Coastal and Marine Resources Management in Latin America and the Caribbean

Michele H. Lemay

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This paper presents the background research that supported the development of the Bank's formal strategy on this topic. The strategy for coastal and marine resources management (GN-1906-2) was favorably considered by the Bank's Board of Directors on June 17, 1998 and is being published concurrently with this report (SDS publication No. ENV-129). This document was prepared by Michele H. Lemay, Environment Division, Sustainable Development Department. The author wishes to acknowledge the guidance of W. Arensberg and the contributions of W. Vaughan (SDS/ENV); Francis Christy, IMARIBA; Max Aguero, Inter-American Center for Sustainable Ecosystems Development (ICSED), Joaquin Rodriguez and Nestor Windevoxhel, IUCN Regional Office for Meso America; and the Coastal Resources Center of the University of Rhode Island. The comments received from colleagues throughout the Region and within the Bank, as well as the valuable observations received from the Policy Committee of the Board of Directors of the Bank are also gratefully acknowledged. The research assistance of D. Rodriguez and the collaboration of Maria-Jose Ribeiro and Adriana Garner in preparing the final document are also acknowledged.

CONTENTS

ABBREVIATIONS

AMLC	Association of Marine Laboratories of the Caribbean
CARICOMP	Caribbean Coastal Marine Productivity
CEPAL	Comisión Económica para América Latina y El Caribe
CESI	Committee for Environmental and Social Impact
CSD	Commission on Sustainable Development
EEZ	Exclusive Economic Zone
ENSO	El Niño-Southern Oscillation
FAO	Food and Agriculture Organization of the United Nations
GDP	Gross Domestic Product
GEF	Global Environment Facility
GIS	Geographic Information System
GNP	Gross Net Product
GRT	Gross Registered Tonnage
ICM	Integrated Coastal Management
IDB	Inter-American Development Bank
IOCARIBE	Intergovernmental Oceanographic Commission's Regional Commission for the Caribbean and Adjacent Areas
MIF	Multilateral Investment Fund
MSY	Maximum Sustainable Yield
NGOs	Non-Governmental Organizations
NOAA	National Oceanic and Atmospheric Administration
OECD	Organization for Economic Cooperation and Development
OEO	Operations Evaluation Office
OLDEPESCA	Organización Latinoamericana de Desarrollo Pesquero
SEA	Strategic Environmental Assessments
UNCED	United Nations Conference on Environment and Development
UNCLOS	United Nations Convention on Law of the Sea
UNCTAD	United Nations Conference on Trade and Development
USAID	United States Agency for International Development
WTTC	World Travel and Tourism Council
ZMT	Terrestrial-Maritime Zone (Mexico)

I. INTRODUCTION

1.1 Latin America and the Caribbean are endowed with a unique and valuable maritime heritage. Several of the world's largest and most productive estuaries occur in the Region, such as those found at the mouth of the Amazon and the Rio de la Plata in the Atlantic or the Gulf of Guayaquil and the Gulf of Fonseca in the Pacific. The reef system lying off of Belize is the second largest barrier reef in the world. The waters off Peru and Chile support one of the top five commercial fisheries and, until recently, the world's fastest growing fishery thrived off the coasts of Argentina and Uruguay. The Region's industrial ports are the second leading destination for containerized U.S. exports and the Panama canal is a major focus of seaborne trade, providing a vital link between Pacific Rim countries, the western hemisphere and Europe.

1.2 Many of these assets have been undervalued in the past. Increasingly however, the contribution of coastal and marine areas to sustainable development is gaining recognition among coastal states and the public at large. Combined with this increasing appreciation is an emerging awareness of the need to manage coastal and marine resources while optimizing the allocation of uses within the coastal zone. This regional interest is expected to increase over the next decades — spurred by new trade opportunities, changing markets, heightened awareness of coastal hazards and fisheries conflicts, and the entry into effect of international agreements such as the United Nations Convention on Law of the Sea (UNCLOS).

1.3 This document presents a coastal and marine resources management strategy for the Inter-American Development Bank (IDB). The strategy provides new directions for Bank activities which significantly affect sustainable development of coastal and marine areas in Latin America and the Caribbean. Calling for a renewed, more integrated approach, the strategy is intended to bring the Bank's interventions in sectors such as marine fisheries, tourism, maritime transport and pollution control in line with the fundamental objectives of the 8th Capital Replenishment. Looking beyond these sectoral considerations, the strategy highlights new opportunities for lending and non-lending support in line with the distinct character of coastal and marine areas, their evolving regulatory framework, and the responsibility shared by governments and coastal communities in the Region to manage them. The principles, elements of innovation and actions which are at the core of the strategy are designed to fill a void in the Bank's current policies in natural resources management.

1.4 Integrated coastal management is presented here as a broad, multi-purpose endeavor aimed at improving the quality of life of communities dependent on coastal resources and helping coastal states attain sustainable development from the headwaters of coastal watersheds to the outer limits of their exclusive economic zone (EEZ). Coastal management is a geographically-specific response which focuses on issues typical of coastal areas — for example, depleted fisheries stocks, declining coastal water quality and conflicts between coastal uses. It combines participatory processes and techniques such as zoning, access restrictions, habitat management with monitoring and enforcement to achieve a balance between coastal uses based on a set of widely endorsed objectives for improving living conditions, safeguarding property and protecting coastal ecosystems.

1.5 One of the strategy's objectives is to assist the Region in establishing programs for the integrated management of coastal and marine areas tailored to social and economic priorities of coastal states. In doing so, the intent is to promote regional and national leadership in coastal management, create opportunities for innovation and adaptive learning in problem-solving, link coastal management to other aspects of sustainable development such as water resources management, and foster genuine commit-

ment towards understanding and managing coastal and marine areas.

1.6 The Bank initiated several studies in 1995 and 1996 to help orient its future activities in the coastal zone, including:

- Sub-regional assessments of emerging policy reforms for coastal management;
- Sectoral reviews (in marine fisheries, tourism and maritime transport for example); and
- Lessons learned from coastal management projects.

1.7 The document begins with an overview of the Region's coastal and marine resources, conditions, and trends in use (Section II). This is followed by a review of the main issues and underlying forces of coastal transformation in Latin America and the Caribbean (Section III). Globally accepted principles for coastal management and emerging policy reforms in the Region are introduced along with the shortcomings of traditional approaches. Section IV examines the Bank's own experience in financing coastal infrastructure, marine fisheries and coastal management operations. The core of the strategy is presented in Section V where actions are recommended in line with the fundamental goals of the 8th Capital Replenishment. Section VI concludes with the instruments, resource requirements and constraints for applying the strategy in Bank activities.

II. THE REGION'S COASTAL AND MARINE ENVIRONMENT

2.1 Scope

2.1 The boundaries of coastal regions encompass the coastline itself, namely the physical transition between land and sea, the adjacent terrestrial systems that affect the sea, and marine ecosystems affected by their proximity to land (see Figure 1).

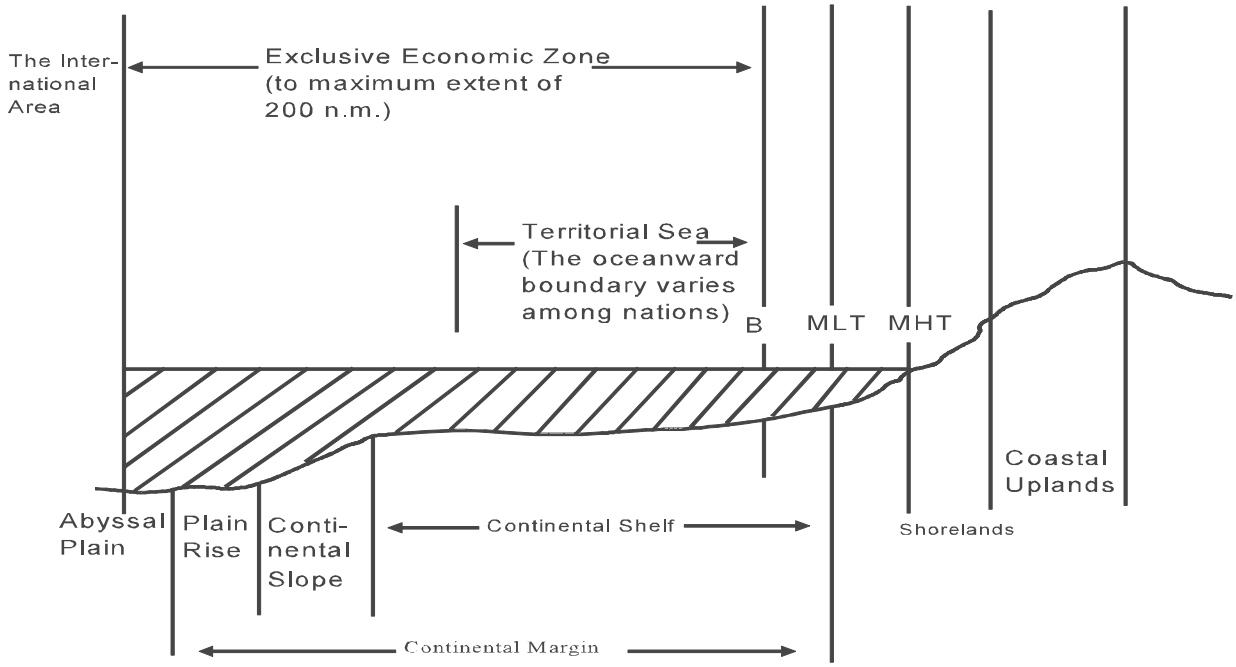

Figure 1: Geographic Extent of the Coastal Zone
B = Baseline; MLT = Mean Low Tide; MHT = Mean High Tide

2.2 This broad definition implies boundaries that (a) include those areas and activities within watersheds that significantly affect the coast, and (b) extend seaward to the edge of the continental shelf or the Exclusive Economic Zone (EEZ) (GESAMP, 1997; Clark, 1996). As such, coastal areas encompass both terrestrial and marine resources as well as ecosystems lying at the land-sea interface such as river deltas, wetlands, beaches and dunes, lagoons, estuaries, coral reefs and offshore embankments. For the purposes of the Bank strategy, "coastal zone" and "coastal and marine areas" are used interchangeably to refer to both terrestrial and marine components.

2.3 Attempts to characterize coastal regions commonly define the terrestrial component as a corridor of land extending inland an arbitrary distance from the shoreline, or within coastal administrative units (e.g. municipalities, provinces, states). Chapter 17 of Agenda 21 of the United Nations Conference on Environment and Development (UNCED, 1992) refers to a 60 km wide terrestrial strip. So defined, this coastal strip encompasses about 15 percent of the total land area of Latin America and the Caribbean.

2.4 Several countries have enacted legislation which sets aside a narrow strip (usually between 20 to 200m) landward of the shoreline (or mean high tide) as public or state jurisdiction. For example, Mexico

has a terrestrial-maritime zone (ZMT) of 20m. Uruguay has one of the broadest legally-defined coastal zone in the region at 250m (see table 1). In practice however, the boundaries of existing coastal management programs tend to be defined by the issues being addressed and therefore, change as programs evolve.

Countries	Distance inland from shoreline
Ecuador	8 m and mangrove greenbelt
Mexico	20m
Brazil	33m
Colombia	50m
Costa Rica (public zone)	50m
Venezuela	50m
Chile	80m
France	100m
Spain	100 to 200m
Costa Rica (restricted zone)	50 to 200m
Uruguay	250m
Indonesia (mangrove greenbelt)	400m

Table 1: Legal Definitions of the coastal zone in Latin America, the Caribbean and selected other countries

2.5 The delimitation of maritime boundaries is an important element of State sovereignty. During the last 20 years numerous agreements have been adopted and at least seven maritime boundary delimitation issues await resolution in the Region (UN Office for Ocean Affairs and the Law of the Sea, 1995). The 1982 United Nations Convention on the Law of the Sea (UNCLOS), which entered into force in 1994, exerts an important influence on the development of national policy with respect to law of the sea matters. A growing number of States have adopted legislation dealing with such matters as the determination of baselines, the definition of the continental shelf and the delimitation of maritime boundaries between States with opposite or adjacent coasts.

2.6 Regardless of which definition is used, the Region's coastal zone represents a vast amount of territory. In total, the coastal zone stretches for 64,000 km and encompasses 16 million km^2 of maritime territory. For many countries, such as the islands nations of the Caribbean, Panama, Costa Rica and others, this territory represents more than 50 percent of the total area under national jurisdiction. Given this scope and heightened international recognition of maritime jurisdictions, coastal states now have expanded responsibilities for sustainable development.

2.2 Ecological Setting and Resources

2.7 Oceans are often mistaken as homogeneous water masses with few distinguishing features other than water temperature and depth. In fact, the ocean masses that surround Latin America and the Caribbean add significantly to the Region's diversity and productivity. Features such as currents, the extent of the shelf, dynamics of the shore, banks, reefs and estuaries provide the backdrop for economic development along the coast. For the purposes of this strategy, it is useful to divide the Region into the following four marine and coastal regions, each with its distinct features (see Figure 2).

South Western Atlantic

2.8 This region includes marine areas under the jurisdiction of Argentina, Brazil and Uruguay with a transition zone extending along Suriname and Guyana into the Caribbean. In the south, the region is characterized by an extensive continental shelf off the coast of Argentina and Uruguay, a cold current flowing from the south, and strong tides such as those recorded along the coast of Patagonia. At the Rio de la Plata, this cold current meets the warmer Brazil current that flows in a southwesterly direction. The width of the continental shelf tends to vary along the

Brazilian coast, widening again in the extreme north where the mouth of the Amazon River forms an estuary stretching for about 1500 km inland. The warm Guiana Current then flows along the north coast of Brazil carrying large volumes of sediments along the coasts of Suriname and Guyana.

Wider Caribbean

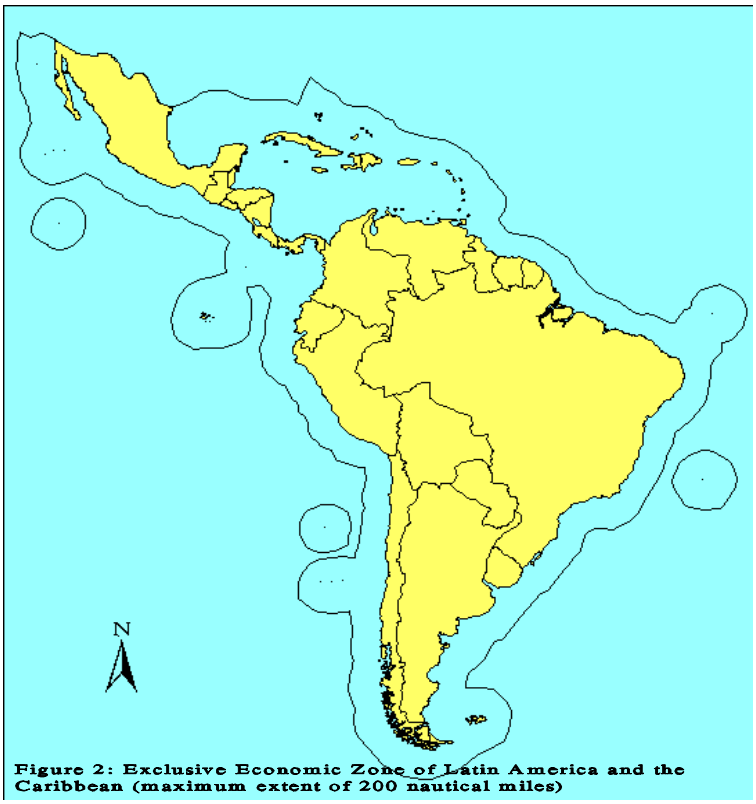

Figure 2: Exclusive Economic Zone of Latin America and the Caribbean (maximum extent of 200 nautical miles)

2.9 This region encompasses the coastal and marine areas of the Caribbean Sea, the Gulf of Mexico and the Caribbean coasts of Central and South America. This area is fed by the Northern Equatorial Current which flows northward, looping into the Gulf of Mexico before joining the Gulf Stream. The continental shelf in the Wider Caribbean tends to be narrow except in areas such as the Campeche Bank, and the shelf off the coasts of Belize, Nicaragua and the Bahamas. Most island and mainland coastlines drop to depths of 2,000 m within a few kilometers of shore. These are typical tropical waters with temperatures averaging 27EC and seasonal fluctuations not exceeding 3EC, ideal conditions for the formation of coral reefs, mangroves and seagrass beds found in nearshore waters where productivity is highest. About 14 percent of the world's coral reefs are found in the Wider Caribbean, with major barrier reefs and atolls stretching from the Yucatan coast south along Belize, Honduras and Nicaragua and fringing reefs scattered throughout the islands.

South Eastern Pacific

2.10 This region stretches along the west coasts of Central and South America from the Mexico-Guatemala border to southern Chile, with the Galapagos and Cocos Islands and Juan Fernandez extending well into the Pacific. Two important features characterize the southern reaches of this region: the cold, nutrient-rich currents which support the highly productive fisheries of Chile and Peru; and the Chilean oceanic trench which delimits a narrow shelf extending between 20 to 40 km from shore dropping steeply to over 6000 m. The cold northern flowing currents collide with warmer waters off of Ecuador where the shelf widens considerably. Strong ocean up wellings along the Galapagos account for unusually high marine productivity which, in turn, supports concentrations of marine mammals and seabirds. The Gulf of Guayaquil dominates the coast as the largest estuary of the tropical eastern Pacific. From that point and along southern Colombia, the coast tends to be low-lying with many estuaries and mangroves. The Pacific coast of Central America is characterized by numerous peninsulas, bays and gulfs with well developed coastal barriers and lagoons. The shelf tends to be narrow except in the Gulf of Panama. The entire region is periodically affected by events referred to as El Niño or ENSO (El Niño-Southern Oscillation), a large-scale change in ocean-atmosphere interactions where sea water temperatures rise by 2-3EC over a range of latitudes in the Eastern Pacific, primary productivity declines near the equator and coastal circulation patterns change. These events have had dramatic effects on the pelagic fisheries of Chile, Peru and Ecuador as well as

contributed to episodes of coral bleaching and various weather anomalies throughout the region.

Central Pacific

2.11 This region encompasses the Pacific coast of Mexico from its border with Guatemala north to Baja California. This is a warm temperate marine region fed by an extension of the Equatorial Counter Current which flows northward along the coast of Central America. The width of the continental shelf is seldom more than 75 km. The Gulf of California, which functions as a semi-enclosed marine basin covering 181,000 km^2 and Baja Peninsula are two predominant coastal features. This is a region recognized for its high marine biodiversity associated with lagoons, coral reefs, mangroves and a network of estuaries which concentrate productivity along the coastal zone.

2.12 These four marine regions (which can be further broken down into sub-regions) regroup the countries of Latin America and the Caribbean into geographic units linked by ocean currents, sediment transport and other chemical cycles. Understanding these geographic units and their functioning is a first step towards a more sustainable approach to coastal development.

2.3 Historical Perspective

2.13 Ocean uses and maritime access have been at the heart of this hemisphere's economic and political development, from the colonial era and the early scientific expeditions to today's expanding seaborne trade and offshore mineral production. The last century has witnessed an important transition from the concept of freedom of access associated with the oceans' abundance to the new rules of the Law of the Sea which lay the foundation for "managed oceans" at both the national and international levels (Pontecorvo, 1986).

2.14 Latin American countries contributed significantly to this transition, most notably in 1947 when Chile made a claim of jurisdiction over a maritime area extending 200 nautical miles from its coast. This was followed closely by similar claims made by Peru and Ecuador. These developments led to the **Santiago Declaration on the Maritime Zone** in 1952 which was the first Latin American multilateral instrument to endorse and spell out the claims already made by Chile, Ecuador and Peru to rights over a 200-mile maritime zone. The Permanent South Pacific Commission was also created at that time to help meet the objectives of the Santiago Declaration which, in many ways, heralded the basic themes for the United Nations Conferences on Law of the Sea, starting in 1958 and culminating with UNCLOS which was opened for signature on December 10, 1982 at Montego Bay, Jamaica (Mawdsley, 1986).

2.15 Parallel with this transition, Latin American and Caribbean governments have faced increasing challenges within national and international seas, ranging from collapsing fisheries in the Pacific, maritime disputes in the southwest Atlantic to shipping casualties, spills and inter-island fisheries disputes in the Wider Caribbean. These events led to the recognition that oceans are an integral part of sustainable development at UNCED in 1992 and that the intensification of ocean uses in the next decades will dictate an adjustment in public sector roles. Latin American and Caribbean countries have since taken steps in the last decade to put in place sub-regional mechanisms and agreements to manage ocean systems that are open and often shared among several jurisdictions.

2.16 During the 1960's and 1970's, the Bank played a pioneering role in financing fisheries development and infrastructure which were to have an impact on the economies of Chile, Peru and Mexico for example. In addition, the Bank financed the Region's first international tourism resorts along the coasts of Mexico and the Dominican Republic and much of the basic sanitation infrastructure in coastal cities such as Rio de Janeiro and Montevideo, thus bringing about a profound change in the coastal landscape. More recently, the Bank has helped national and local governments prevent coastal erosion (in Barbados

and Guyana), establish marine protected areas (in Honduras and Brazil), restore marine water quality and mangroves (in Trinidad and Tobago and Ecuador). Given this experience and recent events, there are now timely opportunities for the IDB to be integral part of this region-wide transition towards managed coasts and oceans.

2.4 Economic and Social Importance

2.17 The region's coastal zone and resources represent strategic assets for the Bank's borrowing member countries. Many countries are now seeking private investments in coastal tourism, mariculture and maritime transport, viewing them as offering promising opportunities for the diversification and integration of their economies. Marine fisheries exports continue to be a major contributor of foreign exchange. Coastal communities in both rural and urban settings are rapidly expanding in response to growth in these sectors as well as urbanization and the intensification of transportation networks along coastal corridors. The economic importance of the coast based on demographics and resource-dependent sectors is briefly reviewed below.

Demographics

2.18 Nearly 75 percent of the region's inhabitants now live in cities, and 60 of the largest 77 cities are coastal. Many of these cities are growing at rates faster than the national average. Consequently, as Latin America becomes more urban, it is also becoming much more coastal (Hinrichsen, 1997). Overall, approximately 60 percent of region's population of 475 million people live in coastal states/provinces. The concentration of people in coastal areas is accompanied by a similarly disproportionate share of the region's infrastructure and economic activity, some of which is coastal dependent and requires a site on, or close to, the waterfront.

2.19 Many coastal areas in Latin America and the Caribbean have a unique cultural and social profile resulting from historical settlement patterns that distinguish them from inland areas. For instance, the Atlantic coast of Nicaragua, Honduras, Costa Rica and Panama were initially developed by groups of African descent that have a long-standing tradition of artisanal fisheries and trade with other parts of the Caribbean (Cowater International Inc., 1996). Many indigenous communities such as the Garifuna in Central America and the Kuna in Panama have traditionally depended on coastal resources for livelihood and cultural integrity (see Box).

Coastal Indigenous Groups

- Garifuna (Caribbean)
- Caribs (Caribbean)
- Miskitos (Honduras and Nicaragua)
- Pesch (Honduras)
- Rama (Nicaragua)
- Guaymi-Ngobe-Buglere (Panama)
- Kuna (Panama)
- Pipiles (El Salvador)
- Emebra Wounaan (Panama)
- Wayuu (Venezuela)
- Guajiro (Colombia)
- Gallibi (Brazil)
- Rapanui (Chile)
- Totonacos (Mexico)

Fisheries

2.20 One of the main characteristics of the Region's fisheries sector is its heterogeneity in scale of operation, as well as in technology, distribution,

target species and value. In most countries, the sector is structured around artisanal or small-scale operations which contribute to the local food supply and income of rural coastal communities and the more developed industrial sector aimed primarily at export markets. Most fisheries in the Region fall within one of the following basic situations: (1) fisheries for highly migratory species, particularly tunas; (2) fisheries for shoaling pelagic species (species that feed on the surface and that are found in large schools such as anchovy and sardine); (3) fisheries for demersal stocks (those feeding on the sea bottom such as hake) found on the extended continental shelf; and (4) the inshore, coastal fisheries including reef fisheries (Christy, 1996).

2.21 Each fishery faces distinct problems in terms of sustainability and each offers certain opportunities for future development. Some problems, such as the condition of open access and the need for improved management, are common to all fisheries. For example, **highly migratory species** offer opportunities for development but require attention in the international arena in terms of both markets and the need for multilateral and international agreements. The **shoaling pelagics** face a different set of problems in the market place due to the high sensitivity to prices of substitute products, such as other forms of

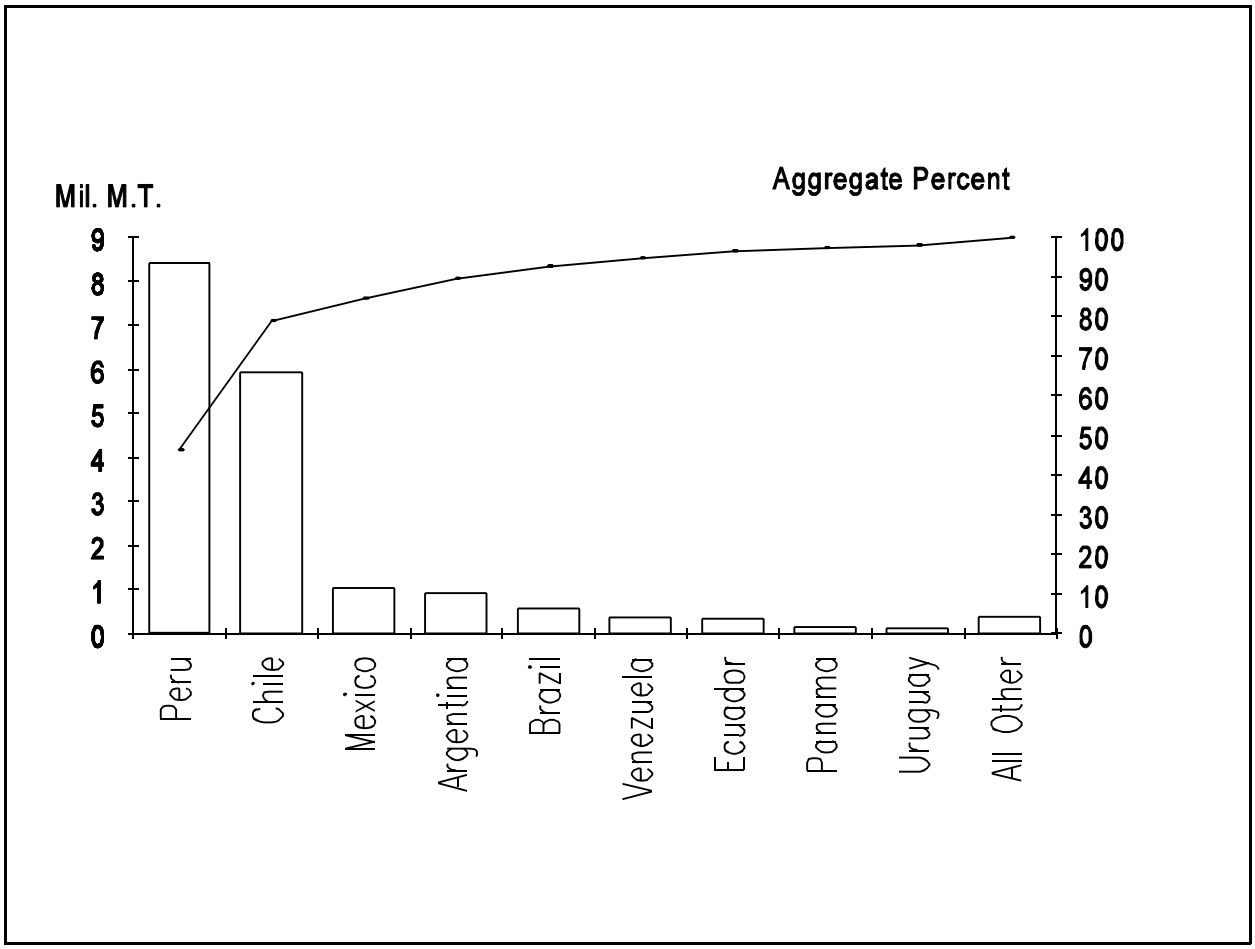

Figure 3: Catch by states in 1993

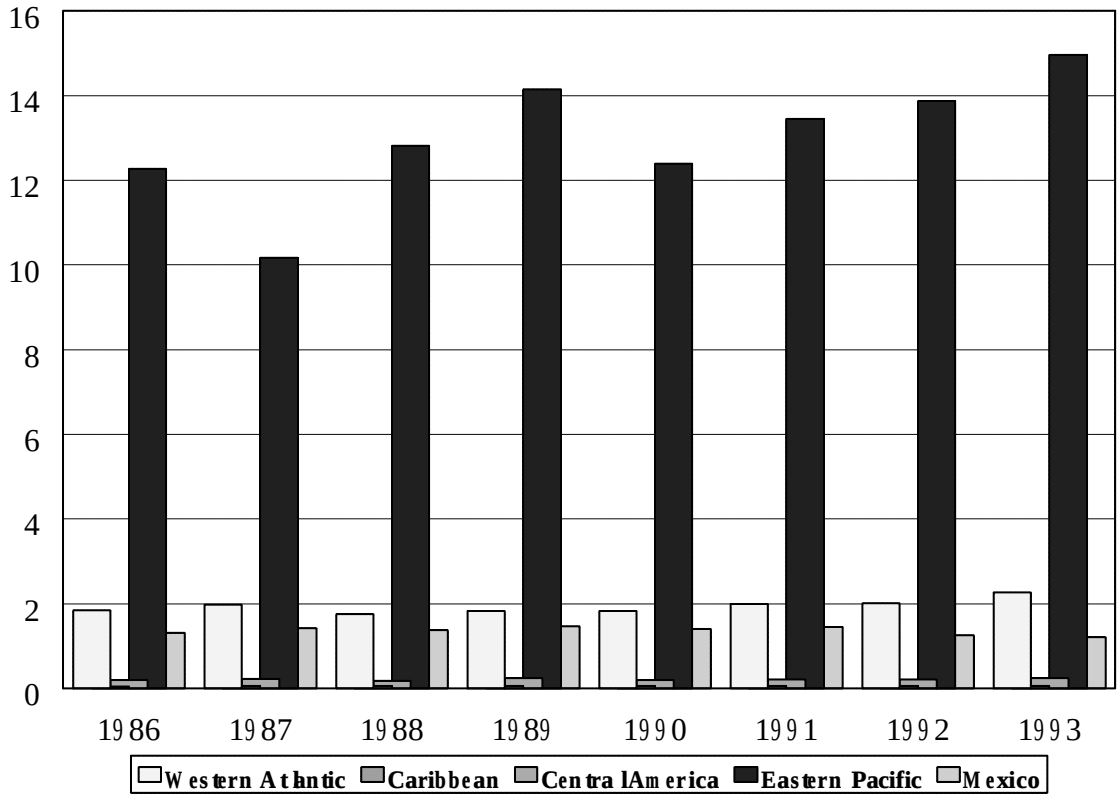

Figure 4: Total fish production for Latin America and the Caribbean 1986-1993, in million metric tons

Source: Christy, 1996.

feed for poultry and aquaculture production. In addition, these fisheries experience severe fluctuations in biomass resulting from changes in natural conditions.

2.22 Unlike the other fisheries which tend to be of interest to only a few states, **small-scale inshore fisheries** are of importance for all states of the region. These fisheries are important for the Bank's attention because of their contribution to the food supply in rural areas, their social values and their vulnerability to environmental degradation in coastal areas.

2.23 In terms of volume of catch, the marine fisheries of the Region are dominated by the catches of Peru and Chile (see Figure 3). Together, these two states took over 14 million tons in 1993 — or almost 80% of the total catch of Latin America and the Caribbean. The total regional catch for the same period was about 20 million tons, contributing approximately 20 percent of the world's total catch (see Figure 4).

2.24 The South Eastern Pacific led both from a standpoint of volume and value of production, followed by the South Western Atlantic and the Wider Caribbean. Virtually all of the catch by Peru and Chile is for species used for fishmeal and has a low unit value. Thus the total gross revenue of production of these two countries was about $1.4 billion in 1993.

2.25 Of the 4 million tons taken by all other states in the Region in 1993, about 1 million was of shoaling pelagics, producing a gross revenue of about $100 million. The balance of the catch (3 million tons) was for species which are roughly valued at $1000

per ton, with a total value of $3 billion. Thus total regional gross revenue from marine fisheries in 1993 was on the order of $4.5 billion, of which Chile and Peru accounted for 30%. In 1970, Peru led the world in catch, producing over 12 million tons. The fishery collapsed in the following years and Peru's total catch fell to less than 2 million tons in 1983. It has subsequently increased, reaching more than 8 million tons in 1993. Chile has experienced a steady and large increase over the past two decades, growing from about one million tons in 1970-72 to 3 million tons in 1980-82 and 6 million tons in 1991-93.

2.26 Among the other important fishing states, Argentina, Venezuela and Colombia experienced significant growth during the 1980's — the first two having increased by about 90%, and the last by 200%. Some of the Caribbean island states and Panama also showed large growth in the last decade. Most other states experienced greater growth during the decade of the 1970's than during the 1980's. In the 1970's, 28 states showed marine catch increases greater than 25% whereas in the 1980's, there were only 18 states in this category. Also, in the first decade the number of states showing decreased total catch was 7 as compared to 17 in the last decade.

2.27 Although total catch for the states of the Region (excluding Chile and Peru) did not increase significantly during the past decade, there was a shift from the low valued shoaling pelagic species to the higher valued species used for human consumption. The low valued shoaling pelagics dropped from 47% of total production to 25%. These species, like Peruvian anchoveta and South American pilchard, are subject to wide fluctuations in abundance related to the El Niño phenomenon. The production of groundfish (mostly Argentine hake) increased significantly in the 1970's and continued to increase in the next decade but by a lesser amount. In the case of the tunas, shrimps and squid, the gains in the 1980's were greater than the gains in the previous decade.

2.28 The growth in volume of catch during the 1970's was due mostly to the increase in the export markets for fish meal. The main markets for regional fishery products are Japan and the United States followed by European countries (Germany). Chile and Peru concentrate most of their exports of fresh and frozen fish and meals to these markets. Central American countries and Ecuador target U.S. markets, mainly lobster and shrimp (NORAD-PRADEPESCA, 1993). Caribbean fisheries tend to be radically different in that per capita consumption is high. Local fisheries are almost entirely artisanal in nature, with part of the catch dedicated to the tourism market. Much of the catch goes unreported.

2.29 FAO reported a total regional fishing fleet of over 9,000 vessels in 1989 (FAO, 1997). According to the most recent analysis, the Latin American fleet has been increasing at an annual rate of 5 percent over the last decade. Even allowing for the open ship registers of Panama and Honduras, there has been a significant increase in the number of large vessels from an estimated total of 2,238 vessels with a tonnage exceeding 100 gross registered tonnage (GRT) in 1985 compared to 3,156 in 1995. This expansion of the industrial fishing fleet has meant that excess fishing capacity is now an issue (FAO, 1997).

2.30 Fisheries provide employment to approximately one million fishermen, of which about 90 percent are in the small scale sector (Aguero, 1996). This is a conservative estimate since it may not include women and youths helping in the sorting and marketing of fisheries products.

2.31 The economic importance of fisheries varies considerably from one country to another. Some countries like Peru, Chile, Argentina, Uruguay, Ecuador, Mexico and Panama among others, obtain considerable economic benefits in the form of foreign exchange, extracting and exporting fishery products. Others, like most countries of Central America, derive important social and cultural benefits from fishery activities, as a source of food and employment and a way of life to many coastal communities. Furthermore, fishery resources in general, but more so in tropical waters, where diversity is greater, are important components of coastal marine ecosystems

and biodiversity, and therefore, their value transcends political boundaries.

Mariculture

2.32 The importance of mariculture in Latin America is relatively small when compared to other tropical regions such as southeast Asia. Its importance is growing nonetheless in countries such as Ecuador where a significant shrimp mariculture industry has developed mostly in mangrove converted areas and salt ponds. Latin America produced 21.6% of world farm shrimp production in 1995 (FAO, 1996). In Ecuador, shrimp mariculture is the third-leading export after oil and bananas. In 1994, the industry earned US$539 million and employed 260,000 people at roughly 525 square miles of working ponds and more than 400 hatcheries, processing plants, and other facilities (Tobey et al., 1996). More recently, important breakthroughs have taken place in mariculture in Chile (mostly salmon and mollusks), induced by attractive export markets and made possible by favorable environmental conditions for their growth (water, temperature, etc).

2.33 Shrimp mariculture is gaining prominence in Centra America with over 25,900 ha in production in 1994. The major producers are Honduras, Panama and Nicaragua. Approximately 93 percent of the total Central American production (23,000 tons) was exported to the United States and Europe. Even where the industry is relatively small, it can play an important role in generating export earnings. By 1993, approximately 11,500 ha of semi-intensive shrimp farm ponds were established in southern Honduras. These farms lifted shrimp to third position in terms of Honduran exports, behind bananas and coffee (DeWalt et. al., forthcoming).

2.34 Colombia, Mexico and Peru are the other important shrimp mariculture nations. In these countries as well as Ecuador and Central America, shrimp mariculture is a catalyst for land use change along estuaries, lagoons and bays. In Ecuador, Colombia and Honduras alone, more than 70,000 ha of mangroves have been converted to shrimp ponds in the last fifteen years. There are growing concerns for the negative environmental effects of mariculture mainly due to habitat losses, eutrophication associated with effluent discharges, other changes in estuarine water quality and the introduction of exotic species.

Tourism

2.35 Tourism accounts on average for about 12 percent of GDP in Latin America and the Caribbean and coastal areas historically have served as the Region's main tourist destinations. The Region offers several mature destinations such as the beaches of Mexico, the Dominican Republic, the Bahamas, Barbados, Jamaica, Brazil and Uruguay. There are also more recent coastal facilities aimed at the booming ecotourism market such as the offshore keys of Belize, the Bay Islands of Honduras, the north east coast of Brazil, the coastal national parks of Costa Rica and the Galapagos in Ecuador.

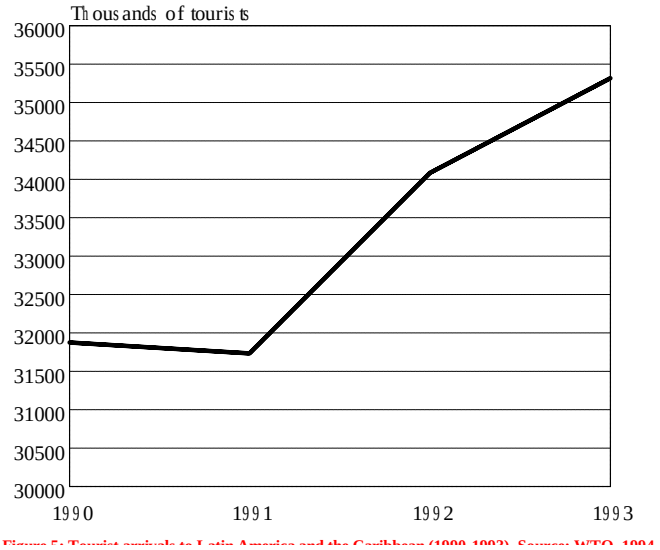

Figure 5: Tourist arrivals to Latin America and the Caribbean (1990-1993). Source: WTO, 1994

2.36 Latin America is one of the fastest growing tourism regions of the world. According to the World Tourism Organization, arrivals of international tourists to Latin America grew several times faster than the world average in 1994 (Huescar and Luhrman, 1995). Tourism in this region is predicted to grow yearly by 5 percent through the year 2000

(Huescar and Luhrman, 1995) (see Figure 5).

2.37 Tourism already represents a major source of foreign exchange for most of the Caribbean, for countries such as Costa Rica, Belize, Guatemala and Panama in Central America and for Uruguay, Argentina and Mexico. Around 100 million tourists visit the Caribbean annually (all countries including Cuba), contributing about 43 percent of the Caribbean's combined GNP (World Coast Conference, 1993) and one-third of export earnings (Huescar and Luhrman, 1995). By the year 2005, scuba diving tourism alone could generate revenues of approximately $1.2 billion in the Caribbean (Jameson et al., 1995).

2.38 Tourism provides employment for about 10 million people in Latin America and the Caribbean. The sector employs an estimated one person out of every six in the Caribbean (WTTC, 1993).

2.39 Tourism investments represent an important catalyst of land use change in coastal areas. As regional and international markets for new destinations grow so does demand for improved access along scenic coasts which until now had been without basic services. Improvements in access, energy distribution and communications needed for resort development as well as prospects for employment attract new residents to the coast, often leading to the transformation of traditional fishing villages. These changes trigger rising prices for land, competition for resources such as water and conflicts with sectors such as fisheries and agriculture. Cruise ship tourism, a market segment that is expanding throughout the Caribbean and Central America, is placing pressure on many destinations that have to handle increasing volumes of ship-borne wastes.

2.40 While tourism can contribute positively to growth through generation of foreign exchange, employment, economic diversification and regional growth, it also raises several development issues. For many countries, problems arise from the fact that the negative economic, environmental and social effects of conventional tourism are often borne by local populations while the immediate economic benefits accrue to national governments (Brandon, 1996).

2.41 The growing popularity of Latin America as an ecotourism destination has led to an increased demand for nature-oriented recreation services, improved access and other services in several coastal protected areas and their buffer zones (Blackstone Corporation, 1997). Ecotourism, like conventional tourism, creates a need for improved environmental management and land use planning which often exceed the capacity of local jurisdictions. In addition, ecotourism is not exempt from problems associated with economic leakages (Brandon, 1996).

Maritime Transport

2.42 Coastal areas worldwide serve as major transhipment zones for international trade. In this sense, the ports of Latin America and the Caribbean are important nodes in the flow of goods brought into and exported from the Region. The main industrial ports in South America are Buenos Aires, Montevideo, Santos, Valparaiso, Guayaquil, and Barranquilla with an additional 20 smaller ports scattered along the Atlantic and Pacific coasts. Central America has 13 major industrial ports and 12 secondary ones. The total tonnage for Latin American and Caribbean countries had increased from 3.2 percent of the world total in 1980 to 3.9 percent in 1990 and has remained at that level since (UNCTAD, 1995). Since 1980, the total tonnage of goods loaded and unloaded at ports in Venezuela and Colombia decreased markedly. Elsewhere in South America, tonnages have increased gradually such as along the Southeast Atlantic or remained stable. Seaborne trade in Central America experienced a marked increase over the same period. The Panama Canal is vital to the commercial shipping interests of the United States, Europe and Asia. With steady increases in the number of transits reaching 14,200 vessels in 1994, the Canal is experiencing signs of congestion.

2.43 There are indications that port activity is accelerating in all parts of the Region. In 1995, ports in Latin America and the Caribbean surpassed

European ports as the second leading destination for containerized U.S. exports with the equivalent of about 1.5 million containers (Journal of Commerce, 1996). In Brazil, goods unloaded were up an estimated 72 percent over 1994 and 40 percent overall for the east coast of South America. Increases in the range of 22 percent were reported in the Caribbean for the same year. This trend has led to heightened attention on the competitiveness of the Region's ports, many of which are being privatized. There are numerous plans for port expansion or for the construction of new ports to keep up with the increases in seaborne trade expected over the next decades in response to trade liberalization.

2.44 The ports of Latin America and the Caribbean are a significant factor in land use change in the coastal zone. Most commodity ports serve as magnets for manufacturing and processing activities, often contributing to both the urbanization and increasing industrial character of coastal areas. Expanding ports and seaborne trade are often accompanied by intensified transportation corridors in coastal areas (e.g., in Brazil, Uruguay, Argentina and Ecuador). Ports concentrate maritime traffic, often over limited ocean areas where conflicts can occur with other marine uses such as fisheries and tourism. Port operations, including maintenance dredging, and the disposal of dredge spoils and shipborne wastes, are having significant effects on coastal environmental quality. Increasing traffic increases risks from accidental spills, with several coastal segments of the Mexican Gulf coast and the Wider Caribbean considered at high risk. Maritime transport is also a major source of ship-generated marine debris in the Caribbean.

2.45 The coastal zone supports many activities other than fisheries, tourism and maritime transport. Agriculture is still a predominant land use in rural coastal areas where rice and banana production often occupy the flat alluvial soils of coastal plains. These activities sometimes compete with mariculture or tourism for land and water as is the agricultural areas fringing the Gulfs of Fonseca, Nicoya, Guayas and California (CAAM, 1996; TRD, 1993). Rural coastal communities throughout Latin America are undergoing marked shifts in their economy with tourism and related services gradually replacing fisheries and agriculture. These shifts are accompanied by fundamental social changes reflected in the role of families, community structure and culture. Indigenous coastal people such as the Garifuna and subsistence fishers, among the poorest segments of the population of many countries, are often ill-prepared to take advantage of these new economic opportunities.

2.46 Urban waterfronts support infrastructure such as processing and power plants, wastewater treatment plants, refineries and other industrial facilities which use coastal areas as receiving waters for treated and untreated effluents. Depending on prevailing currents and the volume and composition of effluents, these uses are in conflict with other activities dependent on marine water quality. Urban waterfronts also define the character of many coastal cities in Latin America, providing access, serving as local gathering points and as an integral part of the region’s maritime history.

2.47 When examining the combined economic importance of fisheries exports with tourism revenues, maritime trade and other coastal activities, some countries show a high level of dependence on their coasts. Obviously these include the tourism-dominated economies of the Caribbean. Other economies such as Panama, Belize, Uruguay, Ecuador and Chile are also very dependent on a combination of fisheries and mariculture, tourism and port operations. Central American countries with access to both Pacific and Atlantic coasts have an advantage in terms of maritime trade. This dependence, combined with the largely unknown potential for non-traditional maritime uses such as offshore mineral exploration is helping to adjust views on sustainable development to incorporate coastal and marine areas.

III. THE CHALLENGE OF SUSTAINABLE DEVELOPMENT IN THE COASTAL ZONE

3.1 Until recently, many of the policy reforms introduced for environment and sustainable development focused on land resources and ecosystems, with regulatory and institutional changes directed at forest, soil and freshwater resources. There are now signs that significant opportunities as well as hidden costs are being overlooked by not including a country's coast and maritime territory within the scope of its natural resources management policies.

3.2 Recognizing this gap, coastal states, international organizations and the environmental community have directed their attention to the constraints for implementing integrated coastal zone management (UNCED, 1992; and World Coast Conference, 1993). Consensus is forming that coastal areas and resources generally suffer from problems arising out of open access, with land tenure and resource allocation issues a fundamental source of conflict. A lack of understanding of the coastal zone often results in sectoral approaches to management, which are frequently short-sighted and overlook the dynamic character and multiple use values of coastal areas.

3.3 The challenge for the Region over the next decades will be to cope with the rates of change in coastal areas, recognizing the shortcomings of traditional approaches and building on the lessons of emerging policy reforms for integrated coastal management.

3.1 Major Issues and Factors of Change

3.4 The coastal and marine areas of Latin America and the Caribbean are undergoing a rapid, often drastic transformation. These changes are detected as environmental, social and economic problems which are typical of coastal areas as follows:

- **Land Use and Resource Allocation Conflicts in the Coastal Zone**: Because of massive, largely unplanned investments in sectors such as tourism, mariculture, port expansion and industrial facilities, coastal areas in Latin America and the Caribbean are the targets of accelerated land use changes and the conflicts associated with such changes. New activities compete for the same resources upon which coastal communities traditionally depend. In the absence of clear property rights or management, fisheries resources, coastal lands, beaches, mangroves, coral reefs are depleted, encroached upon or overused. These trends add to the conflicts. They contribute to escalating land prices, exposure to corruption, the displacement of traditional users and even civil unrest.

- **Degradation of Coastal Ecosystems**: Land conversion combined with the expansion of coastal infrastructure is contributing to the degradation of coastal habitats. Mangrove forests, an important link in the primary and secondary productivity of nearshore areas, have been disappearing at high rates throughout the Region. As much as 65 percent of mangroves have been lost in Mexico in the last 20 years (Suman, 1994). Ecuador, Colombia, Guatemala and El Salvador all show mangrove deforestation rates of over 20 percent over the past 20 years. In a recent regional assessment, 55 percent of the entire mangrove coast of Latin America and the Caribbean was classified as either critical or endangered, 30 percent as vulnerable and only 15 percent as stable (Olson, et al, 1995). Coral reefs close to population centers throughout the Caribbean, Central America and northeast Brazil are showing signs of accelerating deterioration from sedimentation and other effluents, overfishing, bleaching and disease (Rogers, 1990; Cortes, 1997; Woodley et al, 1997; Maida and Ferreira, 1997).

- **Depletion of Commercial Fisheries Stocks**: Fisheries in Latin America and the Caribbean

face mounting problems, including depleted stocks, overcapitalization and plant closures, habitat degradation, non-compliance with management regulations and illegal practices, and increasing competition between artisanal and industrial fleets. More than 80 percent of the commercially exploitable stocks in the South western Atlantic and 40 percent in the South eastern Pacific are either fully fished, overfished or depleted (FAO, 1995). The effects of fisheries bycatch on marine biodiversity and fisheries sustainability are also a growing concern. Given the dependence of the Latin American fisheries sector on foreign markets where demand is strong, pressure on stocks will continue to rise. This will be accompanied by rising prices for fisheries products, diversification into non-traditional products and foreign investments in mariculture escalating in both Central and South America. The recent expansion of aquaculture, which often depends on wild fisheries stocks for seeding (as in the case of farmed shrimp production) is also contributing to pressure on stocks.

- **Declining Coastal Water Quality from Land-Based Sources**: The region's estuaries and bays are among the world's most productive systems. They are also the receiving waters for large volumes of municipal wastewater discharges combined with urban and agricultural runoff, effluents from coastal aquaculture ponds and other discharges. The sediments, nutrients, organic material and various contaminants which flow into estuaries and bays tend to settle or are diluted with ocean water. However, there are signs this natural dilution capacity is being exceeded by the volumes and concentration levels of effluents. Rising levels of pollution in estuaries and bays represent an increasing public health hazard. They affect marine productivity and diversity as well as increase costs for tourism and mariculture. The 1994 outbreaks in shellfish disease in Peru, Ecuador, Honduras and Mexico are dramatic indicators of the costs of coastal pollution.

- **Increasing Coastal Erosion, Flooding and Shoreline Instability**: Coastal areas are susceptible to natural hazards, the effects of which are often intensified by poor land use practices. Coastal flooding, erosion and landslides caused by severe storms present significant risks for the safety and property of coastal residents, with devastating results for those living on small islands or close to low-lying coasts such as in Guyana. Deforestation, dredging and filling, poorly designed coastal structures and illegal sand mining often intensify the risks associated with coastal hazards. In the Caribbean, hurricanes, coral reef degradation and beach erosion are linked in a cycle threatening public health, shorefront properties and tourism. Concerns over coastal hazards will become more prominent in the next decade with better understanding of ocean-atmosphere interactions (e.g., El Niño events) and the effects of global climate change in terms of sea level rise.

- **Impoverishment of Coastal Communities**: The economic dependence of rural, often poor communities on coastal resources and lands is one of the major challenges of coastal management. Rural fishing villages depend on heavily fished inshore stocks for subsistence as well as mangrove wood for firewood and construction materials. Landless people have settled in flood-prone coastal areas in Guyana, Honduras, Ecuador and Brazil because these are the only lands available to them for settlement In those instances, unsustainable use of coastal areas and resources may appear to be the only alternative short of migration to urban areas. In locations such as the Gulf of Fonseca (see Box), the problems of depleted fisheries, coastal pollution and poverty overlap and add significantly to the inter-sectoral conflicts.

3.5 The relative importance of these problems varies from one location to another. A global survey which

Coastal Issues in the Gulf of Fonseca

Covering a surface of 3,200 km^2 and a shore line of 260 km shared by three countries, the Gulf of Fonseca represents a unique challenge for coastal management. It requires coordinated action among Honduras, El Salvador and Nicaragua, each struggling just to find the resources and solutions for its own coastal management problems. More than 20,000 ha of shrimp culture ponds have been developed. Approximately 10,000 small-scale fishermen depend on the Gulf's productivity for their livelihood. The Gulf now faces a cycle of environmental degradation and impoverishment tied to poor agricultural practices causing sedimentation and pesticide contamination from the Choluteca and other watersheds; rapid conversion of mangroves into shrimp farms; overharvesting; decline in water quality and conflicts over access to traditional fishing areas. As some residents leave to seek relief from poverty and loss of opportunities around the Gulf, many others arrive to take their place, pursuing work in new agro-export industries and shrimp mariculture. The development of shrimp mariculture has been chaotic, with farms being constructed before receiving permits, and even legal farms having caused environmental damage and disruption of traditional resource users.

used urbanization, population density, road density and ports as indicators, found that 50 percent of coastlines in South America could be considered under moderate or high threat from development pressures with considerably higher levels of risk in the Caribbean and the Pacific coast of Central America (Bryant et al, 1995). One unique feature of coastal areas is that these problems are usually cumulative — that is the most serious resource degradation problems have built up gradually as the combined outcome of numerous actions and small-scale alterations which alone may have had relatively minor impacts. Resource managers worldwide now recognize that these cumulative effects (effects that are either additive or synergistic) represent a major challenge for coastal management (NOAA Coastal Ocean Program, 1995). Cumulative effects are being manifested by an increase in the frequency, extent, and duration of harmful algal blooms in coastal areas, suggesting that human activity has affected the base as well as the top of marine food chains (Vitusek, et al., 1997; Anderson, 1994). Early scientific evidence on the spread of coral diseases suggests that the cumulative effects of exposure to pollution may have affected the normal resilience of these systems (Hayes and Goreau, 1997; Cervino et al, 1997).

3.6 Population growth and urbanization, the institutional setting for coastal management and changing markets are among the key factors underlying all of these issues. Each is introduced further below.

Population Growth and Urbanization

3.7 In almost every country in the Region, the rate of coastal population growth is greater than the national rate of growth. Much of this growth is taking place in coastal cities. In the coastal provinces (states) of the Region, the annual rate of increase ranges from 3.1 percent (Guatemala) to 1.3 percent (Argentina). While some are losing population (at annual rates of 0.7 percent in Cuba and Barbados) these are minor exceptions. By subregion, the overall growth rate in coastal provinces is estimated at 1.0 percent in the Caribbean, 1.9 percent in Mexico, 1.7 percent in South America, and 2.3 percent in Central America. When weighted for size of population, the mean growth rate in the Region's coastal provinces over the last decade is estimated at 2.0. The urbanization of coastal areas translates to habitat loss, increased pollution and competition for shorefront access.

Lack of Institutional Capacity

3.8 Fragmented, often overlapping public sector institutions typically head the list of coastal management problems. Inadequate institutional capacity reveals itself in the difficulties faced by government institutions to mitigate the adverse effects of development on coastal areas or to resolve conflicts over the allocation of resources under public jurisdiction such as tidal waters, mangroves and fisheries. Important elements lacking in most countries are: leadership and continuity; trained staff; inter-agency coordination, including formal mechanisms for resolving resource conflicts; fully participatory processes; and an ability to enforce regulations. The virtual lack of maritime surveillance and enforcement, particularly in remote coastal areas and islands, is a widespread institutional problem and one which has left several locations vulnerable to illegal activities.

3.9 Some countries have experimented with restructuring to overcome institutional problems such as inter-agency commissions (e.g., Uruguay, Dominican Republic) or semi-autonomous units (Barbados, Ecuador). But without real improvements in capacity accompanied by mechanisms to ensure the financial sustainability of coastal management, institutional restructuring has had limited effect on how coasts are managed.

Price Distortions and Changing Markets

3.10 Explicit or hidden subsidies to offshore fisheries, mariculture, tourism, or agriculture, for example, are distorting the economic context for determining resource use. Subsidies in fisheries have been a major reason for overexpansion of the fishing fleet, over fishing, and ultimately, a loss in species abundance and the long-term sustainability of the industry. Subsidized land is an important subsidy for mariculture throughout Latin America. In Ecuador, the availability of underpriced coastal public land led to rapid conversion of mangroves to shrimp ponds in the 1970's and 1980's. While many such sectoral policies are designed to achieve legitimate objectives, they can have unanticipated and negative side effects on the coastal environment. Reforming such perverse incentives provides one of the most cost-effective instruments for promoting coastal conservation, but requires the necessary institutional capacity for successful implementation and enforcement (Southgate and Whitaker, 1994).

3.2 Traditional Approaches

3.11 Traditional approaches to coastal and marine areas have emphasized investments in infrastructure initially from the public sector and increasingly through the private sector. The fisheries and tourism sectors illustrate the shortcomings of these approaches for sustainable development.

3.12 In the 1970's, fisheries gained increasing importance for many of the Region's governments. There were several attempts to develop the resources through the use of large scale parastatal enterprises, some of which were supported by the Bank. Since, in some countries, there was a lack of infrastructure for fisheries, it was thought necessary to use public sector agencies to build that production capacity as well as onshore processing and storage facilities. It was also a prevailing concept among all development agencies at that time that public sectors provided the best path to development. Fishery management policies consistent with this concept were oriented toward increasing extractive activity through one of two approaches: (1) an increase in the number of vessels, or improvements in the gear used to fish traditionally exploited stocks, or both — a process known as *intensification of production;* or (2) an expansion of the fishing fleet's area of operation to new fishing grounds, or exploitation of underexploited stocks, or both — a process known as *extensification of production* (Christy, 1996).

3.13 While there were short-term increases in earnings at first, these earnings were not sustained as a result of several effects associated with this approach to fisheries management including overcrowding, stock deterioration and increasing conflicts between artisanal and industrial fisheries.

These effects lead to widespread economic deterioration of the fishery sector, a situation in which any management guidelines enacted by the government lack both effectiveness and support. From a macroeconomic viewpoint, this type of management approach, which has been common in fishery sectors throughout the world, results in the waste of scarce commodities, such as capital and renewable natural resources, in labor market distortions, and in increased impoverishment of the country (Pavez, 1994).

3.14 UNCLOS heralded a new period of fisheries development, one where national governments were given expanded responsibilities for managing living marine resources within their EEZ (Williams, 1996b). The concept of maximum sustainable yield (MSY) prevailed with secondary considerations for economic efficiency, equity and other social goals. Fishers enjoyed controlled or open access to the stocks in return for paying fees to governments. In 1993, FAO issued a report on the state of the world's fisheries which underscored the exploitation status of fish stocks and related environmental issues. While it attracted little attention initially, the report and the formulation of several international fisheries agreement in 1994 became the subject of worldwide attention (Williams, 1996b; Safina, 1995; Parfit, 1995). There was broad consensus on what factors had contributed to depleted fisheries stocks and the pitfalls of traditional approaches to fisheries which emphasized development (of production infrastructure) rather than resource management (OECD, 1997).

3.15 Traditional approaches to tourism in Latin America and the Caribbean have also raised concerns for sustainable coastal development. In the 1970's, the sector was characterized by large-scale public sector investments in roads, sanitation, energy and communications designed to attract private sector investments in resorts and associated services. Government land was used as a subsidy to attract foreign investments. The emphasis was on centralized, master planning of tourist areas often overlooking the indirect land uses changes that came in the wake of resort development. There was little attention directed at the social or environmental implications of tourism development on local communities. Conflicts between tourism and local fishing communities grew.

3.16 In the 1980's, several states recognized the need to provide access to credit for private investments in tourism as a means for creating local employment. Regional competition for markets in the US and Europe rose appreciably, resulting in falling prices and an orientation to mass markets in Mexico, the Dominican Republic and elsewhere in the Caribbean. Improved air and road access throughout Latin America and the Caribbean opened new destinations which offered the scenic quality and sense of adventure sought by a changing international market. Much like the conventional resorts though, some ecotourism destinations rapidly showed evidence of overuse in the absence of effective policies for maintaining environmental quality and community involvement as well as incentives for compliance with regulations.

3.17 Until recently, much of the discussion in environmental management in Latin America and, to some extent in the Caribbean, had focused on terrestrial environments — spurred in part by international concerns over deforestation. The Bank's basic environmental policies and activities had also concentrated on land areas, with only peripheral references to coastal or maritime areas in procedural documents or country programming documents. The terrestrial focus of environmental policy in Latin America has had some important implications:

- Donor support for policy reforms in natural resources management has been aimed at restructuring former forestry and agricultural departments, also characterized by a land orientation. As a result, the wave of natural resource management and environmental policy reforms which swept Latin America in the late 1980's and early 1990's seldom encompassed fisheries agencies or maritime administrations;

- Financial support for biodiversity conservation and protected areas was predominantly directed to land areas, usually overlooking the biodiversity of coastal and marine ecosystems. Mangroves, estuaries and coral reefs are still not well represented in many national systems of protected areas (CEPAL, 1994; Kelleher, et al, 1995);

- Most public sector investments for pollution control have relied on coastal waters as receiving waters with only limited evaluations of the economic and environmental cost implications of conventional effluent discharge solutions. Conventional environmental impact assessment procedures failed to address the cumulative impacts of small-scale alterations which contribute to environmental degradation in the coastal zone.

In summary, traditional sectoral approaches have not been effective in maintaining the productive value of coastal areas. While the role of public sector institutions in managing coastal and marine resources has gone through major shifts, responsibilities are not well articulated nor have incentives been introduced to ensure that private sector interventions address sustainability.

3.3 Global Consensus on Principles

3.18 The term coastal management came into common use in the early 1970's with passage of the US Coastal Zone Management Act in 1972. Integrated coastal management (ICM) was recommended at the 1992 United Nations Conference on Environment and Development (UNCED) as the framework for responding to both global and national issues posed by the relationships between human society and coastal and marine environments. Chapter 17 of Agenda 21 calls for all nations with coastlines to adopt integrated coastal area management plans by the year 2000. There is a growing consensus on the major characteristics of ICM (Chua and Scura, 1992; OECD, 1993; Pernetta and Elder, 1993). All definitions stress the dynamic nature of ICM and its emphasis on sectoral integration. ICM can be defined simply as (GESAMP, 1997).

> *a continuous and dynamic process that unites government and the community, science and management, sectoral and public interests in preparing and implementing an integrated plan for the protection and development of coastal ecosystems and resources.*

3.19 The same report states the goal of ICM:

> *The overall goal of ICM is to improve the quality of life of human communities who depend on coastal resources while maintaining the biological diversity and productivity of coastal ecosystems ... It is a process that unites government and the community, science and management, sectoral and public interests in preparing and implementing an integrated plan for the protection and development of coastal ecosystems and resources. Expressed in this way, the goal of ICM is clearly consistent with national and international commitments to sustainable development for all environments (terrestrial and marine), from the headwaters of catchments (watersheds) to the outer limits of exclusive economic zones...*

3.20 ICM usually focuses on three goals: overcoming the conflicts associated with sectoral management; preserving the productivity and biological diversity of coastal ecosystems; and promoting an equitable and sustainable allocation of coastal resources (Post and Lundin, 1996). The objectives of any ICM program are specific to the coastal problems to be resolved for a defined area — the coastal zone. An equitable, transparent process of governance is also central to ICM. Coastal management relies on a variety of techniques (see Box) to achieve its specific objectives.

Coastal Management Techniques

- Coastal management plans
- Land use zoning and setbacks
- Marine protected areas
- Management and restoration of coastal habitats (estuaries, coral reefs, mangroves)
- Coastal pollution control
- Shoreline stabilization
- Closed access regimes
- Capacity building
- Inter-agency coordination
- Community-based management
- Conflict resolution
- Environmental assessment

3.21 ICM falls along a spectrum of integration, with enhanced sectoral management, coastal zone management and ICM representing increasing degrees of integration. This classification is also useful in understanding the different stages of evolution of any country moving towards ICM.

3.22 There is an emerging international consensus of the principles and features of effective coastal management (Chua and Scura, 1992; OECD, 1993; Pernetta and Elder, 1993; Sorensen, 1997). Five principles have a direct bearing on the strategy:

- local and national ownership of the program;
- participation in all phases of the program;
- strategic decision making;
- integrated approaches and methods; and
- the precautionary approach to management.

3.23 These principles have been incorporated to the Bank's strategy (see Section V). Above all, it is the integrating feature of coastal management that distinguishes the endeavor from traditional sectoral programs. One dimension of integration are the linkages created between "bottom-up" and "top-down" approaches to resource management and policy reform — a concept referred to as the "two-track" approach (Olsen, misc. years). The two-track approach calls for building capacity both within central government and coastal communities. Both governments and communities are involved in the analysis of development issues and in taking responsible action. The power of this approach lies in creating a dialogue that promotes a sense of shared purpose at both levels.

3.4 Emerging Reforms in Latin America and the Caribbean

3.24 Within the last five years, a few countries in Latin America and the Caribbean have started closing the gap between their policies for land and maritime resources. This is particularly true of countries whose economies are closely linked to environmental quality in the coastal zone. Recent inventories highlight the considerable scope of coastal management efforts in the Region and the upsurge of initiatives since only 1987 (Sorensen and Brandani, 1987). Of all the existing initiatives, five have now been in existence for sufficient time to have made significant inroads in public policy:

- Barbados and its Coastal Conservation Program;
- Ecuador with its Coastal Resources Management Program and the Special Regime Law approved in 1998 for the Galapagos and its marine reserve;
- Belize's Coastal Zone Management Program, and the enabling Coastal Zone Management Act passed in 1998;
- Brazil's National Coastal Management Program;
- Costa Rica's Coastal and Marine Program.

3.25 While it is difficult to isolate all the factors explaining the continuity of these programs, one key factor appears to be a focus on clearly defined coastal problems. Another key feature is the ability of the program to provide services (information, screening, monitoring) directly related to important sectors of the national economy such as tourism in Barbados or shrimp mariculture in Ecuador. In addition, these programs have demonstrated an ability to evolve from an initial, rather restricted focus towards a more integrated and participatory approach.

3.26 The Barbados Coastal Conservation program illustrates well the evolution that a nation can make from a sectoral perspective to one that is more integrated. This program is now in its thirteenth year. The initiative, funded by the Bank from the outset, began in 1983 with the establishment of a Coastal Conservation Unit, and a pre-feasibility study and diagnostic survey of the coastline. The study was followed by several years of technical analysis of shore dynamics and problems, beach enhancement, and field trials of various beach erosion control measures.

3.27 The Barbados Coastal Conservation Program underwent a significant evolution towards a more integrated approach between 1991 and 1998, broadening its shoreline dynamics focus to encompass land use and economic development planning, indirect environmental impacts, community participation in resource management, and legal and institutional strengthening. These shifts in focus were partly in response to a growing awareness of the problems of poor coastal water quality from urban, agriculture, and industrial sources, and lack of wastewater treatment systems. The new, more integrated program combines multidisciplinary research and coastal engineering with institutional and legal mechanisms for coastal development control and the preparation of a national coastal zone management plan. The Barbados Coastal Zone Management Act which was passed in December 1998 provides the legal basis for one of the first national coastal plans in the Caribbean.

3.28 A sub-regional assessment conducted for Central America indicates that few countries other than Belize and Costa Rica have set national priorities for coastal management, this despite the importance of mariculture, maritime transport and tourism to their recovering economies (Rodriguez and Windevhoxel, 1996). At this time, coastal management in Central America is mainly a collection of projects which may or may not support economic development priorities. Real political commitment to the goals of coastal management is still rare, with little evidence in national economic development plans or sectoral plans (particularly fisheries and mariculture). In every country, the status of coastal ecosystems is only starting to be documented and reliable baseline data on resources or coastal water quality are almost non-existent. The situation is changing however with the completion of new surveys of mangroves and coral reefs which have documented severe rates of deterioration along the Pacific and Atlantic coasts of Central America, helping to bring the issue to the forefront. In 1995, Costa Rica announced a major new initiative designed to complement its existing coastal zone management efforts undertaken through the National Tourism Institute. Five "Marine Areas of Multiple Use" were declared with the intent of promoting the integrated management of critical maritime areas such as the Gulf of Nicoya. Progress in the establishment of national programs has also been slow in South America, with the exception of Brazil (see Box) and Ecuador.

Evolution of Brazil's National Coastal Program

Brazil's National Coastal Management Program underwent a significant evolution in 1992, twelve years after the creation of the first inter-ministerial commission for marine resources. The Federal Program was adjusted as follows:

- focus on practical, locally specific management
- increased emphasis on decentralization to the State and municipal levels with a renewed focus on monitoring
- simplification of the zoning standards to allow for more flexibility in the State-level programs
- application of participatory planning methods

3.29 The numerous small projects scattered throughout are helping to build local and regional capacity in coastal disciplines mainly in NGOs and universities. In some countries such as Brazil, Costa Rica and Colombia for example, there are active networks of

professionals dedicated to coastal management. These are complemented by important regional networks for marine science and monitoring such as the Caribbean Coastal Marine Productivity (CARICOMP) network linking 16 countries and the Association of Marine Laboratories of the Caribbean (AMLC). These networks serve as an important starting point for creating ownership for larger, more permanent coastal initiatives. Experience is also being gained on how various institutional arrangements, such as inter-agency commissions and decentralized units, help resolve conflicts in the coastal zone. Finally, the sub-regional assessments are also showing that countries in Latin America and the Caribbean are at very different stages of evolution towards integrated coastal management. A few countries such as Brazil, Ecuador, Costa Rica and Barbados are into the "second" generation of their national coastal management programs, facing with varying degrees of success the question of financial sustainability. Others are still at the stage of isolated pilot projects, often short-term and with limited long-term effects.

3.30 There is a growing recognition that fisheries and mariculture management policies in Latin America will need continued major reforms (Aguero, 1996). Only a few countries such as Brazil and Trinidad and Tobago are making attempts to integrate their fisheries management efforts into a broader coastal management framework (Brazil Ministry of Environment, 1995). Artisanal fishermen and other stakeholders in the Galapagos (Ecuador) have been actively involved in the approval of a law and preparation of a management plan aimed at decentralized and participatory management of the archipelago's marine resources. Uruguay and Argentina have also recognized coastal management as the most effective approach for managing the fisheries resources of the Rio de la Plata estuary.

3.31 A commitment towards sustainable development of the Region's coastal and marine resources is emerging. Various regional meetings have recognized the need to accelerate action and to form new partnerships with national and local resource management agencies, the private sector, non-government organizations, the marine science community in order to meet the challenge of integrated coastal management (e.g., 8th Coral Reef Congress in Panama; Conference on the Sustainable Management of the Littoral Zone of Rio de la Plata). This heightened awareness is expected to boost the demand for financial and technical assistance in coastal and marine resources management in Latin America and the Caribbean over the next decade.

IV. THE BANK'S MANDATE AND EXPERIENCE

4.1 Meeting the Mandate

4.1 The Eighth General Increase in the Financial Resources of the IDB explicitly recognizes the need for a new focus in calling for "*Support for the conservation and management of the region's maritime resources" (AB-1704, p. 34)*. One of the objectives is to assist the region in establishing programs for the integrated management of coastal and marine areas tailored to social and economic priorities of coastal states. Much like other integrated approaches to natural resources management, coastal and marine resources management can provide a framework and techniques which enable coastal states to make progress towards achieving their sustainable development objectives in a strategic part of their national territory.

4.2 Beyond this reference however, the goals of integrated coastal management are highly consistent with the fundamental objectives of the 8th Capital Replenishment. First, integrated coastal management is now recognized as an important aspect of sustainable development. It is designed to fill the existing gap in environmental and natural resource policies where the focus, until recently, had been on land-based resources without recognizing the special circumstances that characterize coastal and marine areas. Coastal management enhances the value of these areas over the long-term and it assigns responsibility for their stewardship. As such, sustainable development of the coastal zone of Latin America and the Caribbean is a part of achieving long-term economic and social well-being of the Region's population.

4.3 Coastal management embraces the principles of participation and transparency which contribute to social equity and good governance — both are also at the core of the Bank's strategy for the Region. It reaffirms that governments are the stewards of valuable "common property" assets such as their marine fisheries, coastal waters and ecosystems and that, with effective cooperative management, these assets can have increased contributions to sustained economic growth. By helping to overcome costly conflicts between sectors such as tourism, maritime transport and fisheries, coastal management can also help contribute to stability and a more orderly and equitable process of land use change triggered by trade liberalization.

4.4 Because coastal management works towards the involvement of coastal constituencies in planning, resource allocation and monitoring, it can also contribute to the decentralization of natural resources management to political and administrative levels closest to resource users. When combined with other complementary approaches to natural resources management, such as integrated water resources, coastal management can then serve as a powerful tool for public sector reform.

4.2 Why a Strategy for Coastal and Marine Resources Management

4.5 The number of coastal and marine resources management operations approved by the IDB is still small and limited in geographic scope compared to the projected needs for coastal management in Latin America and the Caribbean. Indeed, there are many priority coastal areas where use conflicts are escalating dramatically due to declining coastal water quality, land speculation for tourism and pressure on fisheries resources, areas such as the Gulfs of Fonseca and Nicoya in Central America, Guayas Gulf and the Galapagos in Ecuador or the State of Bahia in Brazil.

4.6 Other than the experience gained recently with the design of a few projects reviewed below, the Bank is operating in a policy void with regard to coastal and marine resources both from the standpoint of programming and quality enhancement of

projects. The Bank fisheries policy (OP-724) dates back to 1969 and, as shown in previous sections, conditions for fisheries have changed dramatically since that time. The Bank's policy on environment emphasizes environmental impact assessment with no direct references to the marine environment (OP-703). The Policy on Natural Disasters does refer implicitly to the vulnerability of coastal areas to hurricanes and floods but emphasizes structural solutions such as breakwaters and revetments for disaster prevention in low-lying coastal areas (OP-704).

4.7 Recognizing this void, the Bank called for the preparation of a strategy for coastal and marine resources management in 1995. The strategy is needed to:

- Complement the Bank's existing policies and guidelines for sustainable development, including the forestry and environment policies;
- Set out priorities (subregional and national) for the use of Bank resources to maximize impact;
- Enhance the quality of investments in sectors that depend on the coast such as tourism, fisheries, ports and wastewater treatment; and
- Clarify the role of the Bank in supporting or promoting the application of international agreements including UNCLOS.

4.8 Perhaps as important, the strategy and the process contemplated for its implementation offer a vehicle for discussing policy issues related to coastal and marine resources management with member countries and other stakeholders such as international and regional organizations and NGOs. The consultation and outreach process planned for the upcoming years will lead to consensus on how the Bank can most effectively continue to support coastal management initiatives in the Region.

4.3 Lessons from Bank Experience

4.9 The Bank has been providing public sector financing for infrastructure and productive activities in the coastal zone of Latin America and the Caribbean, with the nature of the investments changing considerably in the last two decades. This experience is reviewed briefly below with the emphasis on lessons directly applicable to the coastal and marine resources management strategy.

Investments in Marine Fisheries Development

4.10 As of October 1968, the Bank had financed relatively few projects in the fisheries sector. By the end of 1981 however, the Bank had financed 38 technical cooperations (mostly for project preparation) and extended close to $300 million in loans for 15 projects with a combined total cost of roughly $720 million. The Bank's investment projects, in both number and amounts, were moderate in the early 1970's, increased considerably in the late 1970's, and dropped off in the 1980's, reaching zero after 1983 (see Figure 6). Loans went primarily to countries in the Southwestern Atlantic, followed by Mexico, Central America, the eastern Pacific and Caribbean.

4.11 Most investments financed by the Bank were multi-purpose projects, including construction of vessels, port infrastructure, and provision for marketing and processing facilities. All but two of them provided support for vessel construction or rehabilitation. One was solely for support of a research center. About half of them provided lines of credit while the other half provided funds to executing agencies for capital investments. Two were aimed primarily at the large scale sector with the remainder directed at the artisanal sector. In the latter case, emphasis was given to the establishment or support of cooperatives of fishermen (Christy, 1996).

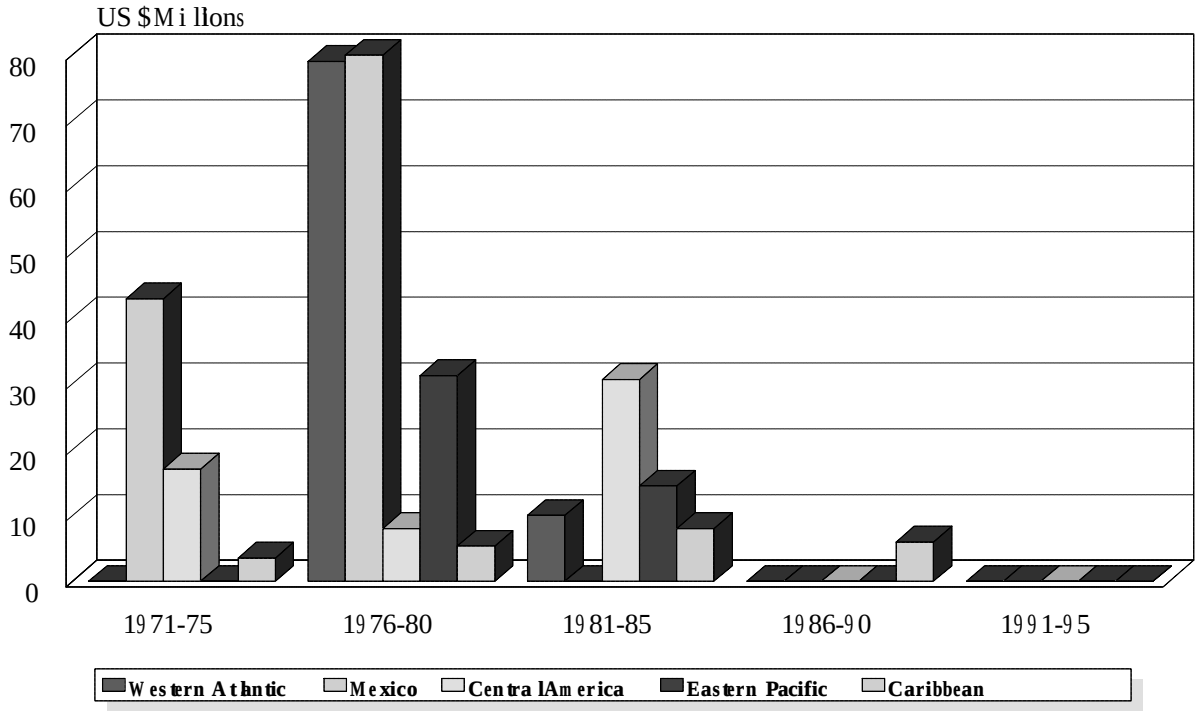

Figure 7: Projects approved in the fisheries sector (by period and geographical area)

4.12 Only three of the investment projects attempted to provide information on the potential yields of the resources targeted by the projects, although they all had general statements to the effect that the resources were plentiful. No reference was made to the objective of achieving maximum net economic revenues from the fisheries. Furthermore, there were no references to the possibility that the increase in vessels would lead to decreased catches per unit of effort, or decreased productivity. And there were no references to the possibility that increased catches by the beneficiaries would be likely to have negative effects on other fishermen fishing for the same or related stocks.

4.13 Another significant deficiency in all but two or three of the projects was the absence of information on markets and prices for the products, although several were aimed at the production of food for low income consumers. Three of the most costly projects sought to increase the food use of fish caught for fishmeal through improved handling and processing and marketing promotion. These occurred in the period when there was much attention to the idea of developing a "fish protein concentrate" as a means for alleviating protein malnutrition.

4.14 Half of the projects involved the development and support of fishermen cooperatives, mostly as a means for receiving credit for vessel construction and for marketing and processing operations. The project documents make no references to the difficulties associated with the creation of fishermen's associations, nor to the problems small scale fishermen have in making standard loan repayments (due to seasonal disparities in earnings and uncertainties in catches) or to the importance of fishermen involvement in the process of organizing themselves.

4.15 Attempts to measure the real effects of these fisheries projects on the economic and social welfare of the countries are difficult to make. The project completion reports focus essentially on execution and the problems that may have been associated with specific activities. Baseline data on which to measure changes in fishermen's incomes, increases in net

economic revenues, increased consumption by low-income consumers are virtually non-existent, and few attempts have been made to assess these benefits; much less the possible relationship between such changes and the projects' activities.

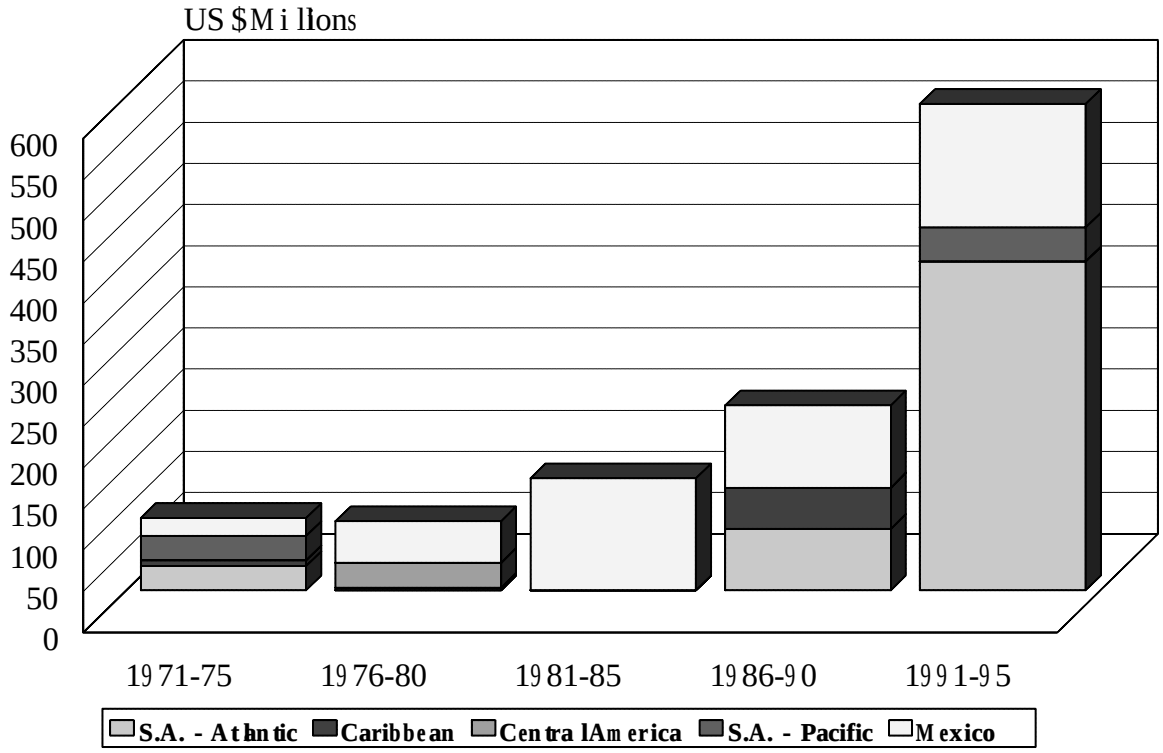

Figure 8: Projects approved in the tourism sector (by Period and geographical area)

4.16 In the late 1980's, the Operations Evaluation Office (OEO) of the Bank undertook in-depth evaluations of four fisheries projects. Three of these evaluations are available, two of which provide important lessons for the Bank's future activities in fisheries. One of the projects evaluated was a Multisectoral Global Credit Program for Chile with a significant fishery sector component (IDB/OEO, 1989). This project provided sub-loans amounting to $32.9 million for 81 industrial fishing operations and $13.5 million for 1,776 artisanal fishing operations. There were two major aspects addressed in the evaluation: one relating to the problems of overfishing and the other to the difficulties of providing credit to artisanal fishermen. With regard to the first aspect, it was noted that "there is some evidence that...some artisanal loans were granted for the extraction of species already under excess fishing pressure" (IDB/OEO, 1989). A critical conclusion was that "credit operations in fisheries should only be considered when there is an effective program of fisheries management in place". With regard to the provision of credit to artisanal fishermen, the report found that a serious debt in arrears problem had developed in the artisanal portfolio, pointing out that artisanal fishermen often lacked familiarity with credit instruments and that standard credit arrangements were not suited to the special character of the industry including fishing seasons, relations with financial intermediaries and processing plants for example (Christy, 1996). These findings are well supported in the literature on small scale fisheries, which stress the vital importance of working within the social and economic context of their communities .

4.17 The question of degree of success, or failure, in the Bank's fisheries projects is difficult to answer because of the absence of critical information with regard to the economic effects of the projects. It is possible that some of the early projects providing for capital investment in fish harvesting and processing were beneficial to the recipient states. However, the fact that catches declined or rose only slightly in eight out of the eleven projects involving investments in fish harvesting capacity indicates that the record of failure may outweigh that of success.

4.18 The well-publicized record of failure of public sector loans in marine fisheries development financed by the Bank and other donors coupled with the recent attention given to the environmental effects of fisheries partly explain the reduced demand for investments in this sector. Fisheries-related operations are being submitted on occasion either for public sector or private sector financing through the Multilateral Investment Fund (MIF). In recent fisheries projects submitted for consideration, the Bank has had to address issues which traditionally were overlooked including the environmental effects of by-catch, fisheries and marine biodiversity, and the impacts of effluents from mariculture on coastal water quality. With increasing frequency fisheries/aquaculture management and conservation components are now being included in Bank loans for coastal management (such as in Ecuador and Honduras), agricultural diversification (e.g., Belize), integrated rural development, and social investment funds. While attempting to balance multiple economic objectives in coastal rural areas, these operations require a consistent approach towards marine resource use consistent with the precautionary approach and other basic principles.

The Bank's Past Experience with Investments in Coastal Infrastructure

4.19 Important shifts have taken place in the Bank's tourism investments, most of which have been in coastal areas. Between 1971-1995, the Bank approved a total of US$1.23 billion in tourism loans and US$11 million in technical cooperations (see Figure 7).

4.20 Although not all financing went to coastal areas, the largest loans supported infrastructure on the coasts of the Caribbean (Dominican Republic), Mexico, Panama, Venezuela, and northeast Brazil. Mexico remained a constant recipient of Bank loans in tourism, with much of the investments supporting the development of the planned resorts of Cancun, Bahias de Huatulco and other Pacific coast resorts (Estevez, 1995). In the 1970's and 1980's, tourism projects consisted mainly of public infrastructure investments in roads, basic sanitation, maritime works, communications and energy distribution designed to attract private sector investments in resorts and related businesses. A loan in Mexico was provided for the reconstruction of infrastructure after a hurricane.

4.21 Some of the recent tourism loans reflect the state's changing role in the sector, with the most recent loans including components for land use zoning and setbacks, marine protected areas, the restoration of coral reefs, and community involvement in the sector (e.g., loans approved for Mexico and Trinidad and Tobago). As a general rule however, the emphasis has been on addressing the direct environmental impacts of tourism infrastructure using standards mitigation measures combined with institutional strengthening for environmental monitoring.

4.22 In contrast with the magnitude of its tourism investments, the Bank financed only US$91 million for the rehabilitation of ports and harbors between 1971 and 1995 with an added US$4.4 million in technical cooperations (see Figure 8).

4.23 Projects in the port sector were almost all approved in the early 1970's and most were in the Caribbean, except for a loan approved for Buenos Aires in 1995. Of direct relevance here, there are five pending port rehabilitation projects in the 1997-98 pipeline for an estimated total of US$324 million or over three times the approvals since 1971. This renewed interest in port rehabilitation investments for

the Region underscores the need to address the question of both direct and indirect impacts of port operations. Issues raised during preparation have included mitigating the effects of dredging and dredge spoil disposal; port safety, handling of hazardous cargo and emergency response; maritime navigation safety; and solid waste disposal.

4.24 Increasingly, the Bank is requiring that loans for some types of coastal infrastructure (mainly ports and tourism) are designed within a broader land use and institutional framework which addresses potential use conflicts, land-based sources of pollution and conserving coastal habitats. Given the volume of these and other sectoral investments that affect the coastal zone (e.g., in the transportation and irrigation sectors), it is expected that a considerable amount of experience will be gained in how enhanced sectoral management can, in fact, contribute to the acceptance of more integrated coastal management programs in the region.

4.25 This enhanced sectoral management is not without its challenges though, both for the preparation and execution of loans. Some important constraints include:

C Limited tradition or depth of experience in using land use planning tools (i.e., zoning, setbacks, performance standards) in sectoral developments within Latin America and the Caribbean;

C Limitations in the methods and data used for forecasting the cumulative and indirect impacts on coastal systems (and communities) of various types of infrastructure. For example, recent investments in sanitation infrastructure in coastal

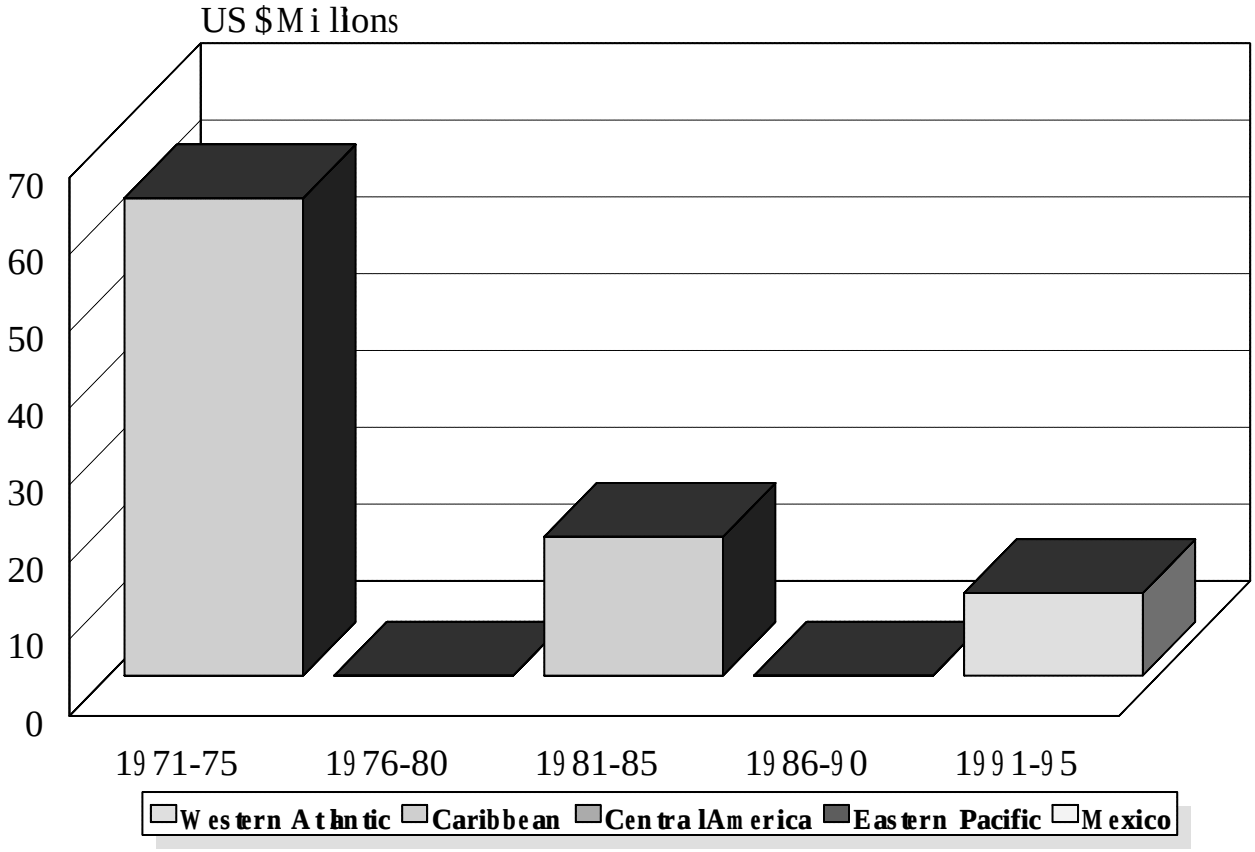

Figure 9: Projects approved in the ports sector

cities (e.g., Rio de Janeiro, Montevideo, Cartagena) and islands have raised questions concerning ocean disposal of municipal effluents their cumulative effects on estuaries, bays and reefs and how to best maintain acceptable levels of marine environmental quality;

- The methods for analyzing the costs of environmental impacts in the coastal zone or the benefits of coastal management are still experimental. This has led to problems in the socio-economic justification of coastal management components added to conventional infrastructure loans;

- Reluctance on the part of line agencies responsible for public infrastructure (e.g., Ministries of Public Works, Tourism or Agriculture) to adopt best practices in coastal management as part of conventional infrastructure projects.

4.26 In countries where public sector investments are concentrated in the coastal zone, there is also the risk of duplication and inefficient use of resources as each line agency collects baseline information and monitors changes in the coastal zone. In fact, it is probably when countries reach this stage — when there is a concentration of investments and associated rapid land use change in the coastal zone, that there is a need to establish a more integrated coastal management approach.

Financing Integrated Coastal Management Programs

4.27 In addition to adding coastal management features in the design of infrastructure loans, the Bank has financed coastal management initiatives through loans and non-reimbursable technical cooperations. In all, the Bank has approved almost US$60 million in financing for integrated coastal management since 1993 with approximately US$90 million in pending operations (Annex I).

4.28 The Bank approved its first integrated coastal management loan for Ecuador in 1993. This investment recognizes the links that exist between coastal ecosystems, water quality and the sustainability of that country's shrimp mariculture industry. Several lessons emerged during the preparation of the program such as: (a) the importance of having coastal stakeholders genuinely participate in setting priorities and forging the decision-making arrangements for project execution; and (b) the value of donor coordination, in this instance the cooperation between the U.S. Agency for International Development (USAID) and the IDB. The USAID-financed project helped prepare the ground for the much larger loan-financed program by identifying the issues, building capacity, creating the political climate and local ownership needed for the Coastal Resources Management Program to continue its evolution (Robadue, 1995). The loan preparation process also came at an important time for the program, in effect solidifying the Government of Ecuador's commitment to establish coastal management as a permanent responsibility of its public sector. Negotiations with the Bank helped the process of decentralization, enabling a coastal unit to coordinate activities from Guayaquil. Loan preparation helped focus attention on the issue of financial sustainability over the mid-term and the need to recover costs for coastal management services.

4.29 In 1994, the Bank approved the Bay Islands Environmental Management Project. The Department of the Bay Islands of Honduras consists of three main islands and over 65 cays lying along the northern coast of Honduras. The core of this US$24 million loan is the protection of terrestrial and marine ecosystems using a management regime that combines watershed conservation with the creation of Honduras' first national marine protected area, fisheries conservation and the control of land-based sources of pollution. The preparation of the loan provided some valuable insights into the following (Lemay, 1996):

- Linking investments in watershed management (i.e., erosion control) with coastal management (in order to reduce sedimentation of reef);

- The contribution of coastal management to the strengthening of municipalities and decentralization of natural resources management. In this case, the loan is being used to create a regional environmental unit which will service all three municipalities as well as an Association of Municipalities which will gradually take on responsibility for local environmental services; and

- The need to direct attention at the financial sustainability of coastal management programs during loan preparation using a multi-faceted revenue generation plan.

4.30 Some useful lessons have also been gained from the latest loan approved for the Barbados Coastal Conservation Program including the importance of flexibility in project design to allow for the evolution of coastal management initiatives. In addition, this loan is demonstrating the long-term value of coastal management services for public sector investment strategies. In the case of Barbados, the existence of a long-standing coastal management program which has been collecting baseline data for several years which can be expected to produce benefits (and savings) for the analysis of pending investments such as the Bridgetown Port rehabilitation project and the West Coast sewerage project.

4.31 Most of the Bank's experience in integrated coastal management to date has been in the preparation of loans. These programs will surmount various obstacles during implementation, including limited human resources in government and the private sector trained in coastal management. In each case, the small coastal units that have been created face formidable tasks in resolving conflicts among economic activities and in securing the support of more powerful sectoral agencies such as Fisheries, Tourism and Public Works Departments. A key to success will be the ability to demonstrate that good coastal management yields measurable returns to the national economy in terms such as improved competitiveness (for tourism or shrimp production for example), employment creation or avoided public costs (e.g., for coastal flood control).

4.32 In addition to these coastal management loans, the Bank has supported coastal management activities through technical cooperations and various funds. Requests for assistance since 1993 have been varied originating from countries such as Guyana, Haiti, El Salvador, Panama, Costa Rica, Peru, Argentina and Brazil (see Annex I). Bank-financed technical cooperations have included small projects in marine conservation in northeast Brazil for example, marine rapid ecological assessments, a regional information network for the Caribbean, a study of conflict resolution for coastal management, and various capacity building projects.

4.4 Attributes of Success

4.33 While each coastal management project financed by the Bank has been tailored to the coastal issues of the project location, they all share some features including:

- the participatory approach used for project design and execution;
- the mixture of policy reforms (e.g., for sustainable mariculture in Ecuador) along with practical demonstrations in the restoration of coastal habitats, and traditional investments in environmental sanitation;
- the establishment of a cost-effective baseline of coastal conditions with physical and socio-economic indicators of change;
- understanding that the public good aspects of coastal and marine resources all for unique governance arrangements;
- requiring that investments in coastal infrastructure be placed within their broader land use context to prevent avoidable inter-sectoral conflicts;
- formal agreements for cost sharing with local governments, private sector associations, NGOs

and financing institutions;

- the introduction of mechanisms for inter-agency coordination, negotiation and dispute resolution among competing sectors in the coastal zone;
- multi-faceted revenue generation measures to ensure the financial sustainability of the program;
- a robust institutional strengthening component.

4.34 In summary, the Bank's experience in coastal-related operations clearly points to some necessary changes in the way these projects are identified, designed and monitored to take into account the special character of coastal and marine areas. Marine fisheries operations underscore the urgency of moving from open access regimes to management schemes that restrict access, maximize rents and integrate environmental considerations. Tourism operations have shown that the indirect land use changes associated with large public sector investments in the coastal zone call for more attention to municipal land use planning and zoning at the outset as a means of avoiding conflicts as well as unwanted cumulative effects. The integrated coastal management projects have underscored the need to tailor the scope and objectives of more innovative projects to the existing institutional capacity and human resources of the country.

V. THE BANK'S STRATEGY

5.1 There are unprecedented opportunities for improving the Bank's intervention in coastal and marine areas which can produce major contributions to national economic welfare. These opportunities are derived from the singular challenges facing sustainable development in coastal areas, the lessons learned from the last twenty years, reforms in recent international agreements, and the heightened attention directed at coastal and marine resources.

5.2 These circumstances suggest the need for a distinct strategy to guide the Bank's involvement either through lending, technical assistance or policy dialogue. Coastal and marine resources management represents a relatively new theme for development assistance compared to other more established aspects of natural resources management. The strategy must first help to raise awareness of the subject and its contribution to economic development within the Bank and among borrowing member countries. It must help Bank staff in considering the benefits, costs and risks of investments and policy reform that affect coastal areas, particularly with coastal-dependent sectors. As it becomes implemented, the strategy can introduce untapped opportunities for investment, development research, regional integration and partnerships with regional and international organizations.

5.3 This section presents the core of a Bank strategy for coastal and marine resources management. The strategy consists first of a goal and a set of objectives which have direct implications for Bank action. Second, several basic principles are designed to bring Bank intervention in line with widely-accepted international thinking in integrated coastal management and sustainable development. Third, elements for innovation are proposed to clearly orient Bank action in new directions expected to gain prominence in the Region over the next decade. Finally, the strategy puts forth actions that translate the conceptual foundation into practical measures which can be implemented and monitored using the various instruments at the Bank's disposal.

5.1 Goal and Objectives

5.4 The overall goal of the strategy is to improve the quality of life of communities that depend on coastal and marine resources and increase the contribution of these resources to national economic welfare while maintaining the biological diversity and productivity of coastal and marine ecosystems. In working towards this goal, the Bank should orient its actions towards the following specific objectives:

(a) Support the establishment of institutions, programs and policies that will facilitate efficient and equitable allocation of coastal and marine resources, giving consideration to existing and potential uses;

(b) Create incentives for the effective management and protection of coastal and marine ecosystems, particularly those of regional and national significance;

(c) Promote strengthened, participatory governance of coastal and marine areas;

(d) Prevent conflicts and avoidable losses in environmental quality in the Region's coastal and marine areas; and

(e) Build regional consensus on shared priorities, good practice and responsibilities in meeting the intent of international marine agreements dealing with coastal and marine resources.

5.5 The more immediate, operational objective is to assist the Region in establishing programs for the integrated management of coastal and marine areas tailored to social and economic priorities of coastal states. In doing so, the intent is to promote regional and national leadership in coastal management through meaningful participation of stakeholders, create opportunities for innovation and adaptive learning in problem-solving, link coastal management to other aspects of sustainable development including water resources management, and foster genuine commitment towards a more integrated and precautionary approach to coastal and marine resource use.

5.2 Guiding Principles

5.6 The Bank's strategy in coastal and marine resources management recognizes that, to be successful, interventions in coastal and marine areas should strive to comply with some fundamental principles presented below. These principles are widely accepted as being necessary conditions for real progress towards sustainable development.

Local and National Ownership of the Process

5.7 Since a coastal management program articulates a nation's goals and policies for a geographically specific region or regions, it is essential that the process by which it is developed and refined is owned by the government and the constituency it represents. Key parameters of ownership are:

- government endorsement and involvement in the process;
- broad stakeholder participation backed by full disclosure of information and open dialogue among users;
- sustained, ideally collaborative, support from NGO's and the donor community; and
- willingness to share in the responsibility and costs of the program.

5.8 At the national level, coastal management needs to be understood as a priority that will help solve the problems posed by the limits of sectoral structures within government. At the same time, coastal management typically requires decentralization of authority to the local level and acceptance of experiments in governance which can often lead to innovative policies. Hence, ownership of a coastal program has to reside within several constituencies, which themselves represent different sectors dependent on coastal and marine resources. With ownership comes the shared sense of responsibility and institutional leadership which are also conditions necessary for successful coastal management programs. Ownership means that the pace of change through coastal management must be set by consensus by the partners of the program and not through external forces.

Participation is an Integral Part of Coastal Management

5.9 Coastal management programs must ensure strong public involvement of those who are most affected by the coastal development process. International experience repeatedly demonstrates that programs are successful and sustained only where there are constituencies that are active advocates for improved resource management. This is best accomplished by making public education and consensus-building important components of any initiative. But the responsibility towards participation goes well beyond awareness and extends to creating genuine accountability among all stakeholders. In some instances, effective participation may require formal processes for negotiating and resolving conflicts among users. These processes must be transparent and may combine techniques such as consultative hearings, mediation and appeal procedures. The poorest segments of coastal communities, such as subsistence fishers and other vulnerable groups, will often require communication and participatory approaches adapted to their distinct needs.

Maintaining a Focus on Critical Issues

5.10 The importance of maintaining a strategic focus throughout program development and implementation cannot be overstated. This requires

spending time defining and confirming problems based on input from decision makers, the public and scientists. This helps ensure that the program is focused on problems important to resource users and the general public. To maintain a strategic focus, it is important to prioritize environmental problems and opportunities and to concentrate efforts at the causes of such identified problems.

Integrated Approaches and Methods

5.11 Coastal regions, with their overlapping economic interests competing for the same common property resources, are where integrated approaches are most urgently needed. The forms of integration required by coastal management have many dimensions. One dimension is integration between "bottom-up" and "top-down" approaches to resource management and policy reform: the so-called "two-track" approach to coastal management (Olsen et al, 1996). The two-track approach creates opportunities to bring different groups together to agree on coastal problems needing action, root causes of these problems and shared responsibilities for management.

5.12 A second dimension of integration is the combination of good science with governance. The management of complex coastal ecosystems subject to significant human pressures cannot occur in the absence of the best available information, applying the findings of both biophysical and social sciences. Marine sciences help characterize problems over time, distinguishing natural and human-related causes of environmental change. Research efforts uncover how coastal ecosystems respond to change and help test potential restoration techniques. When combined with the results of economic and social research, these efforts contribute to innovative management solutions. Technological advancements in detecting change in the coastal and marine environment (e.g., through remote sensing) enable resource managers to build "working models"of bays and estuaries which serve in selecting development options. With consistent monitoring of quantitative indicators, results can be measured and compared to baseline conditions in order to evaluate the effectiveness of policies. **Science-based resource management** is enbedded in the notion of effective coastal management.

5.13 Some coastal management programs have focused too much on science or technical aspects of coastal problems and too little on governance processes. Experience in countries such as Brazil and Belize is confirming that research and technology (GIS systems, impact assessment, ecosystem modeling, surveys, and inventories) are of limited value if the institutional context in which they are introduced is not capable of innovation or making "behavioral" changes. In many Latin American countries, marine sciences are simply not being used to solve development issues. According to this principle, the results of science must be communicated effectively, adapted to the policy-making process and its value for management demonstrated.

5.14 A third aspect is the integration among sectors and disciplines. The complex overlay of issues and institutions along coastlines makes it impossible for a single agency to meet the challenges of management alone. Success lies in forging partnership among institutions, among user groups and among programs and those who provide technical assistance.

Precautionary Management Approach

5.15 The precautionary fisheries management approach is now widely acknowledged as the basic policy for bringing marine fisheries in line with the principle of sustainable development (FAO, 1995b). The concept calls for caution — erring on the side of prevention, in all fisheries activities: research, management and development. While this concept has been applied mainly to living marine resources, its intent is applicable to other coastal resources. The principle recognizes that living marine resources and coastal ecosystems are poorly understood and their responses to human-induced pressures highly uncertain. Understanding of their functioning is likely to require considerable more research. However, the precautionary approach stipulates that the absence of adequate scientific information should not be used as

a reason for postponing or failing to take management measures, but rather that States should adopt as soon as possible cautious limits of use which should remain into force until there are sufficient data to assess the impacts of fisheries (and other activities) on long-term sustainability. The intent is to introduce incentives for cautious and sustainable behavior in light of uncertainty such as property rights for open access resources. The precautionary approach is particularly relevant when dealing with coastal and marine ecosystems where there is considerable uncertainty with regard to behavior and resilience. Under these circumstances, the restoration of a degraded system must be viewed as a costly option with often unpredictable results as is the case for estuaries, coral reefs and fisheries stocks.

5.3 Elements of Innovation

5.16 If the strategy is to have its intended impact, it must clearly put forth the new directions which can steer Bank action towards the objectives stated above. These are considered the fundamental elements of change or innovation for guiding Bank activities which affect sustainable development of coastal and marine areas in Latin America and the Caribbean.

- **Coastal Management as an Integrating Framework for Investment and Resource Allocation**: The Bank will rely on the concepts and practice of integrated coastal management to reinforce the linkages between coastal-dependent sectors and sustainable development. As a first priority, integrated coastal management will be used as a framework to enhance the sustainability of Bank-financed operations in marine fisheries management, mariculture, tourism, port development and rehabilitation, and water pollution control in coastal areas. In the most practical sense, this means that coastal-dependent sectors will be analyzed within a broader context, with due consideration of land-sea interactions, the distinct character of coastal communities and their resource dependencies. The results of relevant marine sciences will be combined with the notion of good governance to reach sound development decisions in coastal areas. Coastal management techniques, including land use planning adapted to local reality and capacity, should be used to enhance Bank financing of all infrastructure in the coastal zone defined broadly as encompassing the land-sea interface, adjacent terrestrial systems that affect the sea and the Exclusive Economic Zone. Within this broadly defined coastal zone, special attention will be given to investments located: (a) within the legally-defined coastal zone of a country or boundaries set by the critical resource issues to be resolved; (b) in the immediate watershed of major estuaries and semi-enclosed bays; (c) small islands and archipelagos; and (d) coastal waters. This will be a gradual effort aimed at acquiring an increasingly more integrated view of development, land (and ocean space) and resources in the coastal zone.

- **New Paradigms for Investing in Living Marine Resources**: The Bank's strategy recognizes that the fundamental issue in marine capture fisheries is that of moving from open to closed access regimes. Associated issues are the need for making decisions on the distribution of wealth; the formulation and implementation of appropriate management measures; the transfer of primary management responsibility to fisher groups; and enforcement of closed access regimes. Through its operations directly aimed at marine fisheries, the Bank will provide incentives for a shift in policy from development to management and conservation, with increasing awareness of the importance and benefits of fisheries management as well as the damaging consequences of excessive investment in open access fisheries. In its operations with potential negative impacts in coastal areas, the Bank will require analysis of the costs associated with alterations in fisheries habitat, losses in productivity and diversity as a basis for prevention or mitigation.

Consistent with the new standards set in international agreements for responsible fisheries and mariculture, the Bank will work with its borrowing member countries in incorporating environmental considerations into marine resources management with the specific aim of protecting coastal and marine ecosystems and marine biodiversity (see also below).

C **Reducing Indirect and Cumulative Impacts in the Coastal Zone**: Coastal and marine areas invariably serve as the receiving waters for all types of upstream effluents, including sedimentation from deforestation, freshwater inflow changes and other disruptions in hydrological regimes. Recognizing that environmental assessments have been more effective in mitigating direct effects of projects than their indirect effects, the Bank will seek refinements in methodologies which allow for adequate consideration of induced or secondary changes on coastal ecosystems and resources. This could include, for example, greater reliance on Strategic Environmental Assessments (SEA) and modeling of water quality changes associated with construction of operation of coastal infrastructure (i.e., ocean outfalls, dredging, water diversions). It will entail improved analysis of environmental benefits and costs of water pollution control projects with measurable effects on "downstream ecosystems" such as estuaries and coastal bays. This also calls for more effective pollution management strategies for major coastal cities and industrial areas, where coastal zone and river basin management should be integrated with basic sanitation and pollution control (World Bank, 1996). In addition, methods will be developed for understanding cumulative effects (both additive and interactive), analyzing both temporal and spatial dimensions of land use change and environmental quality in the coastal zone. Given that shoreline areas are highly dynamic systems that respond to coastal processes which cannot entirely be predicted or controlled, the Bank will encourage use of non-structural measures for shoreline stabilization over structural solutions. In aiming to reduce the indirect and cumulative impacts of infrastructure and upstream water use on coastal and marine ecosystems, the Bank will promote the application of watershed management measures linked with coastal management objectives (see Box).

Linking Coastal and Watershed Management

Watershed management tools come into play in reducing indirect and cumulative impacts in the coastal zone, particularly in the following circumstances:

- small island ecosystems with fringing reefs and mangroves;
- major estuarine ecosystems affected by water diversion and irrigation projects;
- semi-enclosed bays and lagoons;
- low-lying poorly drained coasts affected by erosion and flooding.

C **Processes for Avoiding and Resolving Conflicts in the Coastal Zone**: Coastal management often calls for reconciling divergent objectives among competing sectors or, for example, between private shorefront property interests and public activities in tidelands and coastal waters. Disputes may also arise over marine resources which are shared between two countries. The conflict resolution techniques available to resource managers lie along a spectrum encompassing conflict prevention through consultation, public disclosure and balanced representation to more formal mediation and dispute arbitration. The capacity to resolve resource conflicts is one of the key elements of coastal governance (see below). Recognizing that resource use conflicts in the coastal zone are an important obstacle to sustainable development, the Bank will promote the application of consensus building and dispute resolution processes for achieving multiple use and an equitable allocation of land (and ocean space) and resources in coastal areas.

- **Coastal and Ocean Governance**: Policies, regulations, and institutions aimed at the management of coastal and marine areas lag behind other aspects of natural resources management. In many instances, this lag reflects a lack of awareness of the Region's coastal and marine heritage and its contribution to national economic welfare. **As such, there is a generalized, fundamental need to introduce the economic value and issues relating to coastal and marine resources to government agencies, the private sector, and non-governmental organizations throughout Latin America and the Caribbean as a first step towards governance of coastal and ocean areas.** The Bank recognizes its unique position to work with its borrowing member countries to foster commitment to the management of these areas within institutions and at levels of decision closest to resource users. Broad-ranging education and outreach will be needed to develop informed constituencies for coastal management. Government institutions, non-governmental organizations and private sector groups need to agree on how to best share responsibility for coastal management with clear mandates assigned to local, state and national government within coastal watersheds, in intertidal areas and throughout the EEZ. Where a commitment to action exists, priority will be given to building in-country for resolving coastal conflicts with local stakeholders, municipal land use planning and effective use of other coastal management techniques. Using the experience of national coastal programs already in existence, the emphasis will be on adaptive learning and flexible institutional arrangements which can evolve as new issues emerge.

- **Innovative Solutions for Islands**: Experience throughout the region confirms that islands present unique conditions for sustainable development. Nowhere is the reality of carrying capacity as apparent as in small islands which face severe constraints in land, water resources, energy, access, biodiversity and productivity. The economies of small island states in particular are highly dependent on these finite resources and most susceptible to coastal processes. Caribbean island states thus have a very immediate need for integrated approaches to natural resources management, with coastal management providing that integrating perspective. Even countries along the continent have under their jurisdiction archipelagos and islands which require a decentralized resource management capacity and policies tailored to an environment and social context which are often very distinct from the mainland. The Bank will focus attention on the specific needs of islands and island jurisdictions, encouraging the dissemination of innovative solutions that are adapted to their scale and context.

5.4 Strategic Actions

5.17 The principles and innovative elements that underlie integrated coastal management will require significant adjustments in how the Bank and national governments collaborate. The process of internalizing these adjustments within the Bank, and achieving them in the Region, will take time. Change needs to be introduced incrementally to adapt to human resources and other constraints. The following is a set of actions which will set forth these adjustments. While not necessarily in order of priority, they do represent a logical sequence from initial priority setting to international coordination.

Building Consensus on National Coastal Management Priorities

5.18 Coastal management begins with efforts to set priorities for action at the regional, national and local scales. Only a few countries have gone through the initial steps of assessing the state of their coastal zone and establishing national priorities for coastal management. Country-wide efforts to assess trends and set geographically-specific priorities need to be broadened considerably. National assessments require information on baseline indicators, an analysis of trends as well as legal and institutional reviews. These assessments must be accompanied by

intense consultation with coastal resource users, including those living in poverty, to confirm trends and agree to priorities in line with social and economic development goals. Assessments serve the double purpose of orienting effort where it is most needed as well as building consensus on a country's most urgent coastal problems. Reliable, comparable data on the status of coastal ecosystems (e.g., estuaries, coral reefs, mangroves), resources (fisheries, water quality) and their socioeconomic value are needed as a basis for setting priorities.

5.19 Because most countries have not gone through the process of articulating priorities linked to economic development, the Bank usually lacks sufficient context for evaluating incoming requests for financial assistance in coastal management and related sectors. Consequently, priority setting can help the Bank be more effective in its own programming.

5.20 Priority setting can be done as part of national coastal management plans or, alternatively, as part of National Environmental Strategies or Physical Development Plans. While the content of these plans will vary to reflect the circumstances of each country, there are components which will indicate the state of preparedness of that country to proceed with a more permanent national coastal management program. These elements are:

- a statement of goals for coastal management and the mid-term (five to ten years) objectives for local coastal management initiatives being contemplated;
- a set of policies and priorities for action as they relate to the most pressing coastal problems;
- demonstration that an adequate governance structure exists to begin implementation and where the responsibilities of collaborating governmental agencies and private sector participants are made clear and solid commitments to work together have been negotiated;
- articulation of a development and conservation scenario for the coastal areas in question that identifies the interrelationships and combined impacts of the actions proposed;
- delineation (mapped) of priority areas for (1) conservation and restoration, and (2) areas of particular concern due to important conflicts and/or development opportunities.

5.21 Primary responsibility and ownership of these first generation plans and the process by which they are formulated must reside with the government and local stakeholders and not the Bank. The Bank can help generate interest in national priority setting for coastal management by supporting regional and national assessments of emerging coastal issues, the status of major coastal ecosystems and their linkages to poverty and sustainable development.

Supporting Innovative Local Coastal Management Initiatives

5.22 There is undoubtedly a need to continue promoting the evolution of coastal management programs in Latin America and the Caribbean. To do so means supporting specific initiatives in the field, particularly those that have the greatest chance of contributing to genuine progress towards integrated coastal management and its basic objectives.

5.23 When the Bank considers making an investment in coastal management, it is important that it accurately assess the scale of effort that is most likely to be appropriate. This requires evaluating whether a country's program during the period being contemplated is best categorized as being at the level of demonstration, consolidation or extension, and accurately assessing the capacity of the institutions involved. The best approach is for countries to progress through a sequence that begins with strong local support for action, gradually encompasses larger geographic areas, moves towards further decentralization and involvement of local governments, and addresses more issues. Programs that ignore this sequence usually run into trouble.

5.24 The design and implementation of the Bank's investments in coastal regions must also recognize the time frame required for a coastal management program to evolve from a focus on a few select

issues to a broader-based approach balancing the objectives of multiple economic sectors dependent on coastal resources. The Bank, working as a partner with individual governments, non-governmental organizations and private sector associations, must commit to this evolution by sustaining its support through a succession of linked projects and by confronting the issue of financial sustainability of coastal management initiatives.

5.25 Experience teaches that programs flourish when they "learn by doing", often beginning with modest efforts to implement innovative solutions and governance processes during a period that is devoted primarily to planning and capacity building (Olsen et al, 1996). This pilot phase usually serves the valuable purpose of demonstrating the real benefits of coastal management along with its shortcomings. To serve as a demonstration, benefits must be documented, quantified and compared to implementation costs. In this sense, economic evaluations of coastal management initiatives are a powerful tool which the Bank can promote.

Revitalized Financing in Marine Fisheries Management and Conservation

5.26 The gradual withdrawal of assistance to the marine fisheries sector on the part of the Bank and other financing institutions has overlooked the urgent need for policy reform for sustainable management of living marine resources. As part of this strategy for coastal and marine resources management, the Bank intends to revitalize its support for the management and conservation of living marine resources to: (a) increase their contributions to national economic growth; (b) protect and enhance fishery resources and the ecosystems upon which they depend; (c) create sustainable employment opportunities; and (d) prevent losses in marine environmental quality, productivity and diversity.

5.27 Consistent with the aim of shifting attitudes from development to management and recognizing the damaging consequences of excessive investment in open access fisheries, the Bank will provide its member countries with support in establishing the required institutions and resource allocation regimes for sustainable fisheries management. This will include support for the following types of policy and administrative changes:

- Support the move from open to closed access regimes and the integration of environmental concerns in fisheries, through policy reform, capacity building and co-management;
- Acquisition of knowledge about potential economic rents resulting from effective fisheries management as an impetus for the adoption of appropriate measures, including making decisions about the redistribution of wealth in fisheries by closing access and creating property rights;
- Removal of subsidies to the fishing industry and facilitating the creation of economic rents through systems of exclusive use rights;
- Support for the preparation of fishery management plans for specific fisheries;
- Support for the development of alternative employment opportunities or other incentives to ease the transition out of over-exploited fisheries and to reduce the risk of displacing vulnerable groups such as families dependent on subsistence fisheries; and
- Strengthening of monitoring and enforcement capability.

5.28 There are several kinds of activities appropriate for Bank involvement (Christy, 1996). These logically fall into three sequential steps. The first set of activities is the support or conduct of research to provide information on the benefits of institutional change and the methods for achieving it (see Box). The second is the encouragement or provision of support to governments, through technical cooperation projects, that will lead to the necessary transition to closed access regimes. This encompasses Bank operations aimed at strengthening or developing national fisheries management authorities, with the active participation of fishing communities in the context of integrated coastal management (OECD, 1997).

Priorities for Sustainable Fisheries Research

- Basic economic and social data
- Resource valuation
- Means for extracting economic rents
- Community-based fisheries management
- Marketing analyses
- Trade and the sustainability of production

5.29 Once the appropriate institutions are in effect, there may be opportunities for investment projects in marine fisheries. Investment projects in fisheries will be considered in two distinct phases. The first phase is the present situation where open access conditions still prevail. In this phase, the opportunities for investment projects should be confined to those projects which do not result in increased fishing effort (e.g., fisheries habitat conservation; fisheries reserves) or to projects which help to reduce overcapitalization. Loans will be primarily, though not entirely, to the public sector. In some instances, loans may be directed at helping rural fishing communities prepare for a local ecnomy shifting towards ecotourism. The second phase will occur when countries have established mechanisms for controlling access to fisheries. Once such systems are in effect, the opportunities will be broadened considerably and will include loans to both the public and the private sector.

5.30 The Bank will also provide support towards the integration of environment and social equity in marine fisheries and mariculture operations. This will include support in the following areas (Williams, 1996a):

- Strengthening the relationship between national networks of marine protected areas and fisheries productivity ;
- Improving technologies for fisheries habitat restoration and enhancement;
- Promoting cost-effective solutions and incentives for by-catch reduction;
- Promoting improved understanding and consideration of traditional dependence on living marine resources for subsistence and cultural identity, including utilization by indigenous peoples;
- Improved control and treatment of mariculture effluents.

5.31 As a logical step to the above, the Bank will support fisheries administrations' efforts to incorporate marine resources management into policies, plans and projects in integrated coastal management.

Strengthening Institutional Capacity and Human Capital for Integrated Coastal Management

5.32 Progress towards integrated coastal management in Latin America and the Caribbean calls for innovative institutional arrangements designed to overcome conflicts in coastal resource use, reinforce decentralized decision making, and build partnerships with the private sector. Distinct institutional arrangements are also needed to manage marine resources and systems that cross several boundaries. The largest impediment to this progress in the Region is the inadequate supply of skilled professionals and weak institutional capacity in most countries.

5.33 Two kinds of professionals are needed if more effective coastal development and management is to take root in the Region (Chua and Scura, 1992). The first and most numerous are the specialists who work in coastal-dependent sectors such as marine fisheries, tourism, port management and marine pollution control. These are the marine scientists, coastal engineers, economists, lawyers and entrepreneurs that are required when integrated coastal management strategies are formulated and implemented at any scale. Such specialists are currently educated with a narrow perspective and are not necessarily equipped with the ideas and skills that can enable them to contribute to truly interdisciplinary team efforts.

5.34 The second, much smaller group, are the professional coastal planners and managers. Such coastal managers need the skills and knowledge required for conflict resolution, the analysis of

coastal issues, formulation of development scenarios, selecting resource and land use allocation techniques, and facilitating participatory planning. Working as a team, coastal managers and specialists trained in coastal management can interpret and communicate complex trends and help local governments with other stakeholders reach land use decisions and select potential solutions to resource degradation problems.

5.35 There are two types of actions that the Bank can take to address human capacity needs. The first is to build into projects short term training and team reviews of experience to enhance skills and abilities of those involved in coastal management programs. Learning-by-doing, bolstered by documentation and dissemination of experience, should be a cornerstone of all coastal management programs in the Region.

5.36 The second is to invest in short-term training in emerging university-based education programs. Formal educational programs are urgently needed to build an indigenous regional capacity in integrated coastal management and related disciplines such as fisheries economics.

5.37 The Bank along with other financing institutions must support capacity building for coastal management not only within government at national, provincial and local levels, but also within NGOs, universities and key private sector groups. The objective should be to build the full range of coastal management services from data collection and analysis, land use planning, community-based management, monitoring and enforcement and education. In addition to strengthening individual institutions, there should be an emphasis on strengthening regional and national networks of practicioners as well as universities, research institutions and laboratories conducting marine sciences with a development focus. Efforts will be made to facilitate the involvement of these networks in coastal management operations.

5.38 The Bank will match its coastal management projects to the capacity of institutions responsible for their execution. Providing funds and responsibilities to institutions that exceed their capacity is counter-productive since it usually results in failure, loss of credibility and even the dismantling of what had been a promising but young and inexperienced institution. This means that when considering an investment of Bank resources, the maturity of the existing coastal management program in terms of demonstrated capacity needs to be assessed. The steps in the coastal management process that have been successfully completed, and what scale of effort is likely to be most appropriate, must be clearly identified. Countries will need to demonstrate that certain "threshold" requirements are in place before investments are made. One such requirement should be a basic capacity and commitment to generate revenues, establish fees, or enter into cost sharing agreements to ensure the financial sustainability of coastal management.

5.39 Many countries are now facing the decision of whether to create maritime administrations with a resource management mandate within their Exclusive Economic Zones. The notion of multi-purpose Coast Guard units is still in its infancy in most countries. With increasing concerns over navigational safety, marine pollution, fisheries management and drug intradiction for example, many countries will be seeking a capacity for cost-effective maritime surveillance and enforcement. A professional and peaceful stance over maritime waters is a key element towards achieving regional integration. The Bank can play an important role in helping countries determine how best to meet future needs for maritime enforcement along these lines.

Applying Good Practices for Sectoral Coastal Developments

5.40 The Bank will continue to incorporate elements of coastal management into its investments for infrastructure in the coastal zone, including operations in tourism, marine pollution control, port management, coastal agriculture and aquaculture, road rehabilitation and energy production. This integration of coastal management into infrastructure projects will generally involve the following types of

activities:

- Sector-wide analyses of the linkages between coastal trends, public sector policies and performance in coastal-dependent sectors in countries where these sectors make significant contributions to the economy;

- Documentation of lessons learned and successful cases in enhanced sectoral management. These will form the basis of good practices for investments and public policy reform in sustainable tourism (including ecotourism), fisheries and mariculture management, marine pollution control in the coastal zone, and port operations;

- Research to improve methodologies for forecasting the indirect and cumulative land use impacts of coastal infrastructure, with special attention to the carrying capacity limitations of islands, estuaries and bays; and

- Technical assistance to promote greater compliance with international agreements for maritime pollution control, ocean disposal, fisheries management and other ocean uses.

5.41 Concerted efforts will be made to disseminate good practices for coastal-dependent sectors both through the public and private sectors. This could involve adjustments in sector regulations to ensure consistency with national objectives for coastal management. It could also entail specialized training and institutional strengthening of regional industry associations for coastal dependent sectors (e.g., regional port and tourism associations).

5.42 Recognizing the increasing contribution of private sector financing of coastal infrastructure, the Bank will examine the application of economic and financial incentives to promote compliance with good practices among private operators and businesses.

Developing Quantifiable Indicators of Change in the Coastal Zone

5.43 The conditions of coastal and marine ecosystems serve as effective indicators of sustainable development. As receiving waters for upstream effluents, estuaries and bays can provide signals of the degree to which pollution and erosion control measures are working. Coral reefs are highly sensitive to increases in nutrients in coastal marine waters as well as overuse from tourism and fisheries. In a similar manner, small islands often show early signs of stress from poor land use decisions that do not take into account carrying capacity.

5.44 International organizations are working towards the development of quantifiable indicators which would allow governments and financing institutions to take stock periodically of coastal trends and the effectiveness of management measures (Bryant et al., 1995). The United Nations Council on Sustainable Development, for example, has included several coastal parameters in its list of sustainable development indicators (see Box). The more advanced programs such as the State of Florida Coastal Zone Management Program have started to link biophysical indicators such as ambient levels of nutrients in bays with wastewater effluent discharges, toxic algal blooms and effects on tourism and sport fishing (FACT, 1996).

Coastal Indicators Proposed by the UN Council on Sustainable Development

- Eutrophication (algae index) in marine ecosystems
- Coastal area population growth
- Coastal water nutrient releases
- Coastal water oil discharges
- Land use
- Local area management
- Maximum sustainable yield ratio for fisheries
- Marine species catches

5.45 Most countries in Latin America and the Caribbean lack the resources needed to collect data on quantifiable indicators of coastal change. A few marine regional monitoring networks are attempting to set up low-cost protocols applied across sub-regions such as the Wider Caribbean to monitor coral bleaching and disease outbreaks, coastal sedimentation, beach erosion and the encroachment of mangroves. With international cooperation, these regional monitoring networks could offer a cost-effective solution to more systematic use of quantifiable indicators in reaching decisions about coastal development. The Bank will cooperate with international, regional and national organizations in developing consensus on quantifiable indicators of change in the coastal zone, exploring ways where it can support integrated monitoring networks for key "indicator" systems (estuaries, islands and bays). The Bank will work towards the application of such indicators to monitor its own activities, including the cumulative effects of investments on coastal areas.

Promoting Marine Sciences and Technology with a Development Focus

5.46 The ability to apply marine sciences for managing coastal and marine resources lags significantly behind management of terrestrial and freshwater systems (Botsford, et al., 1997). This applies throughout Latin America and the Caribbean where, until very recently, marine research depended heavily on science institutes (and scientists) from outside the Region. Even today, marine science programs show only a cursory attention to development priorities even in key disciplines such as oceanography and marine ecology. This lag has had important implications for the Region including costly gaps in information for management, unknown economic potential of marine resources and overlooked opportunities for development. As one immediate consequence, major feasibility studies for maritime works or environmental impact studies for coastal infrastructure suffer from undersampling of ocean areas and an inability to forecast the effects of alternative management choices, greatly increasing uncertainty. The Bank has long recognized the need to promote a regional capacity in science and technology (for example in agriculture) as a factor in development. To date, this support has encompassed marine sciences only on an ad hoc basis without consideration of the needs for coastal and marine resources management. Through existing science and technology support and regional dialogue, the Bank will promote the formulation of research agendas for marine sciences and technology that address development priorities and promote a greater regional capacity.

Partnerships for the Implementation of International Maritime Agreements and Regional Financing

5.47 Several international and regional maritime agreements have been approved in recent years, many of them with the intent of incorporating coastal and marine areas into the global agenda for sustainable development. These generally fall into the following general categories:

- Fisheries agreements (e.g., FAO Code for Responsible Fisheries; 1995 UN Agreement on Straddling Fish Stocks and Highly Migratory Fish Stocks; Kyoto Declaration on Food Security);
- Agreements to control maritime pollution (1972 London Dumping Convention; MARPOL 73/78);
- Agreements to control land-based sources of pollution of the marine environment (1995 Global Program of Action for the Protection of the Marine Environment from Land-based Sources of Pollution);
- Agreements to protect marine biodiversity (Jakarta Mandate on Coastal and Marine Biodiversity of the 1992 Convention on Biodiversity; SPAW Protocol).

5.48 In addition to the above, several regional agreements and treaties such as the Cartagena Convention for Wider Caribbean, the Inter-American Sea Turtle Protection Agreement, and the Rio de la Plata Treaty (Tratado del Río de la Plata y su Frente Marítimo) also provide guidance on the sustainable

use of coastal and marine environments. These agreements along with several bi-lateral treaties are designed to implement the core provisions of UNCLOS for the protection of the marine environment. They also provide useful frameworks for intra-regional cooperation or resolving transnational disputes over resources. Many of the Bank's member countries are signatories of these agreements and some have ratified them. However, few have the resources or have taken the steps to introduce the necessary policy and regulatory changes at the national level to ensure implementation of these agreements. In many instances, awareness of these agreements is non-existent even within the line agencies which are expected to implement them. A concerted effort of dissemination is needed if these international agreements are to achieve their objectives. In its latest review of progress in the implementation of Agenda 21, the Commission on Sustainable Development called on the international community to assign higher priority to coastal and marine areas at the regional, national and international levels (CSD, 1996).

5.49 The Bank recognizes the need to move forward with the implementation of international and regional maritime agreements, as part of the Region's shared responsibility to protect the world's oceans. Implementation is more likely to occur when a critical mass of countries agree to incorporate the higher, more sustainable standards of performance in their national legislation. The Bank can play a catalytic role in this process by incorporating the spirit of these maritime agreements into own programming and by supporting regional-level studies of progress towards implementation. The Bank will explore opportunities for strategic partnerships with regional entities such as IOCARIBE and OLDEPESCA for example in promoting concerted regional-level implementation of international maritime agreements. Priority will be given to marine systems shared by two or more jurisdictions where cross-border arrangements are needed to develop or manage resources and restore marine environmental quality.

Priority Themes for the International Waters Focal Area of the Global Environment Facility (GEF)

- Control of land-based sources of pollution that degrade international waters ;
- Prevention and control of land degradation ;
- Prevention of critical habitat degradation ;
- Control of unsustainable use of marine living and non-living resources ;
- Control of ship-based sources of pollution.

5.50 In recent years, bilateral financing institutions have expanded their natural resources management assistance to encompass coastal and marine resources in Latin America and the Caribbean. For example, the US Agency for International Development (USAID), DANIDA, NORAD and the European Community are supporting coastal management initiatives in Central America. The Bank intends to continue coordinating closely with these institutions with the specific objectives of: (a) identifying opportunities where funds can be leveraged as additional incentives for integrated coastal management; (b) ensuring consistency in effort towards resolving the Region's priority coastal issues; and (c) making most efficient use of resources. In this regard, the Bank will also work with its borrowing member countries to identify project opportunities (or project components) eligible for financing through the "*international waters*" focal area of the Global Environment Facility (GEF) (see Box). In addition, the Bank will work with GEF implementing agencies in confirming regional or bilateral priorities and identifying potential projects which could be administered by the IDB.

5.51 Although aimed primarily at terrestrial biodiversity issues, regional and National Environmental Funds are another potential source of financing for coastal and marine biodiversity. The Bank will work with existing funds to ensure that the eligibility criteria and proposal review procedures are sufficiently flexible to encompass coastal and marine issues.

5.52 Maritime industry associations are another potential source of financing for coastal management initiatives — one which has not been explored to date either by the Bank or its borrowing member countries. Experience in the United States, Asia and Europe indicate that shipping and maritime insurance companies, regional tourism organizations and port associations have strong incentives to support improvements that improve maritime safety, control maritime pollution and generally reduce costs associated with deteriorating conditions in coastal and marine areas. The Bank will explore opportunities and potential mechanisms for increasing industry participation in financing coastal management.

VI. STRATEGY IMPLEMENTATION

6.1 Instruments for Mainstreaming

6.1 By implementing the strategy, the Bank intends to gradually incorporate a more integrated approach to its decisions concerning investments in coastal and marine areas. What will this mean for Bank activities? In the first instance, it will mean gaining an institution-wide awareness of where investment decisions can affect the sustainable development of coastal and marine areas. It will also require a sustained effort in building an understanding of the elements of innovation presented earlier in this document throughout various Bank Departments.

6.2 There are excellent opportunities to include coastal management considerations using the following Bank instruments:

- **Regional and Country Programming**: In its programming exercises and policy discussions with borrowing member countries and at the regional level, the Bank will need to assess the relevance of coastal and marine resources management for sustainable economic development. Sector studies can be used to examine the relationship between policy reforms in marine fisheries and mariculture, tourism or other coastal-dependent sectors and the status of the coastal zone. The Bank will have to gauge the readiness of governments to consider institutional reform for integrated coastal management or local coastal management initiatives. Special attention should be directed at those countries where coastal-dependent sectors account for significant proportions of foreign revenues for example or GDP. Even where the conditions for institutional reform are absent, the Bank may still support gradual change by promoting the creation of regional networks and other regional outreach activities. In the long-term, the Bank will increasingly refer to a country's state of the coast as an indicator of sustainable development.

- **Financing Instruments:** The Bank has at its disposal a variety of instruments to finance operations for the management and development of coastal and marine resources. For example, the Bank can continue to support coastal management initiatives through **public sector investment loans for tourism and port rehabilitation** (i.e., promoting the practice "enhanced sectoral management"). Investments for the expansion of coastal transportation corridors or for integrated rural development in coastal areas can also include coastal management components where such components can help mitigate the indirect land use impacts of infrastructure development in coastal rural areas. The Bank will also continue to finance **public sector loans for integrated coastal management** upon request, with care given to factors such as institutional leadership, capacity and ownership. Similar opportunities for financing coastal management are available through the Bank's Private Sector Department (PRI) and the Inter-American Development Corporation (IIC) which provide loans directly to the private sector for large-scale infrastructure (PRI) and for small and medium enterprises in all economic sectors (IIC).

- There are opportunities for promoting strategic partnerships for coastal management by using the various **Technical Cooperations Funds** administered by the Bank. In this regard, the Bank will explore the possibility of supporting involvement of marine science institutes, specialized organizations and centers of excellence in Europe, Japan, Canada and the US as a means of strengthening professional networks for coastal and marine resources management. The Multilateral Investment Fund (MIF) offers complementary opportunities for financing initiatives aimed at strengthening industry associations and promoting micro-enterprises in sectors such as ecotourism, fisheries and mari-

culture, port administration and maritime navigation. Where consistent with other criteria, MIF support should be used to promote application of good practices by the private sector (i.e., through training), sustainable production by microenterprises, and the transfer of clean technology in coastal dependent sectors.

- **Project Analysis**: Changes in the way public sector loans in tourism, maritime transport, fisheries management, marine pollution control and other investments in the coastal zone are analyzed to take into account competing uses of coastal resources, the need to internalize environmental costs (including those associated with cumulative impacts), and the normative role of government. The Bank will support improvements in project analysis methods to address these changing circumstances. More thorough documentation of economic benefits and costs of existing coastal management loans will also play a critical role in improving project analysis methodologies.

- **Environmental and Social Impact Review**: All Bank projects are reviewed for their potential environmental and social impact. Modified review procedures were introduced in 1997 with the creation of a Committee for Environmental and Social Impact (CESI) and with an intended shift towards a strategic approach to environmental quality enhancement. This updated internal review process offers an unprecedented opportunity to: (a) require that national priorities for coastal and marine resources be examined either as part of country papers or environmental strategies; (b) monitor consistency between coastal infrastructure investments and the main features of coastal management, including increased emphasis on regional and land use planning as preventive measures; (c) address in a more systematic manner the indirect impacts of Bank-financed investments on a country's coastal zone; (d) maintain a consistent focus on the special character of islands for sustainable development; and (e) begin to examine cost-effective techniques for monitoring the cumulative impacts of coastal projects in priority areas of the region. Special attention needs to be directed at the issue of compliance with conditions included in EIAs to prevent or mitigate environmental damage in coastal areas.

- **Public Disclosure Procedures**: These procedures promote transparency in the project cycle and public dissemination of information on operations financed by the Bank. The procedures also include requirements for consultation with stakeholders during the project review process. Under the right circumstances, application of these procedures can help build ownership of programs. They can also promote the resolution of inter-sectoral conflicts which is a mainstay of coastal management.

- **Project Management and Evaluation**: As with other sectors, coastal management projects need to be managed with flexibility to adapt to emerging issues and social priorities. The flexibility is also needed to accommodate the evolution which has been a key feature in successful programs. But flexibility cannot mean an absence of targets or unclear goals. Instead, projects can be managed with flexibility when the desired results are clear, using quanitifiable indicators to guide project management and supervision.

6.2 Linking to other Bank Strategies and Policies

6.3 This strategy serves as a complement to other Bank policies and strategies in natural resources management and environment. It lays the foundation for the replacement of the Bank's fisheries policy with a more integrated policy for the management of living marine resources. It is designed to work in concert with the Bank strategy for integrated water resources management and integrated rural development currently under preparation. Its objectives, principles and elements of innovation should also be taken into consideration in re-examining the Bank's existing environment policy.

6.3 Initial Support for Implementation

6.4 Implementation of the strategy is a long-term endeavour, one which must follow the pace of reforms for sustainable development within the Region. It is also a responsibility that has to be shared among many Departments of the Bank, its Country Offices and various committees. In this context, the Bank's own limitations in capacity will determine the pace at which innovation can be introduced at least until sufficient learning has taken place internally. Officially declared as the International Year of the Oceans by the United Nations, 1998 offers an unprecedented opportunity to draw attention on ocean related priorities for the Region both within and outside the Bank while also providing momentum for implementing the directions of the strategy.

6.5 To help maintain focus on the strategy's objectives, a set of immediate actions are contemplated for 1998-99. These include a combination of research, regional and national initiatives, investment loans selected as demonstrations, networking and cooperative agreements, training and outreach. These are briefly reviewed below.

- **Policy Research:** The following are strategy-related studies initiated in 1997 or planned for 1998: (a) application of conflict prevention and resolution techniques for coastal management with case studies in Honduras and Nicaragua; (b) improving economic analysis approaches for public sector investments in sustainable tourism; (c) the application of municipal land use planning for coastal management in Latin America and the Caribbean; (d) economic analysis of fisheries impacts of El Niño events; (e) review of the long term impact of sanitation projects on marine water quality; and (f) assessment of sub-regional institutions (e.g. Permanent Commission of the South Pacific, Frente Maritimo) and cross-border arrangements for ocean management .

- **Regional Initiatives**: The following regional technical cooperations directly related to recommendations in the strategy are planned for approval in 1997-98: (a) Support for the implementation of international fisheries management agreements. This technical cooperation will include research and consultation towards the definition of quantifiable indicators for sustainable fisheries and a study of the effect of international trade on the sustainability of production; (b) Trinational alliance for integrated coastal management of the Gulf of Honduras, Central America; (c) Regional network for estuarine management in Latin America.

- **National Initiatives for Capacity Building**: The following are national requests received for capacity building in coastal management and related sectors under consideration for 1997-98: ***REGION I***: Local Coastal Management Initiative for Tamandare-Paripuera, Brazil; ***REGION II***: Capacity Building for Coastal Management in Haiti; Coastal Management in El Salvador; Technical Assistance for Maritime Surveillance and Enforcement in Costa Rica; ***REGION III***: Capacity Building for Shorezone Management in Guyana.

- **Loans in the Pipeline**: The following investment loans in integrated coastal management or coastal-dependent sectors are under consideration for 1997-98 and will serve as case studies to examine the operational implications of the strategy: ***REGION I***: Suape Port Expansion Program, Brazil; ***REGION II:*** Panama Tourism Support Program; El Salvador Coastal Management Program; Costa Rica Protected Area Program; Haiti Environmental Management Program; ***REGION III***: Barbados Coastal Conservation (Phase II); Galapagos Environmental Management Program.

- **Dissemination and Outreach**: Continuing a consultation process started in 1996, a series of presentations are planned in the Region as part of major conferences and events many of which are linked to the 1998 International Year of the Oceans and EXPO '98 in Lisbon where the

central theme will be oceans. Seminars are also being planned to discuss the strategy and its implementation with regional and international NGOs in 1998. General public outreach efforts will be continued using the Bank's established media products in cooperation with the Department of External Relations. Periodic updates on activities and implementation of the strategy will appear on the SDS/ENV web homepage as well as be submitted to electronic newsletters in the Region.

- **Training of Bank Personnel:** Since this is a relatively new area for the environmental staff of the Bank, efforts will be directed at building capacity within the Bank through short-term training, technical notes, and improving access to regional information tools for coastal and marine resources management in cooperation with the Bank's Office of Learning. This will include the preparation of a training module in coastal and marine resources management adapted to the specific needs of Country Office staff overseeing execution of projects in coastal management, tourism, ports and other coastal infrastructure. As part of internal capacity building, model projects will be selected for documenting lessons learned and success in execution both in integrated coastal management and coastal-dependent sectors.

- **Networking**: SDS/ENV will investigate opportunities for new agreements with international and regional institutions with demonstrated expertise in integrated coastal management and related sectors. Specialized directories and data bases will be developed for use throughout the Bank to reinforce institutional linkages with existing coastal and marine networks for purposes such as peer review, consultation, and technical assistance.

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ANNEX I
APPROVED INTEGRATED COASTAL MANAGEMENT OPERATIONS 1993-1997

COUNTRY	PROJECT TITLE	AMOUNT (TOTAL)	TYPE
BRAZIL	Community-based marine conservation program for the Northeast	$740,000	Non-reimbursable technical cooperation
BRAZIL	Financial sustainability plan for Abrolhos National Marine Park, Bahia	$150,000	Non-reimbursable technical cooperation
BRAZIL	Coastal Management in Tamandare	$1,750,000	Non-reimbursable technical cooperation
BARBADOS	Coastal Conservation Program (Phase I)	$4,500,000	Reimbursable technical co-operation
COLOMBIA	National Environmental Program (Cienaga Grande Component)	N/A	Loan
DOMINICAN REPUBLIC	Parque del Este: Marine Rapid ecological assessment	$30,000	Non-reimbursable technical cooperation
ECUADOR	Coastal Resources Management Program	$16,500,000	Loan
ECUADOR	Galapagos Environmental Management Program: Feasibility study	$660,000	Non-reimbursable technical cooperation
GUYANA	Shorezone Management Program: Feasibility study	$700,000	Non-reimbursable technical cooperation
HAITI	Coastal Marine Protection	$450,000	Non-reimbursable technical cooperation
HONDURAS	Bay Islands Environmental Management Project	$23,900,000	Loan
TRINIDAD AND TOBAGO	Tourism Support Program (Tobago Reef and Trinidad North Coast Components)	$1,500,000	Loan and technical cooperation
LAC REGIONAL	International Coral Reef Congress in Panama	$300,000	Non-reimbursable technical cooperation
CARIBBEAN REGIONAL	Caribbean information system for coastal and marine resources	$1,361,000	Non-reimbursable technical cooperation
REGIONAL	Implementation of Fisheries Agreements	$200,000	Non-reimbursable technical cooperation
REGIONAL	Coastal Zone Management & Environmental Conflicts	$75,000	Non-reimbursable technical cooperation

COASTAL MANAGEMENT RELATED PROJECTS IN THE PIPELINE 1997-1999

COUNTRY	PROJECT TITLE	AMOUNT (TOTAL)	TYPE
BARBADOS	Coastal Zone Management Program - Phase II	$21,000,000	Loan
BARBADOS	Reform of the Tourism Sector	$20,000,000	Loan
BARBADOS	Port Rehabilitation and Reform	$18,500,000	Loan
BRAZIL	Suape Pernambuco Port	$86,000,000	Loan
BRAZIL	Nobara-Santos-Guaruja Port	$40,000,000	Loan
BRAZIL	Sepetiba Port Project	$150,000,000	Loan
BRAZIL	Support Fishing in Alagoas State	$750,000	Non-reimbursable technical cooperation
COSTA RICA	National Parks and Ecotourism Management Program	$25,000,000	Loan
ECUADOR	Environmental Management Galapagos Islands	$15,000,000	Loan
GUYANA	Coastal Management Program	$15,000,000	Loan
PANAMA	Support to the Tourism Sector	$3,500,000	Reimbursable technical cooperation
REGIONAL	Integrated Management of the Gulf of Honduras	$2,000,000	Non-reimbursable technical cooperation
REGIONAL	Estuarine Management in MERCOSUR	$800,000	Non-reimbursable technical cooperation
REGIONAL	Travel & Tourism Industry in MERCOSUR	$1,240,000	Non-reimbursable technical cooperation
TRINIDAD AND TOBAGO	Tourism Development Program	$30,000,000	Loan