policy integration discussed above, the organizational situation of Korea is different from that of the United States. Korea has a unitary system of government and there is a tradition of strong central government ; lower levels of government do not have a status or role equivalent to that of the state governments in the United States. While this appears to reduce the institutional obstacles to development of an integrated ocean policy, the need for stakeholder and constituency support at the local level remains a necessity.

### **3. The Role of Legislative Bodies**

Consideration of institutional change to advance integrated and ecosystem-based ocean/coastal management has largely focused on the organization of the executive branch elements of the government. But it is

also necessary to examine the role of legislative bodies. This is especially true in presidential systems of government in which legislative bodies are separate from the executive branch, have substantial authority, and seek to maintain their institutional prerogatives and power.

### 1) The United States

While much attention is deservedly given to the executive branch of government in considerations of ocean policy, it is important to understand that the legislative branch is also of great importance. Congress has the power to adopt laws and to determine fiscal appropriations. In the U.S. there are two houses in congress : the Senate and the House of Representatives. And, as noted by the U.S. Commission on Ocean Policy, there are some 60 congressional committees and subcommittees involved in the oversight of the work of 20 federal agencies and commissions with ocean-related responsibilities based in more than 140 federal, ocean-related laws. This multiplicity of congressional committees and subcommittees can provide multiple hurdles to the establishment of an integrated oceans policy.

### 2) Korea

Compared to the U.S., Korea has a single bodied legislature with a single committee involved in ocean-related matters. In 1996, the Korean Congress established “the Committee on Agriculture, Forestry, and Fisheries” as one of 17 Standing Committees to review the laws, policies, and budget for the oceans. The committee consists of 20 members, most of whom are elected

from coastal and rural areas. Since its establishment, the Committee has made every effort to enact laws and support sustainable development in the ocean policies it adopts. Further, in 2004, “the Oceans Forum” was established by 50 members of Congress who were deeply interested in the ocean and ocean policies. Although the Oceans Forum is not a standing committee in the Congress, it has strongly supported the establishment of ocean policies in Korea. The Oceans Forum has initiated many workshops, seminars, discussions and expert presentations to consider oceans policies.

#### 4. Integrated Oceans Policy

On the international level, the 1992 United Nations Conference on Environment and Development (UNCED) maintained that all states need to play a role in solving escalating global environmental problems. The introduction of new concepts, such as “integrated management” and “sustainable development”, into marine environmental management has advanced changes in the nature and scope of marine biosphere politics.<sup>220)</sup>

Many scholars have attempted to define and have recommended integrated oceans policy for ocean governance.<sup>221)</sup> Underdal argues that the most

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220) S.Y. Hong, J.H. Lee, National Level Implementation of Chapter 17: The Korean Example, 29 *Ocean and Coastal Management*, 231-249 (1995).

221) R. Kenchington and D. Crawford, “On the Meaning of Integration in Coastal Zone Management”, 21 *Ocean & Coastal Management* 109-127 (1993); G. Wescott, “The Development and Initial Implementation of Australia’s ‘Integrated and Comprehensive Oceans Policy’”, 43 *Ocean & Coastal Management* 853-878; Arild Underdal, “Integrated Marine Policy – What? Why? How?”, 4 *Marine Policy* 159-169 (1980); B. Cicin-Sain, “Sustainable Development and Integrated Coastal Management”, *Ocean and Coastal Management* 11-43 (1993); L. Juda, “Considerations in Developing a Functional Approach to the Governance of Large Marine Ecosystems”, 30 *Ocean Development and International Law* 89-125 (1999).

general purpose of policy integration is to improve outcomes, and the key to this improvement is the “internalization of externalities”. Fragmented decisions often produce externalities, here broadly defined as consequences that are not adequately incorporated as decision premises because they fall outside the scope of attention or because of poor aggregation.<sup>222)</sup>

## 1) The United States

The Stratton Commission report maintained there was a need for long-term, integrated national management and the Pew and the U.S. Ocean Commission underscored the imperative of considering ocean and coastal areas in “system” terms, understanding the interaction and interdependencies of different parts of the system.<sup>223)</sup> The creation of NOAA was a consequence of the Stratton Commission report, but as noted in the work of the later ocean commissions, NOAA was not given the authority to achieve the objective of a truly integrated ocean policy. Operationally, as considered in the body of this study, the objective of integrated policy was advanced through legislative reauthorizations of legislation such as the Coastal Zone Management Act, the Magnuson Fisheries and Conservation Act, and the Outer Continental Shelf Lands Act that required consideration of impacts on other ocean uses and/or the ocean environment itself.

A variety of new measures were suggested by the Pew and the U.S. Ocean Commissions. Both stressed the need for regional and ecosystem-based management. Recognizing political realities, the U.S. Ocean

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222) Arild Underdal , “Integrated Marine Policy – What? Why? How?”, 4 *Marine Policy* 159-169 (1980).

223) L. Juda, “Changing National Approached to Ocean Governance”, The United States, Canada, and Australia, 34 *Ocean Development and International Law*, 161-187 (2003).



Commission lays out a phased in approach to change both substantive policy and institutional arrangements for ocean policy. As noted in the body of this study, a list of priority measures have been identified by the Joint Ocean Commission Initiative for immediate consideration. To move this program forward, both congress and the executive branch will have to act and provide needed financial support to sustain both policy and institutional recommendations.

## 2) Korea

Prior to the establishment of MOMAF in 1996, oceans policy in Korea was done on the basis of sectoral management, with, for example, fisheries management implemented by FA, shipping port management by MPA, shipbuilding by MOC, wetlands and public waters reclamation by MOCT, marine environment management by MOE, oil and gas exploitation by MOC, maritime safety management by MPA, and maritime laws enforcement by NMPA.

In 1987, the Marine Development Basic Act (MDBA) was enacted to coordinate the sectoral management of oceans policy that was conducted by multi-governmental agencies. However, the Korean government failed to achieve its goal due to the lack of enthusiastic leadership and responsible institutions.<sup>224)</sup> Moreover, the major contents of MDBA were to enhance R&D of oceans rather than to establish a comprehensive oceans policy.

So MOMAF repealed the MDBA and enacted “the Marine and Fisheries Development Basic Act” (MFDBA) in 2002 to establish a comprehensive

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224) S.Y. Hong, “Marine Policy in the Republic of Korea”, 19 *Marine Policy*, 97-113 (1995).

oceans policy. Based on the act, “the Marine and Fisheries Development Basic Plan” (Korea’s Oceans Policy) was established in 2004 by all the ocean-related governmental agencies, among which MOMAF initiated the plan. The Korea’s Oceans Policy consists of the action plan, which will be conducted through 2010, and the long-term vision through 2030.

In the meantime, Korea’s Oceans Policy does not include all the individual ocean-related programs. Each individual ocean-related policy or program is established and implemented by relevant department of MOMAF. However, those individual programs or policies following the creation of MOMAF are quite different from those of the pre-MOMAF period in the sense of sustainable development and ecosystem-based management approach. The representative programs or policies are : coastal zone management program, wetland management plan, special area management plan, marine protected area, marine sand management plan, marine debris management plan, oil spill management plan, and fisheries management such as total allowable catch (TAC) program.

However, under the Government Organization Act (GOA), environmental and resource management in Korea has become a dual system based on spatial divisions: the terrestrial environment is managed under MOE and the marine environment, under MOMAF. Water quality management on land remains under the charge of MOE based on the Water Quality Conservation Act. Coastal water quality management, however, is controlled by MOMAF under the Marine Pollution Prevention Act. The jurisdiction of wetlands management is also divided into land-wetlands and tidal-wetlands under the Wetlands Preservation Act. Solid waste management is divided into land waste and marine debris. Marine natural resources management is under the authority of MOMAF by revisions of the Natural Environment Preservation

Act in 1997, while all the other natural resources management remains under the charge of MOE. The dual system of environment and resources management is far removed from ecosystem-based management.

Also, despite this dual system of environmental management, there are still conflicts on the separation of functions or policies between MOMAF and other governmental agencies, such as estuary and watershed management, public beach management, management of marine national park, management of uninhabited island, environment impact assessment (EIA) for marine environment. These conflicts occur mainly from undefined spatial demarcations and turf protection of the governmental agencies.

## **5. Budget and Policy Priority**

As in all policy areas, budgetary considerations are important in ocean policy since funding is typically required to support initiatives and programs. Budgets, however, are limited and different programs are competing for the same pot of money. In this context budgetary support may be seen as one very important measure of governmental commitment and priorities.

### **1) The United States**

As seen in the <Table II-2> (in Part II of this study) on “Estimated Federal Funding for Oceans and Coastal Activities”, the budget for oceans policy in the U.S. peaked (\$10,199 million) in 2004 and has decreased to

the level of \$9 billion thereafter. The president's budget request for ocean/coastal programs for fiscal year 2006 (\$9.364 billion) shows a decline as compared to fiscal years 2004 (\$9.423 billion) and 2005 (\$10.199 billion) and tentative budget projections for the years through 2010 remain at levels below the actual allocations for 2004 and 2005 (see <Table IV-1>).<sup>225)</sup> More recently, the President has budgeted \$3.684 billion for NOAA for fiscal year 2007, some \$227 million (5.8%) less than the actual funding for 2006. In particular the National Ocean Service faces a reduction of \$187 million (31.7% of its 2006 budget) while the National Marine Fisheries Service would see a decrease of \$67 million (8.3% of its 2006 budget) (from Chapter II). At least in budgetary terms, it appears that, in total, ocean policy in the U.S. has been a decreasing, rather than an increasing priority in recent years.

## 2) Korea

At the same time, the oceans policy budget in Korea has increased sharply since creation of MOMAF. As seen in the <Table III-2>, the budget of MOMAF for fiscal year 1997 was \$1.6 billion and it has increased continuously to \$4.7 billion for the fiscal year 2006. The annual rate of increase of the budget is 8.0%. So it can be said that the policy priority of oceans policy in Korea, as measured by budget, has increased substantially.

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225) Interagency Committee for Ocean Science and Resource Management Integration, *Federal Ocean and Coastal Activities Report to the U.S. Congress* (December 2005), p. ix. Available on line at <[ocean.ceq.gov/Fedoceancoastal.pdf](http://ocean.ceq.gov/Fedoceancoastal.pdf)>.

## 6. Ocean Policy Constituencies

Olsen has maintained that the first generation coastal management programs called for by the Agenda 21 of the UNCED Conference had to build constituencies to support improved resource management. Without well-organized and strong constituencies at many levels within a society, efforts would result only in more paper, much of it of an excellent technical quality, and increased frustration among the professionals involved in the endeavor.<sup>226)</sup>

Juda and Hennessey indicate that there are three key, general mechanisms of governance: the government, the marketplace, and nongovernmental institutions and arrangements. These mechanisms interact with one another in an ongoing, continuing pattern of dynamic interrelationships. In democratic and pluralistic societies, nongovernmental groups play important constituency roles, affecting both governmental and marketing decisions with attendant ramifications for the natural environment. Collectively, government, the marketplace, and social institutions and arrangements shape public perceptions, attitudes, and can generate support for needed programs.<sup>227)</sup>

### 1) The United States

Constituency support for ocean activities, in the United States and

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226) S. B. Olsen., "Will Integrated Coastal Management Programs be Sustainable; the Constituency Problem", 21 *Ocean & Coastal Management* 201-225 (1993).

227) Lawrence Juda and Timothy Hennessey, "Governance Profiles and the Management of the Uses of Large Marine Ecosystems", 32 *Ocean Development and International Law* 41-67 (2001).

elsewhere, have centered on particular ocean uses and interests. The difficulties in advancing a fully integrated ocean policy is due to a lack of a sufficient constituency that is concerned with the oceans as a whole, as compared to particular aspects or uses of the oceans. The conflict is between specific, concrete, and immediate benefits as opposed to the longer-term concerns with the maintenance of natural systems that, in turn, generate societal benefits.

Growing interest in ecosystem-based management, fed by the Pew and the U.S. Ocean Commission reports and many other studies, however, may help increase prospects for constituency development as it becomes increasingly apparent that all ocean uses impact one another and also have cumulative implications for sustainability of natural systems on which all humanity depends. A systems approach, as reflected in the concept of ecosystem-based management, provides a strong rationale for adoption of a NOAA Organic Act that would recognize the lead agency status of NOAA in ocean affairs and set the stage for increased NOAA responsibilities in the future.

## 2) Korea

There has not been any survey on constituency for oceans policy in Korea, so it is hard to assess the degree of the general public's constituency for oceans policy. The constituency on oceans policy in Korea began to be built unintentionally by a series of maritime accidents before MOMAF. However, it has solidified because of the establishment of MOMAF itself and a series of policies after MOMAF.

Prior to the creation of MOMAF, two big maritime accidents, M/V Seo-Hae Ferry Accident<sup>228)</sup> and M/V Sea Prince Accident<sup>229)</sup>, made the

general public aware of the importance of maritime safety and oil pollution on the coastal waters. And with further development of coastal areas, large quantities of land-based pollutants deteriorated the quality of coastal waters. Frequent red tides have occurred, which also made the general public more sensitive to threats to coastal waters and resources.

There have been many reclamation projects in Korea and the general public has accepted reclamation considering the small land mass and dense population. However, the Shiwah Lake Reclamation Project and Saemangeum Reclamation Project, which have been conducted recently, increased public consciousness of the importance of wetlands and coastal waters and led to strong opposition to these projects from NGOs.

The creation of MOMAF also made the general public more aware of the need for effective management of coastal and ocean resources. The fisheries boundary agreement with Korea and Japan and Korea and China, which resulted in reduced access to fishing grounds for Korean fishermen, contributed further to this awareness. Although the constituency for oceans policy of the general public resulted from maritime disasters, it has continued to grow as MOMAF establishes and implements ocean use management and as ocean-related industry further develops.<sup>230)</sup>

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228) In 1993, M/V Seo-Hae Ferry (passenger ship, 110 G/T with two engines of 500 HP, built in 1989) left an island for the port of Kyeokpo with 362 persons aboard capsized and sunk soon after leaving the island causing 292 deaths.

229) M/V Sea Prince, a full loaded VLCC, was run aground at out-harbor of Kwangyang on July 23, 1997 by the strong wind of a typhoon and spilled 10,000 tons of bunker C, which polluted the coastal waters and shoreline of the south coast of Korea and damaged the large area of aquaculture and deteriorated the marine environment.

230) The added value of ocean-related industry to GDP has grown at a fast pace. MOMAF has estimated the growth rate at 7.0% in 2004 and 11.3% in 2030. Such growth will serve to provide greater recognition to the general public of the importance of ocean policy.

## Chapter V

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### Conclusion and Policy Implications

Both the United States and the Republic of Korea have substantial offshore areas under their jurisdiction, posing a combination of opportunities and responsibilities. Taking full advantage of these opportunities and meeting their national and international responsibilities require effective governance. While the political and administrative systems, the cultural settings, and the historic experiences of the two states are different, in both the United States and the Republic of Korea sectoral approaches to ocean/coastal management have been tried and have proven to be inadequate. More integrated and systems oriented approaches to ocean use management are required to take into account the interaction of multiple and increasingly intensive uses of the marine environment. Further, contemporary management efforts must also factor in the human use impacts on the ocean/coastal ecosystems that are fundamental to natural system sustainability.

In both states there is in evidence an ongoing process of evolution in ocean management, manifested in a variety of actions relating to institutional arrangements, policy, and budgeting. This process is driven by the need to address the problems posed by human use of the oceans, problems that are increasingly recognized as being significant and requiring immediate attention. Both states need to take measures to accommodate the



reality of an ever changing and intensifying pattern of ocean/coastal use, increasing conflict among uses, and threats to ecosystem sustainability that cannot be ignored without very substantial societal costs.

## **1. The United States**

Collectively, the reports of the Stratton Commission and those of the Pew Oceans Commission and the U.S. Commission on Ocean Policy have laid out the case for change and have made numerous recommendations for needed action. In the United States institutional change has met substantial resistance and efforts to improve integration of ocean/coastal management has focused on policy change in a variety of sectors such as fisheries and oil and gas development on the continental shelf. Over time greater attention has been given in these sectors to the externalities associated with particular activities so that the framework in which decisions are made has been widened to consider impacts on other ocean users and/or the environmental consequences pursuant to specific activities. In respect of fisheries, substantial attention is now afforded to activities such as oil and gas development, coastal development, and pollution and their impacts on fishery sustainability.

One notable development that has accentuated spatially-based management consideration has been that associated with the coastal zone. In this context, the area encompassed by the legislative definition of the coastal zone, including both land and water, are treated in an holistic fashion with attention given to multiple uses and their conflicts, priority of uses, and the need for a management perspective that is broader than that associated with

the traditional sectoral approach. In many respects, the Coastal Zone Management Act, strongly recommended by the Stratton Commission, with its national standards, significant federal incentives to the states, flexibility, and its widespread political support in the federal government and the states provides a model for the development of appropriate integrated, ecosystem-based, regional arrangements for ocean management.

The U.S. Commission on Ocean Policy has lauded the CZMA and, like the Pew Oceans Commission, has championed the concept of ecosystem-based management. It has also laid out a large number of recommendations that would address institutional, policy, budgetary, and partnership proposals that individually and cumulatively could close the gap between where ocean/coastal management presently is and where it needs to be. This approach is sensitive to political realities and pragmatic, favoring phased change over time, rather than radical change all at once. Indeed, Congress, recognizing that substantial change has been suggested, and perhaps overwhelmed by the vast number of recommendations made, has requested and received a priority list of ten actions that need to be taken presently from members of the U.S. Commission on Ocean Policy and the Pew Oceans Commission. The items on this list could become the point of ocean focus with the convening of the new 110th Congress in January 2007. There is a growing body of knowledge in ocean science and a substantial amount of experience in the ocean policy field that needs to be fully utilized to protect the viability of ocean systems.

Institutionally, a NOAA Organic Act that establishes NOAA as the lead agency in ocean management awaits passage. Continuing efforts at coordination among federal agencies will be required, as will be efforts to develop mechanisms that serve to encourage federal-state harmonization and

partnerships. The Coastal Zone Management Act provides relevant lessons in how this may be done. And regional cooperation among states sharing ocean/coastal ecosystems must be encouraged.

In terms of policy, a framework national ocean policy that lays out broad objectives, desired outcomes, and guidelines is needed. Support for multi-state regional cooperative efforts, as in Chesapeake Bay and elsewhere, should be made increased. Internationally, accession by the United States to the 1982 United Nations Law of the Sea Convention is long overdue and should receive immediate attention. This action will allow the United States to play its full role in the continuing development of the international law of the sea.

In respect of budget, increased investment in ocean programs is a necessity so as to ensure the scientific research that is an essential basis for effective ocean management. It is imperative that there is a solid understanding of the dynamics of ocean systems and the effects of human use on the workings of marine ecosystems. And, adequate funding is needed to support state, regional, and national programs that seek to improve ocean management. Movement toward an integrated ocean budget would contribute to needed coordination and help to maximize the benefit derived from allocated funds.

All of the above measures, measures that could serve to advance movement toward ecosystem-based management, require political support. It is notable that both the Pew Oceans Commission and the United States Commission on Ocean Policy have given substantial attention to education and outreach as vital parts of the ocean management process. Ocean management is not solely a responsibility of government; successful management will necessitate widespread public understanding and support.

## 2. Korea

Until recently, the Korean government's responsibilities for addressing a variety of marine affairs were fragmented across many agencies operating under more than 50 relevant ocean laws. Many of these individual laws and programs were implemented without coordination and in an unsustainable manner. As a result, serious issues and concerns for Korea's long term marine environmental and economic health were beginning to occur with greater frequency. Some of these issues concerned a high demand for intensive coastal development, loss of wetlands, declining water quality, declining near shore fisheries, decreasing fisheries populations, limits of public access to coastal areas, intensifying industrial urban development, and haphazard and unsustainable growth in tourism facilities.

In 1996 the Korean government decided to integrate these fragmented interests within the authority of one single government agency, the Ministry of Maritime Affairs and Fisheries (MOMAF). On August 8, 1996, MOMAF effectively integrated most of the marine administrations into one "superagency" empowered to address the nation's growing marine and maritime interests in a comprehensive manner. The basic framework of the Ministry incorporated the Maritime and Port Administration, the Fisheries Administration (FA), the National Marine Police Administration (NMPA), the Hydrographic Affairs Office, and other marine-related agencies.

However, the Korean government did not conduct any feasibility study on creation of MOMAF, such as "Our Nation and the Sea: A Plan for National Action" of the Stratton Commission, "America's Living Oceans: Charting a Course for Sea Change" of the Pew Oceans Committee, and "An Ocean

Blueprint for the 21<sup>st</sup> Century” of the U.S. Commission on Ocean Policy. MOMAF was established in response to a Presidential declaration made on the very first Ocean Day, which was celebrated nationally on May 31, 1996.

Also the constituency of the public on oceans policy in Korea was weak. The government and public recognized the sectoral management and its inefficiency, problems and issues more than twenty to thirty years later than in the U.S. And the recognition of the marine environment and resources of the general public started in the 1990s when a series of maritime accidents occurred and a government reclamation project was confirmed to be an environmental disaster. With little constituency within the governmental agencies and from the public, other governmental agencies claimed that MOMAF should be broken up and returned to the old system, such as shipping and port management to MOCT, fisheries management to MOAFF, marine environment management to MOE, and maritime law enforcement to the Ministry of Interior.<sup>231)</sup>

Together with the establishment of MOMAF, the Korean government revised the Government Organization Act (GOA) mandating MOMAF's responsibilities in oceans policies. The article 44 sets out: (1) The Minister of MOMAF is in charge of function of fisheries, shipping, ports, marine environment preservation, oceanographic research, marine resources development, marine science technology research and development and maritime safety and judge and (2) The National Marine Police Administration, which is in charge of the function of police and oil response at sea, is under jurisdiction of the Minister of MOMAF.

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231) D. O. Cho, "Evaluation of the Ocean Governance System in Korea", *30 Marine Policy* 570-579 (2006).

Under the GOA, most of the ocean-related government agencies together with their authorities, such as MPA with shipping and port management, FA with fisheries management, NMPA with maritime law enforcement, Maritime Safety Tribunal with maritime accident investigation and judgment, and National Oceanographic Research Institute with research on oceanographic, were integrated into MOMAF. Also under the GOA, MOMAF was given responsibility for marine environmental management from the Ministry of Environment (MOE) and public water management and reclamation policy from the Ministry of Construction and Transportation (MOCT). Therefore, most of the ocean-related organizations and their authorities were integrated into one single administration. The exceptions to this were in the areas of shipbuilding, atmospheric forecasting and exploitation of offshore oil and gas which have remained outside MOMAF jurisdiction.

However, the revised GOA does not delineate ocean spaces which have led to ongoing discussions with other Ministries with responsibilities for other ocean-related functions. For example, MOE and MOCT claim that MOMAF authority is clearly geographically limited seaward from the coastline and does not extend landward. As a result, various laws and programs and development issues pertaining to the coastal areas remain unclear under a fragmented system of authorities of various governmental agencies. The concept of ecosystem-based management has not yet been introduced in Korea, although there are some discussions on it in the area of fisheries management.<sup>232)</sup>

Therefore, other ocean-related government agencies argue that the ocean

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232) Jon G. Sutinen and Jung-Hee Cho, "Ecosystem-Based Fishery Management: Lessons and Implication", Korea-U.S. Joint Marine Policy Research Project (2005).

policy should be on the ocean space but not on the land space. Over the last ten years since establishment of MOMAF, most of the successful programs or policies are beyond the edge in the ocean only and efforts to integrate the coastal land and sea into one ecosystem-based management failed.

Until now MOMAF has tried hard to integrate the coastal land and waters into one management system but has not succeeded. The barriers between land and sea are so solid and strong and provide an obstacle to ecosystem-based management. Instead, there is an imperfect, dual system: the ocean space management under MOMAF and the coastal land space management under other ocean-related agencies.

An in-depth research and study on integrated oceans policy, such as by Stratton Commission, Pew Foundation, and the U.S. COP, would be helpful to persuade other government agencies to understand and participate a truly ecosystem-based management. A coordination mechanism such as the National Ocean Council in the U.S. would also be helpful to coordinate ocean-related issues and advance the ecosystem-based management in Korea. A partnership between the central government (MOMAF) and local governments such as financial incentive and program consistency as found in the Coastal Zone Management Act of the U.S. would be helpful in encouraging local governments to participate in ecosystem-based management.

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