



Contrasting marine policies in the United States, Mexico, Cuba and the European Union: Searching for an integrated strategy for the Gulf of Mexico region

Ivonne Cruz, Richard J. McLaughlin*

Harte Research Institute for Gulf of Mexico Studies, Texas A&M University-Corpus Christi, Corpus Christi, TX 78412-5869, USA

ARTICLE INFO

Article history:

Available online 23 September 2008

ABSTRACT

The three nations surrounding the Gulf of Mexico (GoM) are experiencing rapidly expanding populations and economic development. Problems associated with governing a transboundary body of water such as the GoM are becoming increasingly evident. Despite various attempts within each nation to establish more integrated ocean and coastal governance mechanisms within their own jurisdictions, there has been very little cooperation between the U.S., Mexico and Cuba in developing coordinated maritime policies for the GoM Region. After providing an overview of current marine policy initiatives in the three nations, a brief analysis of recent efforts by the European Union is presented. The paper contends that this European initiative may provide guidance for future integrated management policies in the GoM, but notes that progress depends on reducing legal and political obstacles to international collaboration in the Region.

© 2008 Elsevier Ltd. All rights reserved.

1. Introduction

Most coastal nations of the world already have a variety of sectoral policies in place to manage different uses of the ocean such as shipping, fishing, and oil and gas development. However, it has only been in the last decade that coastal nations have undertaken concerted efforts to articulate and implement an integrated vision for the governance of ocean areas under their jurisdiction to harmonize existing uses and laws, to foster sustainable development of ocean areas, to protect biodiversity and vulnerable resources and ecosystems, and to coordinate the actions of the many government agencies that are typically involved in oceans affairs.

This is a very encouraging development, as it responds to the reality of serious conflicts of use in most national and international ocean zones and to the prescriptions articulated in both the United Nations Law of the Sea Convention and in the 1992 Earth Summit, which emphasized that ocean and coastal governance must be “integrated in content and precautionary and anticipatory in ambit” [1]. Moreover, it furthers the widely accepted view that effective ocean governance can only be achieved in the context of large marine ecosystems (LME) where nations cooperate in managing transboundary issues. The Gulf of Mexico (GoM) is one of

eleven LMEs globally to receive funding from the Global Environment Facility (GEF) to improve integrated coastal management principles in the region.

The Gulf of Mexico (GoM) is a center of marine biodiversity, fisheries, oil and gas production, maritime transport, and recreation making it one of the most productive ecosystems in the world. Certainly, protecting its biodiversity while recognizing the importance of valuable socio-economic activities poses serious governance challenges and therefore strategies need to be developed for the sustainable management of resources without compromising important ecosystem services or the human well-being of those who depend on the Gulf.

As the nations surrounding the Gulf are experiencing rapidly expanding populations and economic development, an urgent need arises to strengthen the efforts to build inter-governmental collaboration between the United States, Mexico and Cuba. Despite the complex and difficult political relations existing between the three nations, mutually beneficial collaborative efforts are possible. These efforts should concentrate on very clear targets where some success stories can be told. Experiences elsewhere, such as in Europe, show that transnational communities are capable of engaging in the process of ocean and coastal policy planning across international boundaries. For example, the *European Union (EU) Green Paper on a European Maritime Policy; an Integrated Maritime Policy for the European Union* provides an example of serious commitment and collaboration among parties to tackle unresolved conflicts regarding the sustainability and conservation of marine resources. This effort should provide guidance for the future in other marine regions, including the GoM [2,3].

* Corresponding author. Harte Research Institute for Gulf of Mexico Studies, 6300 Ocean Drive, Unit 5869, Room 311, Corpus Christi, TX 78412-5869, USA. Tel.: +1 361 825 20 10; fax: +1 361 825 20 50.

E-mail addresses: ivonne.cruz@tamucc.edu (I. Cruz), richard.mclaughlin@tamucc.edu (R.J. McLaughlin).

Hence, an overview of the ocean policy frameworks of the three nations surrounding the GoM (i.e. U.S., Mexico and Cuba) will be provided in order to characterize existing policy regimes and describe the potential for regional approaches to improve the GoM's sustainable development and conservation. Steps being taken by the European Union to engage in transnational governance will also be examined with the aim of demonstrating the growing trend toward developing new instruments and forums to address regional governance issues in hot spots of the world where fragile political relations coexist.

Problems associated with governing a transboundary body of water such as the GoM and the great need to incorporate an integrated transnational ecosystem management model will be highlighted. At the same time, an analysis of the entrenched political circumstances that characterize the GoM's governance challenges will also be discussed as the authors present a series of ideas that could be undertaken as opportunities to overcome political constraints among the three affected countries.

2. Overview of U.S. ocean and coastal policy

2.1. Historical context

It has been estimated that ocean-related activities directly contribute more than \$117 billion and well over 2 million jobs to the United States' economy. If coastal watershed counties are considered, this estimate expands to over \$4.5 trillion [4]. One of the nation's most important ocean and coastal regions is the GoM. Its shoreline stretches 3540 miles making it the ninth largest body of water in the world. Many of these coastal areas are among the fastest growing in the nation. More than twenty million people currently live along the U.S. portion of the Gulf. Moreover, a number of key sectors of the U.S. economy such as offshore energy, vessel construction, fishing, marine transportation, and tourism are concentrated in the GoM.

Unquestionably, the health of the nation's ocean and coastal waters is one of its greatest assets, yet a variety of natural and anthropogenic stresses are increasingly in evidence. In the GoM, degraded water quality, loss of critical habitat, introduction of invasive species, depleted fish stocks, increased coastal erosion, greater vulnerability to coastal hazards, and other problems are taking place at an accelerated pace.

As in most nations, the traditional approach to managing coastal and ocean areas in the U.S. has been at sector specific, isolated levels with little cooperation or collaboration across local, state, tribal, federal, or international boundaries. Fragmented laws with overlapping and unclear jurisdictions and disjointed policies have presented management difficulties for decades. In fact, the first attempt to develop a more comprehensive and unified ocean policy took place over four decades ago when Congress created the Marine Resources and Engineering Development Act in 1966. The so-called Stratton Commission, a blue-ribbon panel mandated by the Act, produced a very influential report entitled *Our Nation and the Sea: A Plan for National Action* three years later [5]. Much of today's ocean and coastal-related administrative infrastructure such as the National Oceanic and Atmospheric Administration (NOAA) as well as some of the most important pieces of legislation including the Coastal Zone Management Act, Marine Sanctuaries Act, and the Magnuson-Stevens Fisheries Conservation and Management Act were the result of recommendations from the Stratton Commission Report.

Despite these early attempts at integrated ocean and coastal management, by the late 1990s, dissatisfaction with the effectiveness of the nation's ocean and coastal governance regime was widespread. There still is no regulatory entity that has oversight authority over the whole ocean. Moreover, multiple agencies with

regulatory authority over marine resources generally have to comply with multiple federal statutes depending, for example, on whether the resources in question are fish, marine mammals, oil and gas, dredged materials, renewable energy or others. These sector and resource specific statutory schemes are complicated further by divisions of authority between the states and federal government.

Calls to reform this fragmented and confusing governance system led to the formation of a second set of blue-ribbon commissions. A central theme underlying the creation of these commissions was a growing consensus that human impacts on the marine and coastal environment require consideration of all interconnected ecosystem components. Moreover, it was determined that the best method of gaining this understanding was through the work of a diverse group of experts who were willing to solicit and incorporate the views of a broad cross-section of ocean and coastal stakeholders.

2.2. Two National Ocean Policy Commissions are established

The first commission was created through the leadership and funding of the private Pew Foundation. After holding meetings, hearings and workshops over a two-year period, the Pew Commission issued its report, *America's Living Oceans: Charting a Course for Sea Change*, in 2003 [6]. The report analyzed the full range of governance, fisheries, pollution and coastal development issues. Its final findings determined that the laws, institutions and practices of the current U.S. ocean governance regime were too fragmented, disjointed, uncoordinated, and poorly funded to protect and restore the nation's ocean and coastal areas [7]. Unsurprisingly, the report placed heavy emphasis on a shift toward ecosystem-based management. It also advocated the creation of a new independent ocean agency with the authority to develop and enforce binding and comprehensive regional ocean ecosystem plans. Additionally, it recommended that ocean zoning should be used as a primary planning tool to reduce conflicts between incompatible activities [8].

At about the same time that the Pew Commission was beginning its efforts, the U.S. Congress enacted the Oceans Act of 2000 [9]. Supporters of a more unified and comprehensive ocean management policy convinced Congress that while important, the actions by the private Pew Commission would not have sufficient authority to push through needed reforms and that only a commission with the imprimatur of the federal government would suffice. Consequently, the Oceans Act mandated the creation of the United States Commission on Ocean Policy (USCOP), a bipartisan panel of sixteen experts. This Commission was tasked with holding national hearings and preparing a report outlining recommendations for a unified and comprehensive ocean policy that would be submitted to Congress and the President.

The USCOP final report entitled *An Ocean Blueprint for the 21st Century* (hereinafter referred to as Ocean Blueprint) was published in September 2004. The Ocean Blueprint was well over 500 pages in length and contained over 200 specific recommendations for executive and legislative branch actions to establish a comprehensive and coordinated national ocean policy [4]. The Ocean Blueprint recognized many of the same problems described in the Pew Commission Report, most importantly the need for an integrated approach to managing ocean areas at large regional marine ecosystem and watershed scales [10]. Like Pew, it determined that the only way this could be achieved was by creating a new governance structure. It recommended that this reformed governance structure consist of a new cabinet-level National Ocean Council (NOC) within the White House. The NOC would oversee the work of voluntary regional ocean councils, which would facilitate the

development of regional goals and priorities to advance ecosystem-based management.

2.3. Implementation of the Ocean Policy Commission's recommendations

Although the Ocean Blueprint provided a strong foundation for political action, leadership by the Executive Branch is essential to move recommendations forward to achieve meaningful results. As it was required to do in the Congressional legislation that created the USCOP, the Bush Administration responded to the Ocean Blueprint by issuing its own "U.S. Ocean Action Plan" laying out the concrete steps it would take to implement the Blueprint's recommendations [11].

The Bush Action Plan identified nine immediate and long-term action items that it would implement in the coming years to improve the nation's ocean and coastal health and productivity. These action items include [11]:

- Establishing a New Cabinet-Level Committee on Ocean Policy.
- Working with Regional Fisheries Councils to Promote Greater use of Market-based Systems for Fisheries Management.
- Building a Global Earth Observation Network, Including Integrated Ocean Observation.
- Developing an Ocean Research Priorities Plan and Implementation Strategy.
- Supporting Accession to the UN Convention on the Law of the Sea.
- Implementing Coral Reef Local Action Strategies.
- Supporting a Regional Partnership in the Gulf of Mexico.
- Seeking Passage of a NOAA Organic Act Establishing NOAA within the Department of Commerce.
- Implementing the Administration's National Freight Action Agenda.

Determining the practical impact that the Ocean Action Plan has had on improving the governance of the nation's ocean and coastal areas is hard to precisely gauge. In order to assess the collective progress toward implementing the recommendations made by the U.S. Commission on Ocean Policy, the Joint Ocean Commission Initiative (JOCI) was created. JOCI is a collaborative effort by a task force made up of former members of USCOP and the Pew Ocean Commission to accelerate the pace of ocean policy reform [12]. An important ongoing aspect of this effort is a yearly U.S. Ocean Policy Report Card. As it had done in 2005, the latest Report Card issued in 2006 gave a very mixed set of grades to the Bush Administration and Congress for their efforts [13].

On an (A–F) grading system, the issue of National Ocean Governance Reform was given a grade of (C–). According to JOCI, progress was made in establishing the Northwest Hawaiian Islands National Monument and in expanding efforts to improve inter-agency planning and stakeholder planning and coordination. However, little was accomplished in enacting legislation codifying a national statement of ocean policy or reforming NOAA. There was also a failure in expanding protection for other marine areas.

The highest awarded grade of (A–) was in Regional and State Ocean Governance Reform. Federal and State Government leadership in establishing new regional and state initiatives including the GoM, West Coast, New York, and Washington were given strong marks. Improvement is needed in creating a national framework to support and encourage new and existing regional and state regional governance efforts.

A grade of (D–) was given for International Leadership. JOCI noted some progress in U.S. efforts to strengthen international agreements to conserve high seas fisheries and whales. However,

the government was strongly criticized for not acceding to the United Nations Convention on the Law of the Sea.

The subject of Research, Science, and Education was awarded a (D+). Bush Administration efforts to adopt ocean research priority planning and implementation strategies as well as legislation addressing tsunami preparedness and reduction of marine debris were cited as important accomplishments. In contrast, chronic under-funding of ocean science and education and the failure to recognize the ocean's role in climate change were viewed as negatives.

Fisheries Management Reform was graded (B+). This relatively high grade reflected the achievement of enacting the Magnuson-Stevens Fishery Conservation and Management Reauthorization Act of 2006. Improvement is needed in providing rulemaking and funding to implement the newly enacted provisions.

The lowest grade of (F) was awarded for New Funding for Ocean Policy and Programs. JOCI noted that very little progress has been made in funding ongoing and new ocean policy initiatives. There has been no effort to establish the recommended Ocean Trust Fund to support state and federal programs. This lack of progress to improve ocean funding was also highlighted in the Senate Committee on Appropriations report of June 29, 2007 [14].

2.4. Practical impact of Federal and State Ocean Policy initiatives in the Gulf of Mexico

The thoughtful analysis and recommendations put forward by the Pew Oceans Commission and USCOP provide a strong theoretical and strategic foundation for the effective management of human impacts on the nation's ocean and coastal areas. However, the relatively low grades awarded in the JOCI Report Cards and failures to improve ocean-related federal funding indicate that significantly more progress is needed. There is no question that the Bush Administration and Congress have engaged in the process of implementing the recommendations in good faith. Yet, it is equally clear that ideological and political realities have made meaningful implementation an arduous task.

Coordination of ocean policies among executive branch agencies has been improved as a result of leadership exhibited by the Council on Environmental Quality and inter-agency cooperation through the subcommittees established under the President's cabinet-level Committee on Ocean Policy. This has led to important improvements in prioritizing and integrating federal ocean-related science, management, and education activities. In addition, NOAA has taken on a leadership role in advancing ecosystem-based management throughout those areas where it has legal authority [10].

However, much of this inter-agency activity is *ad hoc* and has not been made a part of the White House's permanent coordinating structure. The complex geographic and regulatory divisions for managing marine resources remain essentially unchanged [15]. Moreover, very modest levels of additional funding have been allocated to these efforts indicating a lack of commitment on the part of the Administration.

The impact that these initiatives have had to date on governance in the GoM is also relatively modest. Probably, the greatest impact has been the increased attention and effort that is being placed on regional ocean governance in the Gulf of Mexico. A larger group of players at federal, state, and local levels are thinking about better methods of collaboration and improved means of implementing regional governance.

2.5. Gulf of Mexico Alliance

The most important and ambitious of these collaborative efforts is the Gulf of Mexico Alliance (hereinafter Alliance). The five U.S.

States adjacent to the Gulf – Florida, Alabama, Mississippi, Louisiana, and Texas formed the Alliance in December 2004 in recognition of the need to cooperate and address shared ocean and coastal problems. Although the Alliance was intended to be state driven, the President's U.S. Ocean Action plan highlighted the importance of regional cooperation in the Gulf of Mexico and called on federal agencies to explore partnership opportunities.

Through the combined efforts of the five states and several federal agencies, a list of priority issues were identified and a timetable of concrete actions was developed and released to the public at the State of the Gulf Summit hosted by the Harte Research Institute for Gulf of Mexico Studies at Texas A&M University – Corpus Christi in March 2006. Known as the *Governors' Action Plan for Healthy and Resilient Coasts*, the plan challenges the Alliance to take specific steps to make progress on five priorities over a 36-month period. These priorities include: (1) Improving Gulf Water Quality; (2) Restoring and Conserving Coastal Wetlands (after the plan was published, improving coastal resiliency was added as an additional priority area); (3) Environmental Education; (4) Identification and Characterization of Gulf Habitats to Inform Management Decisions; and (5) Reductions in Nutrient Loading [16].

Each of the five Gulf States is responsible for leading the effort to complete the action items for one of the five priority areas. The Environmental Protection Agency's Gulf of Mexico Program and NOAA's Coastal Services Center are leading the Federal partnership effort. Uneven, but steady progress has been made in carrying out the 11 actions and 73 action blueprint steps mandated in the *Governors' Action Plan*. Dozens of community workshops have been held throughout the Gulf of Mexico and Caribbean Region to solicit input and advice from the public. In addition, numerous face-to-face meetings and teleconferences have taken place between state and federal representatives working to further the aims of the Governor's Action Plan. Planning is now underway to develop a second set of action items beyond the initial 36-month period beginning in 2009 [16].

It is well recognized that the Alliance lacks a formal governance structure and dedicated funding. Given these drawbacks, participants are uncertain about the mechanisms through which the Alliance will make decisions over time [8]. It is also well known that the priority issues chosen to become part of the *Governors' Action Plan* represent only those issues that were deemed relatively uncontroversial and easily achievable. Obvious issues of great concern in the GoM such as managing offshore oil and gas, fisheries management, and the impact of climate change and sea level rise need to be addressed in the future regardless of their political sensitivity.

It will also be important in the future to more fully incorporate Mexico and Cuba into the Alliance. Only through collaborative partnerships that recognize the trilateral nature of the Gulf of Mexico as a transboundary and shared resource will effective and lasting regional governance become a reality.

Serious questions remain about the long-term impact and staying power of the Gulf of Mexico Alliance. Nevertheless, the simple process of bringing together representatives from different levels of government and across sectors to give more attention to the needs, the obstacles, and the means of implementing regional ocean governance in the Gulf of Mexico is a welcome and positive outcome.

3. Overview of Mexican Ocean Policy

3.1. Historical context

Despite of the ecological and socio-economic importance of Mexico's coastal zone, a lack of planning and integrated management has caused profound environmental degradation and the loss

of valuable ecosystem resources [17]. Historically, Mexico has approached marine policy and management issues in a very limited fashion due to its geographical location and population distribution as a continental country. Approximately twelve percent of the population inhabits Mexican coastal zones and at least one out of five Mexican's income and/or subsistence depends directly on the resources provided by the GoM [18]. However, the pace of natural and anthropogenic stresses is occurring much faster than any mitigation strategies to prevent environmental decline. Paradoxically, although Mexico's coastal zone has always been an important economic area to the nation, coastal and ocean activities have traditionally played a relatively minor role in Mexico's cultural, historical, and political heritage. Consequently, until very recently, the Mexican people have shown limited attachment to their oceans and little conscience for coastal conservation [19].

Mexico exports a wide variety of products globally, but it suffers from serious constraints due the lack of a well developed merchant marine industry and antiquated port development policies. The first governmental maritime program, known as "*Marcha al mar*" (Moving toward the Sea), was established in 1959. Transferred to the Marine Ministry in the late 1970s, it consolidated operations of the nation's oil fleet throughout the Latin American Region [19]. However, other activities such as tourism, resource exploitation, fishing as well as farming and agriculture have been neglected and managed very ineffectively. For example, recent data indicates that marine biodiversity in the GoM Region is notably higher than other areas of the nation, but it has fewer coastal and marine protected areas than other areas in Mexico [20]. Human settlements, urban, agricultural and tourism development in the Gulf have been undertaken with no strict regulations or zoning plans. In the absence of comprehensive coastal planning, additional development pressures represent a continuing threat to natural resource conservation.

As affirmed by Zarate Lomeli and SEMARNAT [21,22] all zoning plans and legislation of Mexico's coasts and oceans are based on Article 27 of the Mexican Constitution in accordance with relevant provisions of the United Nations Convention on the Law of the Sea (UNCLOS) [23]. Article 27 declares that dominion (direct ownership) of all waters and the beds and banks of inlets, bays, lakes, and rivers are vested in the nation. UNCLOS provides coastal nations with the sovereign right to explore, exploit, conserve and manage all natural resources within 200 nautical miles of their coastlines. Given these constitutional and treaty-based rights, Mexico's federal government has broad and paramount authority to manage coastal and ocean areas.

Mexico's coastal zone is currently governed by a multitude of single sectoral laws and agencies. For example, there are seventeen federal laws and eight federal regulations, as well as nine federal offices with direct or indirect jurisdiction over coastal areas [21]. According to SEMARNAT, the following limitations hinder effective coastal management:

- (1) Lack of integration of regulations of coastal and ocean matters.
- (2) Incongruity between the different legal instruments.
- (3) Legal Gaps.
- (4) Conflicts or lack of articulation of legal competences.
- (5) Lack of control and surveillance.

These deficiencies have resulted in deterioration and over exploitation of natural resources, pollution, and impoverishment of coastal communities, an increase in illegal activities and other problems [21].

The Law for Environmental Pollution and Prevention Control enacted in 1971 [24], might have been the precedent to what we now know as the *Ley General del Equilibrio Ecológico y la Protección al Ambiente* or General Law of Ecological Equilibrium and

Environmental Protection (LGEEPA). This important piece of Mexican environmental protection legislation was enacted in 1988 and defines the framework for environmental law in Mexico. Overall, the LGEEPA ensures environmental assessment of specific projects and guarantees the right of public participation to preserve Mexico's environment. Despite its weaknesses, LGEEPA remains the keystone legislation that will serve as the foundation for future integrated coastal management efforts [25].

During the last three to four presidential terms, environmental policy has shifted in importance depending on the administration. For example, it was merely a political slogan in Salinas' term, but placed as a high level priority in Zedillo's. The Fox Administration was characterized as allowing a "decline in the environmental agenda" as the private sector played an important lobbying role advocating against legislative initiatives for environmental protection [24]. This may explain why programs like *Agenda del Mar* (Ocean's Agenda) launched in the year 2000 never really came to action. This program was created to encourage discussion of integrated decision making by the public federal administration and other sectors with stakes in ocean and coastal activities. Little seems to have resulted from these efforts, as no follow-up action plans or outcomes can be found in the public literature. However, the Fox Administration did initiate some important new efforts to assess the current state of integrated coastal management and to provide a potential framework for future initiatives.

3.2. Recent marine policy and other governance strategies

One very important ocean planning effort was released at the very end of the Fox Administration. In September 2006, the *Secretaría de Medio Ambiente y Recursos Naturales* "SEMARNAT" (Ministry of the Environment and Natural Resources) presented the National Environmental Policy for the Sustainable Development of the Oceans and Coasts: Strategies for its Conservation and Sustainable Use also known as PANDSOC for its acronym in Spanish: *Política Ambiental Nacional para el Desarrollo Sustentable de los Océanos y Costas*. This document aims to draw the general guidelines of public policy for the integrated management of the coastal and marine zones of the country with the aim of promoting governance, strengthening critical habitats and supporting sustainable development of coastal areas [21].

President Felipe Calderon's recent term seems to be addressing environmental issues in a serious and strategic manner. Within this framework, the *Convenio Marco para el Ordenamiento Ecológico Marino y Regional del Golfo de México y Mar Caribe*, (General Agreement for the Marine and Regional Ecological Ordinance¹) was completed. The aim of the agreement is to have a political document which will bind stakeholders from the Gulf of Mexico and the Caribbean regions to a common agenda for conservation and environmental management. This initiative was led and signed by several federal administration agencies and six state governments in the Gulf region in September 2007 [26]. The agreement represents an important landmark of new approaches to Mexican ocean and coastal policy as it describes a detailed process for ecological ordinance, legislation and evaluation guidelines to take place in the above mentioned coastal and marine areas.

Historically, ocean policy in Mexico has been driven by society and interested members of the scientific community rather than the government. This has constrained its development and slowed

the process of implementing adequate legal frameworks and defining common priorities among federal agencies. New governmental efforts should strengthen environmental cross-cutting agendas and improve the possibility of moving firmly toward sectoral integration. In this sense, regional integration strategies are becoming more popular and will encourage new initiatives from the environmental agency (SEMARNAT) to strengthen collaboration in the sustainable governance of the country's ocean and coastal resources.

For example, SEMARNAT has established the *Dirección de Integración Regional* (Regional Integration Program), which has been placed in charge of developing all the appropriate instruments to coordinate conservation programs across Mexico. Moreover, through PANDSOC the various governmental agencies are developing a series of strategies and policies to accomplish their missions.

In 2007, President Calderón also announced the *Estrategia Nacional para el Ordenamiento Ecológico del Territorio en Mares y Costas* (National Strategy for Ecological Ordinance for Coasts and Seas). A branch program of PANDSOC, the National Strategy is one of the most innovative or at least, up-to date versions of an integrated management strategy for marine resources in Mexico. At its core, this national approach intends to target: (1) the general ecological legislation of the territory, (2) the establishment of an Inter-Ministerial Commission for Integrated Management of Coasts and Oceans, (3) the elaboration of the National Policy for Coasts and Oceans for the Federal Public Administration, (4) the ecological legislation of all the marine regions of the nation and the generation of strategies, (5) coastal wetlands management including mangroves, most particularly, (6) the protection of coastal and marine biodiversity, and (7) sustainable development of tourism, fisheries and aquaculture in coastal and marine areas among others [21].

Additionally, some other parallel programs support the guidelines of this National Strategy [27]:

- Consultative Council for the Sustainable Use and Protection of Mangroves and Coastal Wetlands.
- Regional Action Program for the Yucatan Peninsula.
- Ecological Legislation of Mexico's Basin Region.
- Environmental Condition of the Coastal-Marine Zone, particularly coastal wetlands and mangroves.
- Transboundary Diagnosis for the Large Marine Ecosystem of the GoM.
- *Bitácora ambiental* (Environmental Log) for the GoM and the Caribbean (providing national updates of the latest issues on legislation and agreements reached in the region).

It is not the purpose of this paper to describe all of the programs mentioned above.² Overall, it is good news that efforts are being focused on defining a clearer national policy for the sustainable use of the nation's coasts and oceans. In the future, this approach may provide a comprehensive mechanism to institutionalize marine conservation strategies and guarantee that law and environmental policies will be implemented and enforced.

This overview shows that SEMARNAT will be taking a leading role in implementing a new multi-stakeholder approach to tackle ocean and coastal issues. Although incorporating civil participation and developing other relevant instruments to improve governance are identified and encouraged throughout the National Strategy, the final approach Mexico takes to deal with international/regional

¹ The term "ordinance" has a different meaning in Mexico than in the United States. In the U.S. "ordinance" is generally used to describe a local or municipal statute. In Mexico, "ordinance" describes a political instrument of environmental law. Normally, it is used to identify conservation areas as well as to delimitate economic and other high impact activities affecting the environment.

² Reviewing SEMARNAT's web site for this purpose is quite illustrative. (see: http://www.semarnat.gob.mx/queessemarnat/politica_ambiental/Pages/inicio.aspx).

maritime policy issues and sustainable governance remains to be determined.

4. Overview of Cuban Ocean Policy

4.1. Historical context

Located at the confluence of the Atlantic Ocean, Caribbean Sea and Gulf of Mexico, Cuba is home to some of the world's most spectacular coral reefs. Its extraordinarily diverse and extended ecosystem has somehow prevailed in a generally pristine and unexplored condition although it is facing dangerous threats due to unplanned coastal development, tourism and overfishing [28].

Environmental damage has been mostly due to historically inadequate planning in agricultural, industrial, transportation, fisheries and tourist activities. However, new amendments to the Constitution have been made aimed at minimizing future degradation of habitats in the country. After the Rio Summit in 1992 some of these changes began to take place as the Cuban Constitution was amended to incorporate sustainable development principles to protect the environment [29].

Historically, jurisdiction over environmental law and policy issues was widely distributed among many entities and government agencies. This changed in 1976 when the *Comisión Nacional para la Protección del Medio Ambiente y los Recursos Naturales* (COMARNA) or National Commission for Environmental Protection was created and then replaced in 1994 by the *Ministerio de Ciencia, Tecnología y Medio Ambiente* or Ministry of Science, Technology and Environment (CITMA) [30]. The Ministry of Fishing Industries has controlled and regulated access to the nation's fisheries resources. Unsurprisingly, its single sectoral approach to ocean conservation has been ineffective and has raised concerns about the deterioration of the Cuban environment due to overfishing and related terrestrial activities.

The National Environmental Strategy (Estrategia Ambiental Nacional) adopted in 1997 was instrumental in creating an emerging series of environmental laws and regulations implementing a new vision for natural resource protection [29]. Decree-Law 81 (*Decreto-Ley 81*) (The Law of the Environment) passed that same year, established the general principles for the conservation and improvement of living and non-living resources of the coastal zone. This law was supplemented by Decree-Law 212 (*Decreto-Ley 212*). The Law of the Coastal Zone was enacted in 2000 for the protection of coastal zones. This law took over twelve years to complete and provides guidance to deal with the increasing amount of tourism and other economic development occurring along the shorelines of the island. Decree-Law 212 was the result of long and serious scientific and legislative processes³ supported by extended research, negotiations and official approvals [31].

Conceived through work at various workshops attended by the Cuban Environment Ministry, the Center for Marine Conservation (a U.S. based non-governmental organization), and Tulane University Law School, the "Coastal Zone Management" Decree-Law 212 was intended to serve as an important judicial instrument for the conservation and sustainable use of coastal areas in Cuba. Since its enactment, entities such as the National Coastal Group, the Ministry of Fisheries, the Institute of Oceanography, and the Center for Engineering and Management of Bays have begun to provide

guidance for policy action plans for integrated management throughout the country [28].

Interestingly, unlike many of the other nations in the GoM/Caribbean Region, politics and poverty have insulated Cuba from rapid development and the environmental destruction that often accompanies it [31]. However, this situation is beginning to change as Cuba moves forward with aggressive plans to increase tourism and develop potentially large offshore hydrocarbon deposits off of its northern coast.

In the past decade, Cuba has become one of most rapidly growing tourist destinations in the Caribbean region. By 2004, the nation's hotel capacity exceeded 45,000 rooms, which represents a 10,000-room increase in only five years [32]. Much of this booming tourism industry will be located in coastal areas.

Adding to this environmental pressure will be the future development of potentially large hydrocarbon deposits in the deep offshore Gulf of Mexico waters, along the western approaches to the Florida Straits and the eastern extension of Mexico's Yucatan Peninsula [33]. Cuba has already leased twenty offshore blocks to international oil companies from Spain, India, Malaysia, Canada, and Venezuela. It has been estimated that if these offshore concessions prove to be commercially viable, it will take from three to five years for production to begin [33].

Although Cuba's economic development is rapidly accelerating, its overall environmental condition is better than most nations in the region due to its relative isolation from global economic forces since the early 1960s. Given this unique set of conditions, academics working with Cuban researchers have been laying the groundwork for targeted marine conservation efforts in areas of special environmental value and interest. Protecting Cuba's coastal areas involves policies on land as well. Regulating land-based activities has been quite difficult to accomplish and, although Cuba has excellent laws in place, the challenge is still lack of implementation [31]. Unlike many other nations there are few environmental groups and activists to force the strict implementation of environmental laws. Moreover, policy making in Cuba is still centralized and citizens rarely turn to courts to challenge decisions they do not like [34].

Poor political relations between the U.S. and Cuban Governments have made collaborative marine policy initiatives exceedingly difficult. Despite the current political environment, there are examples of collaborative marine conservation achievements particularly when the activity may have an implication on tourism activities in coastal areas. For instance, the *Sea Turtle Research and Conservation Group* is an example of a successful U.S.–Cuba collaborative experience that has been active for over four years [35]. However, this is an international network of individuals, communities, organizations, and institutions, dedicated to sea turtle conservation⁴ and therefore should not be viewed as a bi-national governmental initiative.

5. Cuba's most recent conservation and governance strategies

Most recently, Cuba drafted the *Estrategia Ambiental Nacional 2007–2010* (Environmental National Strategy 2007–2010) pointing clear guidance toward existing national policies while harmonizing them with international environmental management trends [36]. The model continues to be predominantly based on a socialist platform, which incorporates sustainable development as an intrinsic value of Cuba's revolutionary basis. According to Environmental Defense, opportunities for conservation exist because in forty years of socialist rule and economic strain, coastal

³ Some laws preceding the Decree-law 212 were, for example: the Law on Ports no.80, Law no. 81 on the Environment and a National Strategy on the Environment, the Decree-law 168 on the establishment of the Environmental Impact Assessments process and the Decree-laws 200 and 201 on the development of the National System of protected Areas, only to mention the most significant examples [31].

⁴ <http://www.grupotortugero.org/>.

development and fisheries harvesting in Cuba have not been as rampant as in neighboring Caribbean countries [31]. Given these unique circumstances, international conservation groups are keeping a close eye on development and its effects on the environment.

The National strategy emphasizes Cuba's respect and acknowledgment of the importance of international environmental norms and policies while stressing the importance of retaining control over its natural resources. Cuba's position is to strongly support all developing nations (particularly throughout the Caribbean and the Latin American region) while advocating for the protection of their sovereign and equitable goals to pursue economic development in complete possession and control of their natural resources [36].

Under this vision, Cuba's international environmental cooperation has been relatively moderate and they have played key roles in international organizations and treaties such as, UNEP, GEF, UNFCCC, Cartagena Convention, (SPAW Protocol), the Rio+10 process, AOSIS and the Ministries' Forum for the Environment in Latin America and the Caribbean, to mention a few.

A large number of marine science conferences have taken place since the year 2000 with a wide range of participation from Latin American countries, including Cuba, and the U.S. At these gatherings scientists have shared new research on marine conservation and have discussed management of depleted fisheries and the impact of coastal tourism [37]. Last year an important conference took place in Cancun, Mexico with the commitment to discuss key issues on how to protect the GoM. Mexican, Cuban and U.S. scientists gathered in order to draft a six point action plan to collaborate on pressing issues such as: coral reef conservation, wildlife protection (sharks, monitoring marine turtles and dolphins) conservation and management of fisheries resources, and enhancement of a protected areas program [35].

A number of barriers (i.e. economic, legal and social) limit Cuba's ability to address environmental protection efforts. At an institutional level, the lack of personnel, transportation, financial resources and monitoring systems restrain government agencies from doing their job [29]. Some economic tools have been authorized under Decree-Law 81 to provide economic instruments for environmental management purposes. For example, Resolution 60/2000 allows tariffs and green credits (revenues generated from environmental license fees and international donors) to finance environmental projects. Similarly, Resolution 36/99 authorizes the Ministry of Finance and Prices to set rates for the exploitation of Havana Bay [29].

Whether the socialist model poses an obstacle or an opportunity for environmental law and conservation policies remains to be seen. Much of the debate on this topic proceeds along ideological grounds. Some commentators believe that Cuba's socialist system has been premised upon "conquest and subjugation of the natural environment." [29]. Others argue that socialist values place a high priority on ecological protection as a natural correlate of its commitment to improving the quality of life as a primary goal of development. Both of these views are probably overly simplistic. Regardless of the outcome of this debate, it is clear that foreign investments and the work of international governmental and non-governmental organizations will play an increasing large role in making Cuba accountable for the choices it makes in managing its coastal and ocean areas.

6. The need for integrated and coordinated ocean and coastal policy for the Gulf of Mexico

During the last three decades, Mexico and the U.S. have agreed on several maritime boundary issues throughout the Pacific Ocean and the Gulf of Mexico [38]. This new era of cooperation must now

extend to finding effective methods of managing the transboundary marine resources that exist in these ocean areas.

Most recently, the two nations agreed on a maritime boundary separating the 200 mile Exclusive Economic Zones (EEZ) in the GoM, which entered into force on November 13, 1997 [39]. Geological surveys suggest that favorable conditions exist for commercially viable quantities of oil and natural gas in many portions of the GoM maritime boundary region. Huge discoveries have already been made very close to the international maritime boundary in an area located about 125 miles east of the South Texas mainland known as the Perdido Foldbelt [40].

Shortly after the 1997 maritime boundary treaty was completed, the two nations successfully engaged in negotiations over that portion of the GoM that lies beyond the nations' respective 200-mile EEZs. This pocket of high seas, known as the Western Gap, is an area slightly smaller than the U.S. State of New Jersey. It is also believed to contain significant quantities of oil and gas resources. The Delimitation Treaty, signed on June 9, 2000, divided the Western Gap and gave the U.S. about 38 percent and Mexico about 62 percent. Importantly, at Mexico's insistence, the treaty also established a 2.8 nautical mile buffer zone along the new boundary where both nations are prohibited from exploiting hydrocarbon resources for a period of ten years. During the ten-year moratorium the two nations "shall meet periodically for the purpose of identifying, locating and determining the geological and geophysical characteristics of such reserves" [39]. However, to the authors' knowledge, no such meeting has ever been held. It is unclear what will happen when the moratorium expires in 2010.

Taking into account the transboundary characteristics of many of the hydrocarbon resources located in the GoM maritime boundary region, it is very important that the U.S. and Mexico engage in some form of bi-national cooperation in order to effectively manage the shared resources, protect the oceanic environment and comply with evolving norms of international law [40]. This cooperation needs to occur today rather than waiting until it becomes a serious political problem in their bilateral relations.

All in all, the question of Cuba, their foreign policy issues and its maritime boundaries also remain a pending and difficult topic. Mexico and Cuba successfully negotiated maritime boundary agreements in the late 1970's. However, the literature provides little indication that the two nations have exchanged scientific and technical knowledge beyond the occasional scientific conferences mentioned earlier.

Integration among the three countries is necessary but by all means problematic. Mexico and the U.S. are taking the first steps toward better cooperation in the environmental realm. One example involves establishing a network of marine protected areas (MPAs) in the GoM and elsewhere. In fact, U.S. President Bush, Mexican President Calderon, and Canadian Prime Minister Harper identified work under the North American MPA Network (NAM-PAN) as a key accomplishment in their joint statement issued at the end of their 2007 meeting in Montebello, Ontario [41]. Priorities of this initiative include enhancing collaboration among the countries to address common conservation, ecological, economic, social, and cultural challenges and to facilitate the strategic design and establishment of a system of MPAs throughout North America. Prior to leaving office in 2009, the Bush Administration is currently reviewing several new MPA designations including one known as the "Islands in the Stream" initiative that seeks to link a network of MPAs in U.S. and Mexican waters of the GOM [42].

U.S.–Cuban relations presents a greater challenge, but the chances to embark upon regional environmental protection strategies are still possible. Recently, Cuba has announced an ambitious program to designate 25 percent of its marine waters as protected areas with the cooperation of the U.S. based scientific community. An initiative of this type represents a great advance for marine

conservation in the region by assessing Cuba's approach to managing the waters of the GOM and western Caribbean and acknowledging the importance of international coordination in establishing and managing marine protected area networks [35].

Collaboration among the two countries in regional governance issues will certainly be difficult, since as suggested by Smith:

Perhaps the most striking thing about U.S. policy toward Cuba is the near-total disjuncture between stated objectives and the means chosen to achieve them. Not only do the means not serve the ends, they seem designed to work against [43].

U.S. policy toward Cuba is heavily focused on using political and economic levers to influence Cuba to adopt more favorable positions regarding advancing human rights, economic growth and open markets, refugees and immigration, and a peaceful transitional process in the post Fidel Castro era. Yet, little or no effort is being expended to explore areas of mutual concern such as multinational partnerships for sustainable development in the GoM where third parties, such as Mexico, could possibly facilitate sensible political and economic solutions.

Such is the case for the area in the GoM known as the Eastern Gap that lies beyond the 200 mile EEZ of the U.S., Mexico, and Cuba, where the ongoing political dispute between the U.S. and Cuba makes any boundary delimitation negotiations over this area exceedingly unlikely. As long as the Bush Administration remains in power, formal governmental cooperation with Cuba to resolve this marine boundary dispute will not occur. But as some of the Cuban policy analysts in the U.S. have advanced, the U.S. has established normal diplomatic and trade relations with China and Vietnam, and is currently negotiating with North Korea, why not give it a try with Cuba [44].

It has only been through the informal efforts initiated by academics, NGOs, and private foundations that cooperation between the U.S. and Cuba has slightly improved [34]. As mentioned previously, meetings like the one held in Cancun, Mexico last year provide a clear example of dialogue and commitment from the three countries in the achievement of some specific marine conservation goals [35]. Nevertheless, governance for sustainable development will require deeper discussions on topics entailing entrenched social, economic and certainly energy and resource management issues.

Therefore, considering the fact that there has been little work done to define geographical, social, cultural and economic aspects of the GoM in anything resembling an integrated fashion [19,22]; one can understand how transnational cooperation and development plans have not been functional as they lack an inter-institutional and multi-disciplinary approach aimed at incorporating different levels of management. These constraints limit regionalization of the GoM and hinder collaborative sustainable development strategies from moving forward. Overcoming these obstacles will become the real challenge for the three countries in order to achieve an integrated strategy for the GoM.

7. Early Efforts Toward Collaboration

Since 1995, Mexico and the United States have annually celebrated the Conference of Governors of the Gulf of Mexico where the "States of the Gulf of Mexico Accord" was signed.⁵ This represented one of the first attempts to set up an agenda on the need to develop a regional coastal management model for the Gulf [19]. This meeting also gave birth to the first association of American and Mexican academic institutions aiming to consolidate an environmental vision of the region and to write a first draft for an

integrated coastal management program. By the mid 1990s, collaboration between the two nations began to be considered of great relevance and other important efforts took place under the auspices of the North American Free Trade Agreement (NAFTA) and its Commission for Environmental Cooperation. These efforts opened a new chapter for cooperation in the GoM and other initiatives such as the Regional Research System for the GoM (SIGOLFO) or *Sistema de Investigación del Golfo de México*, and the Program for Coastal Resources at the Ecology Institute in Mexico came to the fore [19].

Later, the perceived need for more concrete policy and legal frameworks materialized and new organizations were created in order to address this emerging challenge for multinational governance solutions. Examples of these include the U.S. Environmental Protection Agency Program for the GoM, the Business Council for Sustainable Development of the Gulf, The Mexican-American Chamber for the Gulf, NAFTA, and The Economic Development Agreement for the Greater Caribbean [19]. Other related programs which have attempted to incorporate an international approach to the governance of the Gulf have been the Joint Working Group on Ocean Science, whose efforts resulted in a book entitled: *Building Ocean Science partnerships: The U.S. and Mexico working together* (AMC-NRC1999), the U.S. based Gulf of Mexico Alliance (GMA) and in Mexico the Regional Council for Coastal Development or *Consejo Regional para el Desarrollo Costero Marino* (CRDCM) only to mention a few.

Despite important contributions by these organizations, most of these initiatives have incorporated only two of the three governments interested in the region, namely Mexico and the U.S. Moreover, some of these programs have not met their ambitious early expectations. For example, the Gulf Accord and its private-sector counterpart, the Gulf of Mexico States Partnership, were established with great fanfare by the Governors of the five U.S. states and six Mexican States that share the Gulf of Mexico in the mid 1990s. Its objectives were to establish working partnerships, both governmental and private sector, among these states to promote economic and infrastructure development, as well as educational and cultural exchanges.

Under the auspices of the Gulf Accord, working-groups were established on a broad range of topics including Health, Ecology, and Environmental Protection; Tourism; Transportation, Infrastructure and Communications; and Legal Affairs. After an initial period of enthusiasm and growth, the Gulf Accord has been relatively moribund in recent years. Although the framework for U.S./Mexico cooperation still exists and the organization has the potential to significantly improve bilateral cooperation in the GoM, without an infusion of financial resources and governmental leadership, especially on the U.S. side, it will likely continue to play a nominal role in the development of collaborative policies in the region.

An inter-governmental program initiated a few years ago offers an unparalleled opportunity for integrated management of the GoM. The "Transboundary Diagnostic Analysis and Strategic Action for the Gulf of Mexico Large Marine Ecosystem" is coordinated and funded by The Global Environment Fund (GEF) United Nations Development Program (UNDP), and United Nations International Development Organization (UNIDO).

The objective of the proposed project is to enhance national regional efforts to move toward sustainable integrated management of the environment and resources of the Gulf of Mexico Large Marine Ecosystem (GOMLME). Priorities include strengthening a mechanism for regional cooperation and reviewing the existing knowledge and threats to the GOMLME to develop a Strategic Action Program (SAP). The SAP will examine legal, policy and institutional reforms and investments to address both threats to ecosystem sustainability and gaps in knowledge essential to the

⁵ <http://www.gomsa.org/accord/accord.html>.

sustainable management of the ecosystem (GEF, 2001). Apparently the logistics and politics associated with the three GoM nations working together was very hard to overcome. Cuba decided to drop out of the project and only Mexico and the U.S. are currently participating under the overall coordination of UNIDO.

The Harte Research Institute for Gulf of Mexico Studies (HRI) represents another tri-national attempt to improve cooperation [45]. HRI was established in 2001 at Texas A&M University – Corpus Christi to support and advance the long-term sustainable use and conservation of the Gulf of Mexico. A gift of \$46 million by local philanthropist Mr. Edward Harte, coupled with an additional \$18 million from the State of Texas to build a facility to house HRI were used to establish a research institute with a mission of providing international leadership in generating and disseminating knowledge about the Gulf of Mexico ecosystem and its critical role in the economies of the region. Functionally, HRI became operational when the new facility was finished in 2005 and since then has oriented its work toward understanding the Gulf of Mexico ecosystem, encouraging innovation in interdisciplinary scientific research, public policy initiatives, and education of the public. Emphasis has been placed on providing a work environment where natural and social scientists and policy professionals from the three GoM nations work collaboratively on topics of mutual interest [46].

8. Challenges Ahead

Global trends show that coastal nations are facing new challenges, and adopting integrated management strategies is becoming an imperative issue in the ocean policy arena, as shown in Table 1.

However, with few exceptions, nations manage their coastal areas in a unilateral rather than multilateral fashion. Jurisdictional, political and even cultural obstacles generally prevent nations from governing ocean areas in a truly collaborative way. Like other areas of the world, the nations surrounding the GoM must actively work toward overcoming many of these traditional barriers.

Over a decade ago, Costanza described some of the most relevant pressures being exerted on ocean ecosystems and characterized six major principles for sustainable governance of the oceans [48]. These principles include: (1) responsibility; (2) scale-matching; (3) precaution; (4) adaptive management; (5) full cost allocation; and (6) participation. While not all ocean and coastal issues require multilateral collaborative action, many of these principles may be unachievable in the absence of regional cooperation.

Assorted global environmental conventions do represent some measure of political commitment by the world community to seek to find consensus on improving sustainability of coastal zones. Many of these international legal instruments should no longer be viewed as just mechanisms to overcome jurisdictional obstacles, but have taken on something entailing social and political

dimensions. As Suarez de Vivero remarks, these become values and are one of the most significant aspects of marine governance. Changing strategies “involves hard choices regarding the market (public/private), the resource ownership regime (EEZ/high seas), international relations (nationalism/multilateralism) and civil society’s scale of action (local/global)” [49]. When making collaborative choices, the identity of each particular society is not eroded. Each country holds a particular development model to enhance multilateralism through international relations and even markets, but the national identity should be preserved and be seen as an asset in any regional policy initiative.

Well known international agreements such as the Conventions on Climate Change, Biodiversity, and the World Summit on Sustainable Development⁶ Plan of Implementation recognize that all countries, both rich and poor, have essential work to do on policy, legal and institutional reforms and investments to secure their coastal areas. Duda suggests, however, that the danger of coastal and ocean degradation remains a relatively low priority for most nations. He argues that,

The problem of degraded coastal belts globally is not just one of lost nature, lost vistas, and lost economic opportunities. It represents a threat to global security and stability that seems hardly recognized by foreign affairs ministries. This inadequately addressed concern is pointed out in the papers as illustrating the failure of international policy and application of international instruments [50].

There are success stories to report. For example, joint outreach projects have taken place in countries like Costa Rica and Panama where very effective environmental education programs have been initiated through transboundary marine national parks and fishing communities within the two countries. This is a clear example of the type of collaborative work and commitment that could be accomplished by neighboring countries when their Ministries of Education and Environment, academic institutions, and non-governmental organizations fully engage in the process [51].

9. Instruments for integrated ocean and coastal policy making: Green Paper on a future European Maritime Policy

9.1. The European context

In recent years, ocean and coastal issues have been a greater focus of European Union (EU) efforts to promote the economic and political integration of member states. Europeans have long recognized the importance of their maritime spaces and how these are indeed central to their well-being and prosperity. Oceans provide them with trade routes and are crucial for climate regulation, sources of food, energy and resources, and as a favored site for their citizens’ residence and recreation.

EU member states determined that a comprehensive analysis of policies affecting maritime affairs was essential to coordinate sectoral policies and stimulate the creation of synergies between different areas resulting in better policy-making outcomes. At a broader level, the question of governance was more focused on how the EU could bring about a change in the way European societies think about their relationship with the seas and how their political systems take decisions affecting them [52]. But furthermore, many different policy areas covered by the European Commission were found to be linked to the sea. Issues such as fisheries, environment, transport, energy, research issues, enterprise, industry, regional policy, competition, freedom, security,

Table 1
Coastal countries with ICM efforts in 1993 and 2000 [47]

Region	Coastal countries	1993	2000
Africa	37	5	13
Asia	17	13	14
Caribbean	13	5	8
Central America	7	4	7
Europe	33	11	30
Near East	15	6	7
North America	3	3	3
Oceania	17	7	8
South America	11	5	8
Total	154	59	98

⁶ <http://unfccc.int/2860.php> (climate change), <http://www.cbd.int/> (convention on biological diversity), <http://www.huwu.org/events/wssd/> (WSSD).

justice, employment, social affairs, equal opportunities, external relations, health, and consumer protection were examined through a multinational legislative and political approach.

Before this integrated European Maritime Policy process was initiated, policies on maritime transport, energy, industry, environment and so forth had been developed separately. Even when there were links between them, there seemed to be no systematic manner to determine how these policies could be combined to reinforce each other as is recently the case of the Gulf of Mexico [3]. So in line with the Lisbon Strategy⁷, the *Green Paper for a Future European Maritime Policy* was prepared and very recently accepted by the Commission, which renamed it, “An Integrated Maritime Policy for the European Union” [2]. This Green Paper represents not only an effort to examine how Europeans can better manage their coastal waters, but also how they can cooperate with third countries to preserve the oceans and seas for generations to come. Moreover, it was prepared to achieve sustainable development by reconciling the economic, social and environmental dimensions of the exploitation of the seas and oceans and thereby bringing some form of interdependence to these politically divisive issues.

9.2. *A Green Paper for the Union: the birth of a new (Multinational) Integrated Maritime Policy*

The Green Paper arrives in the context of the post UNCLOS/UNCED era. It represents a new maritime strategy reflecting a change in the core objective of marine policies: “from the expansion of jurisdiction (who will own the oceans?) to management (who will manage the oceans?)” [49]. Nevertheless, Europeans are not new to the art of drafting marine policy strategies for conservation and management. The EU Water Framework Directive draft in 2000 and the Marine Environment Strategy of 2005 [53,54], for example, represented important milestones in approaching marine integrated management with a regional perspective.

The main goal of the Green Paper was to ensure that international and domestic rules were implemented by all those states engaged in the conservation and management of European seas. But also, an important added value was the effort in making European citizens appreciate their maritime heritage and value their marine environment as well as all of the marine activities derived from the ecosystem services it provides in terms of ecological and economic well-being [55].

As mentioned in one of the Green Paper studies “many maritime activities are global in nature and need to be subject to multilateral regulation”. One of the unique aspects of the Green Paper experience was its use of a year long consultation process with stakeholders and other relevant key actors from all of the affected nations [55]. This provided the proper context to adopt best practices and learn from obstacles and analyze new challenges posed by the multinational nature of the participants. The European nations have identified from this collaborative experience how much ground needs to be covered and how much new expertise needs to be developed [3]. Moreover, as discussed by the commission, the division of decision making could also limit comprehension of the potential impact of one set of activities upon another, preventing the “parts” from exploring untapped synergies between different maritime sectors [3].

The European Integrated Maritime Policy has introduced a new set of relevant topics that were not originally key issues in parliamentary debates. For example, climate change issues, coastal risk

and adaptation, the maximization of quality of life in ocean regions, knowledge and technology, data bases and knowledge sharing, new rules and global activities and the importance of acknowledging a European Maritime Identity have recently become central aspects of policy outlines. These new topics may not have emerged in the public debate if not for the Green Paper, which provided the documentation, expert advice, and delineation of joint responsibilities that lent legitimacy to the process of developing concrete policy recommendations (Table 2).

Moreover, according to the literature, the whole experience has acquired a symbolic learning process for all those stakeholders related directly and indirectly to the region's oceans. This represents a historical landmark in ocean policy-making processes in the sense that it has brought topics into more serious parliamentary debates aiming to achieve more committed participation from the different countries engaged. The stronger the political participation within nations with shared environmental interests, the better the overall results in terms of conservation and sustainable management of the resources. The recently approved Marine Strategy Directive of the EU, for instance, is another example of the continuous search for collaboration between nations in a long-term effort to improve the economic and environmental health of the EU's ocean and coastal areas by 2020 [56].

The EU is one of the world's leading maritime powers in terms of transportation, coastal tourism, offshore energy production, ship-building technologies, only to mention a few factors. Trends show that very soon the region will become a leader in a number of probable growth areas, such as the building of cruise ships, offshore renewable energy and ports. Certainly, given the social and economic importance of these sectors it is crucial that Europe's competitiveness be maintained in these areas.

9.3. *A Green Paper on the Sustainable Governance of the GoM: the need for an integrated conservation strategy and a political challenge for the region*

Like Europe, the GoM region appears to be facing a very similar fast growth situation as it provides a large and growing share of each nation's seafood, offshore hydrocarbons, ship construction and coastal tourism. The tourism industry in the region has reported over \$40 billion in revenue in the U.S. and represents one of the most important sources of foreign income in Mexico and Cuba. More than 80% of oil production and 90% of natural gas in Mexico comes from the Gulf as does about 30 % of U.S. production. The hydrocarbon industry in the U.S. portion of the GoM has been estimated to produce annual revenue in excess of \$77 billion [57]. A strong case can be made, just as it has in Europe, that the GoM nations need to start thinking about more integrated strategies and policy orientations for the sustainable use of the region's marine resources.

The complexity of new and competing uses of the GoM, coupled with our improved understanding of the interrelatedness of the various natural systems within the larger GoM ecosystem requires new and innovative governance approaches. Cross-jurisdictional, interdisciplinary management goals as well as adaptive, collaborative governance mechanisms need to be developed within each nation and across international boundaries. It is quite evident that the protection of marine ecosystems and fisheries resources as well as the development and conservation of transboundary hydrocarbon resources cannot be tackled by states or nations individually. Instead, strategies need to be developed that enable the sharing of decision-making authority, responsibility and risk among governments and other stakeholders.

To accomplish this, more needs to be done to improve the knowledge base of existing laws and policies within the region and to gain a more integrated understanding of the natural, economic,

⁷ The Lisbon Strategy intends to deal with the low productivity and stagnation of economic growth in the EU, through the formulation of various policy initiatives to be taken by all EU member states. The broader objectives set out by the Lisbon strategy are to be attained by 2010.

Table 2
Overview of recent (strategic) ocean policy initiatives

Country/ region	Ocean policy initiative	Source
United States	• U.S. Ocean Policy Commission	http://www.oceancommission.gov/
	• Pew Ocean Commission	http://www.pewtrusts.org/our_work.aspx?category=130
	• Joint Ocean Commission Initiative	http://www.jointoceancommission.org/
	• Gulf of Mexico States Alliance	http://www.dep.state.fl.us/gulf/
	• Gulf of Mexico States Accord	http://www.gomsa.org/
Mexico	• PANDSOC – <i>Política Ambiental Nacional para el Desarrollo Sustentable de los Océanos y Costas</i> /National Environmental Policy for the Sustainable Development of the Oceans and Coasts	http://www.semarnat.gob.mx/queessearnat/politica_ambiental/ordenamientoecologico/Documents/documentos%20integracion/oceanos_costas_semarnat.pdf
	• <i>Ordenamiento Ecológico Marino y Regional del GdM y Mar Caribe</i> General Agreement for the Marine and Regional Ecological Ordering GoM and the Caribbean	http://www.semarnat.gob.mx/queessearnat/politica_ambiental/ordenamientoecologico/Documents/documentos_golfo_mexico/2sesion_oe/poemr_gmmc_pat.pdf
	• <i>Bitacora Ambiental GdM y Mar Caribe</i> /The Environmental Log for the GoM and the Caribbean	http://www.semarnat.gob.mx/QUEESSEMARNAT/POLITICA_AMBIENTAL/ORDENAMIENTOECOLOGICO/Pages/bitacora_ambiental_golfo_mexico.aspx
	• Transboundary Diagnosis for the Large Marine Ecosystem of the GoM UNEP-UNIDO	http://www.gefonline.org/projectDetails.cfm?projID=1346
Cuba	• <i>Estrategia Ambiental Nacional</i> /National Environmental Strategy (1997) (2007–2010)	http://www.medioambiente.cu/estrategia_ambiental.asp
	• Cuban Environmental legislation	http://www.medioambiente.cu/legislacion.asp
	• Decree-Law 212	http://www.medioambiente.cu/legislacion/decretoley/DL-212.htm
	• Conservation and sustainable use of marine areas	
	• <i>Protección del medio ambiente y el desarrollo sostenible cubano</i> Environmental Protection and Sustainable Development in Cuba	http://www.ama.cu/programas_02.asp
• Grupo Tortuguero	http://www.grupotortuguero.org/content/1/1/1.html	
European Union	• An Integrated Maritime Policy for the European Union	http://ec.europa.eu/maritimeaffairs/
	• Green Paper towards a future maritime policy for the union	http://ec.europa.eu/maritimeaffairs/policy_en.html http://ec.europa.eu/maritimeaffairs/pdf/com_2006_0275_en_part2.pdf
	• Supporting documents	http://ec.europa.eu/maritimeaffairs/suppdoc_en.html
	• EU Sectoral Policies	http://ec.europa.eu/maritimeaffairs/sectoral_en.html

Source (self elaboration).

and cultural environments in the GoM. A first step in this process could be the preparation of what might be called a *Green Paper for the Sustainable Governance of the Gulf of Mexico*. Modeled loosely after the EU Green Paper but customized to the needs and challenges of this geographical region, it would bring representatives from Mexico, Cuba and the U.S. together to compare and contrast each of the nations' current coastal and ocean policy initiatives and develop future steps toward a more integrated governance structure for the GoM.

An Integrated Policy for Sustainable Governance of the Gulf of Mexico requires a political framework that applies an integrated approach at every level, as well as horizontal and cross-cutting policy tools. It will also require a sound financial basis, taking into account the results of preparatory actions as the Europeans have very well understood and undertaken as a joint action plan during the last few years [58].

Some of the most recent coastal and ocean policy initiatives have been listed in Table 2 below, but significant progress in developing future strategic multinational initiatives is unlikely to occur until the following obstacles to collaboration are remedied.

Acknowledging the fact that the three countries are certainly not in the position to share political values as strong as the

multistate model that the EU has developed in the last few decades, some identified areas could be explored to achieve what the EU has promoted in terms of collaborative action. Moreover, the political antagonism that has pervaded relations between the U.S. and Cuba for nearly fifty years clearly has no parallel in the EU. However, despite these obstacles and differences, there are steps that can be taken in the GoM to move the integrative ocean policy process forward.

First, U.S.–Cuban diplomatic and political relations will need to be improved or at least compartmentalized to reflect the benefits of certain types of collaboration. Issues such as conservation of marine species and vulnerable spaces, establishing marine protected areas, managing fisheries, water quality (pollution, sedimentation, floating debris from ships or urban waste, etc.), and offshore energy production can only be effectively dealt with if the two nations are willing to enhance dialogue and cooperation on political, social and environmental matters. It should be recognized that in the context of governing the two nations' shared marine environment, the traditional political paradigm of confrontation must give way to a collaborative vision of mutual self-interest. For example, it is in the interest of both nations to collaborate on oil spill and aquatic habitat protection measures in anticipation of Cuba's plans to

develop offshore hydrocarbons in areas just tens of miles from the Florida coast.

Similarly, Mexico and the U.S. need to collaborate more actively on the development of hydrocarbons and protection of the marine environment in the ultra-deep waters of the maritime boundary region. For example, the U.S. commercial production in the Perdido Foldbelt Region, located just a few miles from the Mexican boundary, is scheduled to begin in 2010. It is essential that the governments of both nations quickly resolve existing political and legal obstacles to cooperative management of these valuable resources. Taking into consideration the transboundary characteristics of many of the hydrocarbons, some form of bi-national cooperation is necessary to effectively manage the shared resources, protect the oceanic environment and comply with evolving standards of international law [40].

Future ocean planning documents such as follow-up efforts to the Mexican General Agreement for the Marine and Regional Ecological Ordinance as well as the U.S.'s An Ocean Blueprint for the 21st Century should provide guidance on how to strengthen collaboration among nations that co-inhabit large marine ecosystems like the GoM Region. As emphasized throughout this study, most marine planning is currently taking place internally within each sovereign nation and little emphasis is being placed on developing national strategies to build agreement for integrated management actions across political boundaries.

Current bi-national institutions or programs (most common within Mexico and the U.S.) whose research and outreach is focused on protecting vulnerable areas of the Gulf of Mexico should be encouraged to spread their scope of influence. These could represent key actors in lobbying and/or legislative processes as well as providing valuable facilitation and convening services to incorporate new stakeholders into policy-making processes. An excellent example of an opportunity of this kind is the so-called "Islands in the Stream Initiative" to create an international network of marine protected areas in the GoM. This U.S. led effort to protect a series of underwater reefs and banks that ring the GoM from Florida through Mexico and Belize offers a wonderful opportunity to establish working bi-national partnerships to protect vitally important transboundary marine habitat [59].

Existing programs that encourage and fund regional governance initiatives such as the U.S. Gulf of Mexico States Alliance should provide additional financial tools to improve bilateral efforts. The Alliance's *Governor's Action Plan for Healthy and Resilient Coasts* covering the period of March 2006–March 2009 does contain action items to create an Ecosystem Learning Center and to develop a satellite detection and Internet-based notification capability for red tide in the Mexican Gulf State of Veracruz. These projects should be commended. Moreover, bilateral efforts should be significantly expanded in the second round of funding for the 2009–2012 timeframe [16].

Finally, additional efforts need to be promoted to break down traditional political and societal value systems that emphasize unilateral national solutions to complex international environmental problems. The urgency and importance of bringing about tri-national discussions and eventually solutions to issues such as the provision of ecosystem services (market and non-market valued), risks and adaptation to climate change in coastal areas, conservation of marine habitat and fisheries, among other topics of mutual concern will grow in coming years. A common understanding needs to emerge among the citizens of Mexico, Cuba and the U.S. that their well-being and the well-being of their children will be improved if they support integrated and comprehensive ocean and coastal management efforts. Because it is only through these cooperative efforts that we will be able to protect species and fragile marine environments, preserve traditional ways of living and assure the long-term sustainable development of the GoM.

Acknowledgements

The authors are particularly grateful to the referees and reviewers of this paper and their valuable comments to encourage improvement of this work. We would also like to thank Mikell Smith at the Harte Research Institute for his help on the editing, proof reading and bibliographical research in this article.

References

- [1] Cicin-Sain B, Vandeweerd V, Bernal PA, Williams LC, Balgos MC. Meeting the commitments on oceans, coasts, and small island developing States made at the 2002 world Summit on sustainable development: how well are we doing? Co-Chairs' report—vol. 1. Available from: <http://www.globaloceans.org/globalconferences/2006/pdf/WSSDReport_100406d.pdf>; 2006.
- [2] Commission of the European Communities (CEC). An integrated maritime policy for the European union; communication from the commission to the European parliament, the council, the European economic and social committee and the committee of the regions; 2007.
- [3] Commission of the European Communities (CEC). Towards a future maritime policy for the union: a European vision for the oceans and seas, report 275 final; 2006.
- [4] U.S. Commission on Ocean Policy. An ocean blueprint for the 21st century final: report of the U.S. commission on ocean policy. Available from: <http://www.oceancommission.gov/documents/full_color_rpt/000_ocean_full_report.pdf>; 2004.
- [5] Our Nation and the sea: a plan for national action; report. In: Commission on marine science E, and resources. Washington: The Stratton Commission; 1969.
- [6] Pew Oceans Commission. America's living oceans: charting a course for sea change. Available from: <http://www.pewtrusts.org/uploadedFiles/wwwpewtrustsorg/Reports/Protecting_ocean_life/env_pew_oceans_final_report.pdf>; 2003.
- [7] Paul LMB. The 2003 pew oceans commission report: law, policy, and governance. *Natural Resources and Environment* 2003;(Summer):10–6.
- [8] Nugent I, Cantral L. Charting a course toward ecosystem-based management in the Gulf of Mexico. *Duke Environmental Law & Policy Forum* 2006;16(Spring):261–92.
- [9] U.S. Congress, Oceans Act of 2000. Pub. L. No. 106–256, 114 Stat. 644; 2000.
- [10] Hershman MJ, Russell CW. Regional ocean governance in the United States: concept and reality. *Duke Environmental Law & Policy Forum* 2006;16(Spring):227–65.
- [11] U.S. Ocean Action Plan: President of the United States; 2004.
- [12] Joint Ocean Commission Initiative. From sea to shining sea: priorities for ocean policy reform. Available from: <http://www.jointoceancommission.org/resource-center/1-Reports/2006-06-13_Sea_to_Shining_Sea_Report_to_Senate.pdf>; 2006.
- [13] Joint Ocean Commission Initiative. U.S. ocean policy report card. Available from: <http://www.jointoceancommission.org/resource-center/2-Report-Cards/2007-01-01_2006_Ocean_Policy_Report_Card.pdf>; 2006.
- [14] Senate Bill 1745, committee on appropriations. Department of Commerce, and Justice, Science, and Related Agencies appropriations bill, 2008; June 29, 2007. p. 110–24.
- [15] Craig RK. Regulation of U.S. marine resources: an overview of the current complexity. *Natural Resources & Environment* 2004;19(1):3–9.
- [16] Gulf of Mexico Alliance. Governors' action plan for healthy and resilient coasts. Available from: <http://www.dep.state.fl.us/gulf/files/files/GulfActionPlan_Final.pdf>; 2006.
- [17] Zarate Lomeli D, Yáñez-Arancibia A, Day JW, Ortiz Pérez M, Domínguez AL, Fuente Codi, et al. Lineamientos para el programa regional de manejo integrado de la zona costera del Golfo de México y Caribe. In: Caso M, Pisanty I, Ezcurra E, editors. *Diagnostico Ambiental del Golfo de Mexico*, vol. II. Mexico DF: INE-SEMARNAT, IE, HRIGMS; 2004. p. 899–936.
- [18] Díaz-de-León A, Alvarez-Torres P, Mendoza-Alfaro R, Fernández-Méndez JJ, Ramírez OM. Hacia un manejo integrado del gran ecosistema marino del Golfo de México. In: Caso M, Pisanty I, Ezcurra E, editors. *Diagnostico Ambiental del Golfo de Mexico*, vol. II. Mexico DF: INE-SEMARNAT, IE, HRIGMS; 2004. p. 985–1006.
- [19] Guevara Sada S. La invención del Golfo de México. In: Caso M, Pisanty I, Ezcurra E, editors. *Diagnostico Ambiental del Golfo de Mexico*, vol. II. Mexico DF: INE-SEMARNAT, IE, HRIGMS; 2004. p. 1082–108.
- [20] Moreno-Casasola P, Ruelas L, Travieso AC, Salinas G, Cruz HH, Amador L, et al. Proyecto plan de manejo integral, la mancha-el llano: un proyecto comunitario de conservación y producción. In: Moreno-Casasola P, editor. *Entorno natural y cultural de la Costa Veracruzana: La Mancha*. Veracruz, México: Instituto de Ecología – U.S. Fish and Wildlife Service; 2004.
- [21] Secretaría de Medio Ambiente y Recursos Naturales (SEMARNAT). Política ambiental nacional para el desarrollo sustentable de océanos y costas: estrategias y alcances; 2006.
- [22] Zarate Lomeli D, Saavedra Vazquez T, Rojas Galaviz JL, Yanez-Arancibia A, Arriaga ER. Terms of reference towards an integrated management policy in the coastal zone of the Gulf of Mexico and the Caribbean. *Ocean & Coastal Management* 1999;42(2–4):345–68.
- [23] United Nations Convention on the Law of the Sea; 1982.
- [24] Diez J. Political change and environmental policymaking in Mexico. *Routledge*; 2006. 302 pp.

- [25] Ley General del equilibrio ecológico y la protección al ambiente: Comisión Nacional de Áreas Naturales protegidas (CONANP). Available from: <<http://www.conanp.gob.mx/anp/legal/LGEEPA.pdf>>; 1998.
- [26] Secretaria de Medio Ambiente y Recursos Naturales (SEMARNAT). Ordenamiento ecológico marino y regional del Golfo de México y Mar Caribe, segunda reunión ordinaria del órgano ejecutivo. Available from: <http://www.semarnat.gob.mx/queessearnat/politica_ambiental/ordenamientoecologico/Pages/bitacora_ambiental_golfo_mexico.aspx>; 2007.
- [27] Secretaria de Medio Ambiente y Recursos Naturales (SEMARNAT). Integración regional, descripción de programas. Available from: <http://www.semarnat.gob.mx/queessearnat/politica_ambiental/Pages/integracionregional.aspx>; 2007.
- [28] Lindeman KC, Tripp JTB, Whittle DJ, Moulart-Quiros A, Stewart E. Sustainable coastal tourism in Cuba: roles of environmental assessments, certification programs and protection fees. *Tulane Environmental Law Journal* 2003;16(Special issue):591–618.
- [29] Whittle D, Rey Santos O. Protecting Cuba's environment: efforts to design and implement effective environmental laws and policies in Cuba. In: Pérez Jr L, Stoner KL, Perez GMG, editors. *Cuban studies*, vol. 37. Pittsburgh, Pennsylvania: University of Pittsburgh Press; 2006. p. 90–103.
- [30] El Portal del medio ambiente en Cuba. Available from: <<http://www.medioambiente.cu/>>.
- [31] Environmental Defense. Preserving unique ecosystems in Cuba. Available from: <<http://www.environmentaldefense.org/article.cfm?ContentID=1996>>; 2002.
- [32] Miller MM, Henthorne TL, George BP. The competitiveness of the Cuban tourism industry in the twenty-first century: a strategic re-evaluation. *Journal of Travel Research* 2008;46(February):268–78.
- [33] Piñon JR. Cuba's energy future focal point. Available from: <<http://www.focal.ca/publications/focalpoint/fp0407/%3Fflang%3De&article%3Darticle3>>; 2007.
- [34] Dean C. Conserving Cuba, after the embargo. *The New York Times*. New York. Available from: <<http://www.nytimes.com/2007/12/25/science/25cuba.html>> 2007.
- [35] Smith W, Schuett J. To protect the Gulf of Mexico: U.S. – Cuba cooperation on marine conservation center for international policy conference report. Available from: <http://ciponline.org/cuba/ipr/Marine_1207.pdf>; 2007.
- [36] Estrategia Ambiental Nacional 2007–2010. Anexo único de la resolución no. 40/2007. Cuban Ministry of Science Technology and Environment (CITMA); 2007.
- [37] Conference abstracts and program. MARCUBA, VII Conference on Marine Sciences. Havana, Cuba; 2006.
- [38] Prescott JRV. *The maritime political boundaries of the world*. Methuen; 1985. 377 pp.
- [39] McDorman TL. *International ocean law: materials and commentaries*. Carolina Academic Press; 2005. 430 pp.
- [40] McLaughlin RJ. Hydrocarbon development in the ultra-deepwater boundary region of the Gulf of Mexico: time to reexamine a comprehensive U.S.–Mexico cooperation agreement. *Ocean Development & International Law* 2008;39(1): 1–31.
- [41] For a summary of the meeting and work of NANPAN. Available from: <http://mpa.gov/helpful_resources/international.html>.
- [42] NPR. Bush eyes unprecedented conservation program. Available from: <<http://www.npr.org/templates/story/story.php%3FstoryId%3D90766237&ps%3Dbb1>>; 2008.
- [43] Smith WS. Wanted: a logical Cuba policy: center for international policy. Available from: <<http://www.ciponline.org/cuba/ipr/WantedLogicalCubaPolicy.htm>>; 1997.
- [44] Experts offer insights on the imperatives for a new Cuba policy: center for international policy. Available from: <<http://www.ciponline.org/cuba/pressrelease1016.htm>>; 2007.
- [45] Tunnell JW, Felder D, Earle S. The Gulf of Mexico: past, present and future: collaboration between United States, Mexico and Cuba. In: Caso M, Pisanty I, Ezcurrea E, editors. *Diagnostico Ambiental del Golfo de Mexico*, vol. I. Mexico DF: INE-SEMARNAT, IE, HRIGMS; 2004. p. 361–72.
- [46] Our mission: Harte research institute for Gulf of Mexico studies. Available from: <<http://www.harteresearchinstitute.org/>>.
- [47] Cicin-Sain B, Belfiore S. Linking marine protected areas to integrated coastal and ocean management: A review of theory and practice. *Ocean & Coastal Management* 2005;48(11–12):847–68.
- [48] Costanza R, Andrade F, Antunes P, Mvd Belt, Boersma D, Boeash DF, et al. Principles for sustainable governance of the oceans. *Science* 1998;281:198–9.
- [49] Suarez de Vivero JL. The European vision for oceans and seas—social and political dimensions of the green paper on maritime policy for the EU. *Marine Policy* 2007;31(4):409–14.
- [50] Duda AM. Integrated coastal management in North America: an introduction to challenges facing our planet's ocean-land interface. *Ocean and Coastal Law Journal* 2004;9:167–75.
- [51] Cajiao MV, Flores M, González A, Hernández P, Martans C, Porras N, et al. *Manual de legislación ambiental para los países del corredor marino de conservación del Pacífico Este tropical*. Costa Rica: Mar viva; 2006.
- [52] Borg J. Towards a European maritime policy: presentation of the European Commission proposals. In: *Conference of peripheral maritime regions of Europe*. Florence, Italy; 2007.
- [53] Keeping Europe's seas and oceans safe, clean and healthy: commission of the European communities (CEC); 2005.
- [54] Water Information System for Europe (WISE). The EU water framework directive – integrated river basin management for Europe. Available from: <http://ec.europa.eu/environment/water/water-framework/index_en.html>; 2000.
- [55] The Nippon Foundation (TNF). *A green paper on a future European maritime policy*, vol. II. Summary and case studies; 2005.
- [56] Directive of the European Parliament and of the council establishing a framework for community action in the field of marine environmental policy (Marine Strategy Directive): Commission of the European Communities (CEC). Available from: <<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do%3Furi%3DCOM:2005:0505:FIN:EN:PDF>>; 2005.
- [57] Yoskowitz DW, Adams CM, Lee J, Hernandez E. *Economics, business, and industry of the Gulf of Mexico think deeper*. State of the Gulf of Mexico, Summit 2006. Corpus Christi, Texas: Harte Research Institute; 2006.
- [58] Communication from the commission to the European parliament, the council, the European economic and social committee and the committee of the regions. Conclusions from the consultation on a European maritime policy: Commission of the European Communities (CEC); 2007.
- [59] Leading the world: creating an international network of marine protected areas in the Gulf of Mexico. Available from: <http://www.thefra.org/GoMex_discussion_Nov_21_07.pdf>.