

Oceans and Green Economy

The importance of Coastal Ecosystem and Resources

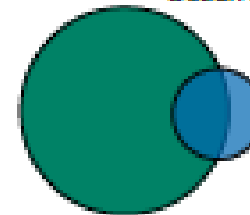
State of the U.S. Ocean and Coastal Economies

Ocean Sector	Ocean Industry
Construction	<i>Marine Related Construction</i>
Living Resources	Fish Hatcheries & Aquaculture
	Fishing
	Seafood Markets
	Seafood Processing
Minerals	<i>Limestone, Sand & Gravel</i>
	<i>Oil & Gas Exploration and Production</i>
Ship & Boat Building	Boat Building & Repair
	Ship Building & Repair
Tourism & Recreation	<i>Amusement and Recreation Services</i>
	<i>Boat Dealers</i>
	<i>Eating & Drinking Places</i>
	<i>Hotels & Lodging Places</i>
	<i>Marinas</i>
	<i>Recreational Vehicle Parks & Campsites</i>
	<i>Scenic Water Tours</i>
	<i>Sporting Goods Retailers</i>
Transportation	Deep Sea Freight Transportation
	Marine Passenger Transportation
	Marine Transportation Services
	Search and Navigation Equipment
	Warehousing

The Coastal and Ocean Economies Are Not the Same

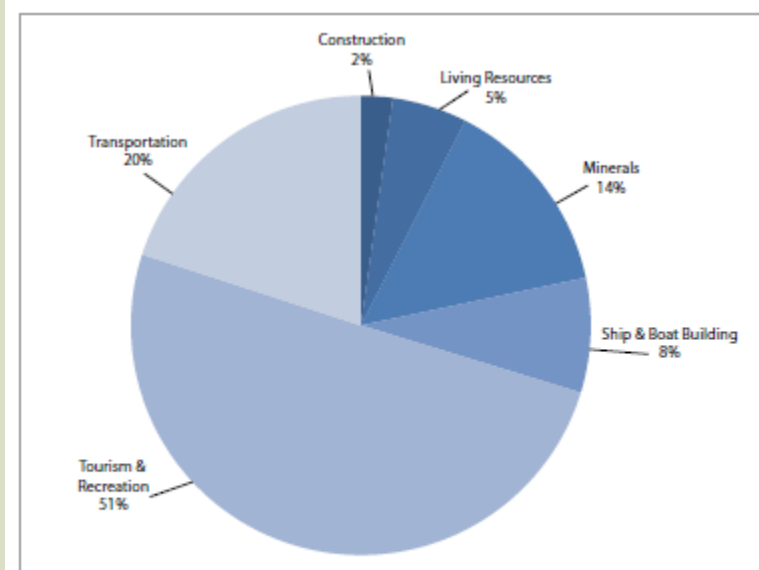
Economic Activity Located Along the Coast

Economic Activity Dependent on Using the Ocean and its Products



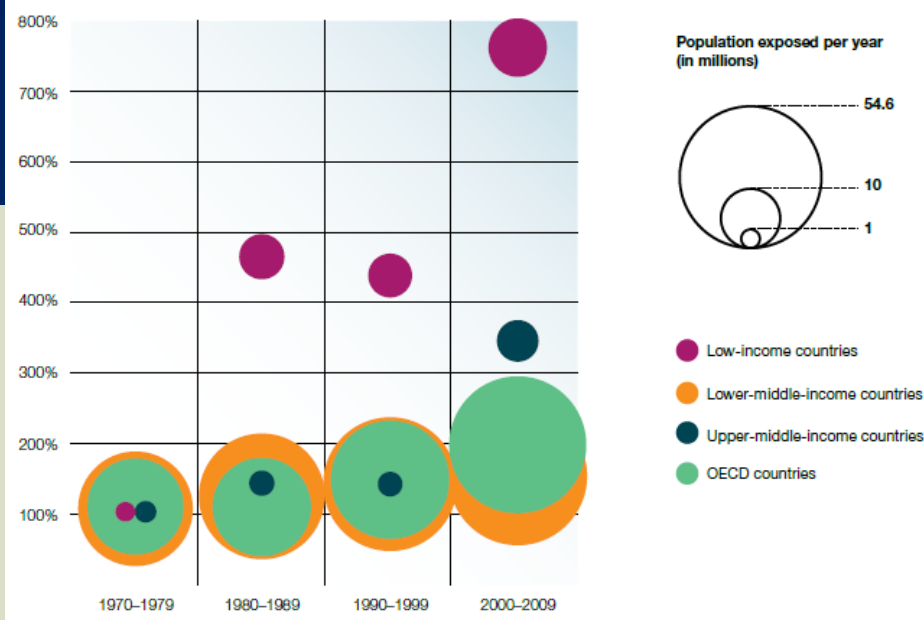
Coastal Economy

Ocean Economy



Note: For data, see Tables 3.3A in Appendix <http://www.OceanEconomics.org/NationalReport>.

Figure 3.2 Ocean sector GDP, 2004



Trend in exposure to tropical cyclones per income region as observed (UNISDR, 2011)

Average annual global GDP exposed to cyclones from observed events (in billion 2000 US\$ (UNISDR, 2011)

Region	1970-1979	1980-1989	1990-1999	2000-2009
East Asia and the Pacific (EAP)	16.0	25.3	39.5	90.2
Latin America and the Caribbean (LAC)	2.3	4.9	3.7	24.3
Middle East and North Africa (MENA)	0	0	0	1.0
OECD countries (OECD)	506.6	665.1	1,247.1	1,455.0
South Asia (SAS)	0.3	2.6	4.2	4.3
Sub-Saharan Africa (SSA)	0.5	1.1	1.3	1.7
World	525.7	699.0	1,295.8	1,576.5

Risk driver	Outcome
<p>Badly planned and managed urban development</p> <p>Disaster risk may be increasing faster in rapidly growing small- and medium-sized urban centres than in either rural areas or larger cities. Compared with small and medium urban centres, large urban centres and megacities generally have stronger risk governance and investment capacities along with slower growth, both of which facilitate planning and urban management.</p>	<p>Latin America</p> <p>In most Latin American countries, the number of disasters reported in small and medium urban areas is increasing at a faster rate than in large urban centres and megacities (Mansilla, 2010).¹⁰ More than 80 percent of all reports of disaster loss in Latin America occur in urban areas. Although each country has a different urban structure, 40–70 percent of all nationally reported disasters occur in urban centres of less than 100,000 inhabitants, and 14–36 percent in small urban centres. This proportion is growing. In Mexico for example, small and medium urban centres accounted for 45.5 percent of total municipal disaster loss reports in the 1980s, and 54 percent since 2000.</p> <p>Colombia</p> <p>In Colombia, municipalities with the most rapidly growing urban population between 1995 and 2005 were also more likely to experience more disasters and have higher numbers of houses damaged (Serje, 2010b).</p>
<p>Ecosystem decline</p> <p>Deforestation in tropical areas is a critical global driver of climate change. It also has important and often negative local feedbacks, leading to increases in mean temperatures and decreases in mean precipitation.</p> <p>Coastal ecosystems, including coral reefs, sea grasses, mangroves and other beach vegetation, play a key role in mitigating impacts of storm surges and coastal flooding. Unfortunately, coastal ecosystems in many areas are in decline, simultaneously increasing disaster risk while threatening the sustainability of local economies.</p>	<p>Peru</p> <p>In the Peruvian Amazon, deforestation at least partly explains why some watersheds experience greater disaster loss and damage as a result of floods and landslides than others. To establish this link, satellite images in selected watersheds of the upper Amazon were analysed to determine the rate of conversion of forest into agricultural land and other uses between 1986 and 1998. Statistical correlations suggest that those watersheds with the highest rates of deforestation are likely to experience greater disaster mortality and housing damage (Serje, 2010b; Tonini et al., 2010). Note, however, that the clear link between deforestation and disaster loss does not mean that deforestation causes the loss directly. Deforestation usually occurs in areas with an expanding agricultural frontier and growing small urban centres, and other factors including increasing hazard severity, exposure and vulnerability, also shape risk.</p>
	<p>Jamaica</p> <p>In Negril, Jamaica, up to 55 metres of beach depth has been lost in some areas as a consequence of the degradation of coral reefs, the removal of sea grass meadows, the loss of mangroves, and increasing urban and agricultural pollution. Coral reefs, for example, provide ecosystem services that include shoreline protection, supply of beach material, tourism revenue and local fishing. In Negril, coral reefs have been degraded in numerous ways: damage inflicted by major storms (such as Hurricane Ivan in 2004); coral bleaching through increased sea temperatures; pollution from sewage and agricultural run-off causing algal growth that suffocates coral; invasive predators such as lion fish; and destructive fishing practices. Mangroves protect beaches and shorelines by dissipating near-shore waves and play a vital role as a breeding habitat for fish and shellfish, but they have been harvested for firewood and building materials. Sea grass meadows are also a significant natural source of beach material but are in decline mainly because of removal by the tourism industry. Other coastal ecosystems suffering degradation include wetlands and forests. This degradation of coastal ecosystems has increased storm surge risk in Negril. A 1-in-50-year hurricane has the potential to produce storm waves of almost 7 metres, affecting around 2,500 local residents, more than 60 hotels and their guests, and water and sanitation infrastructure (UNEP, 2010).</p>

Losing our coastal infrastructure

Coastal Ecosystems: most productive of all ecosystems and most threatened (MEA)

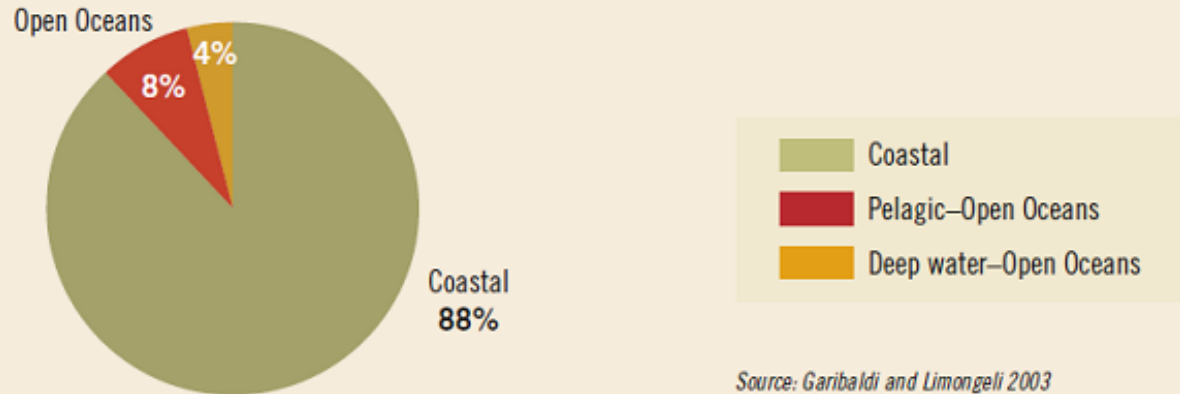
- Mangroves: Losses have declined but still 3-4 times greater than any other forest type. Conversion to aquaculture, agriculture, urban space
- Coral reefs: At least 60% threatened by direct human impacts (overfishing, pollution, sedimentation, coastal development).
- Shellfish reefs: 85% lost, most through overharvest



Paying attention to small scale coastal fisheries

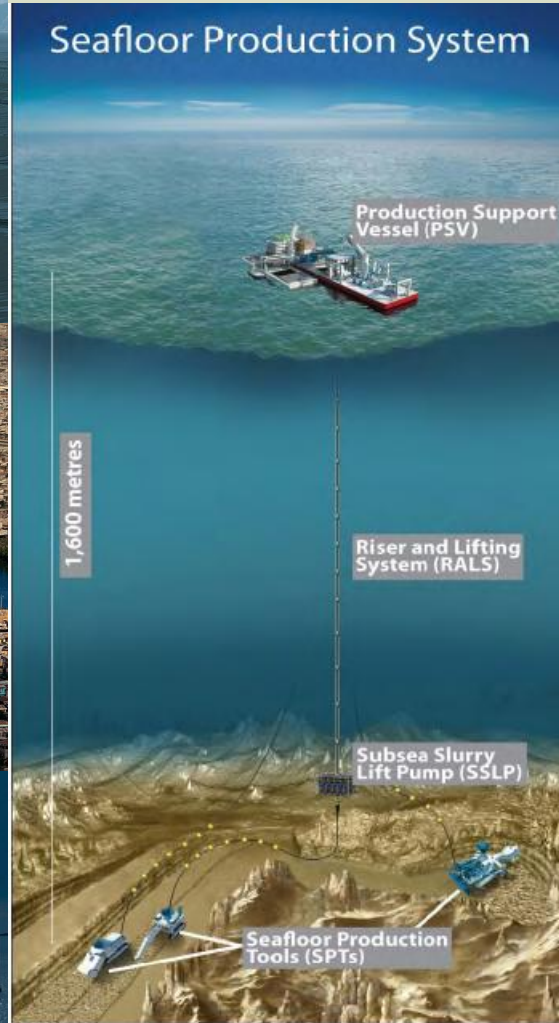
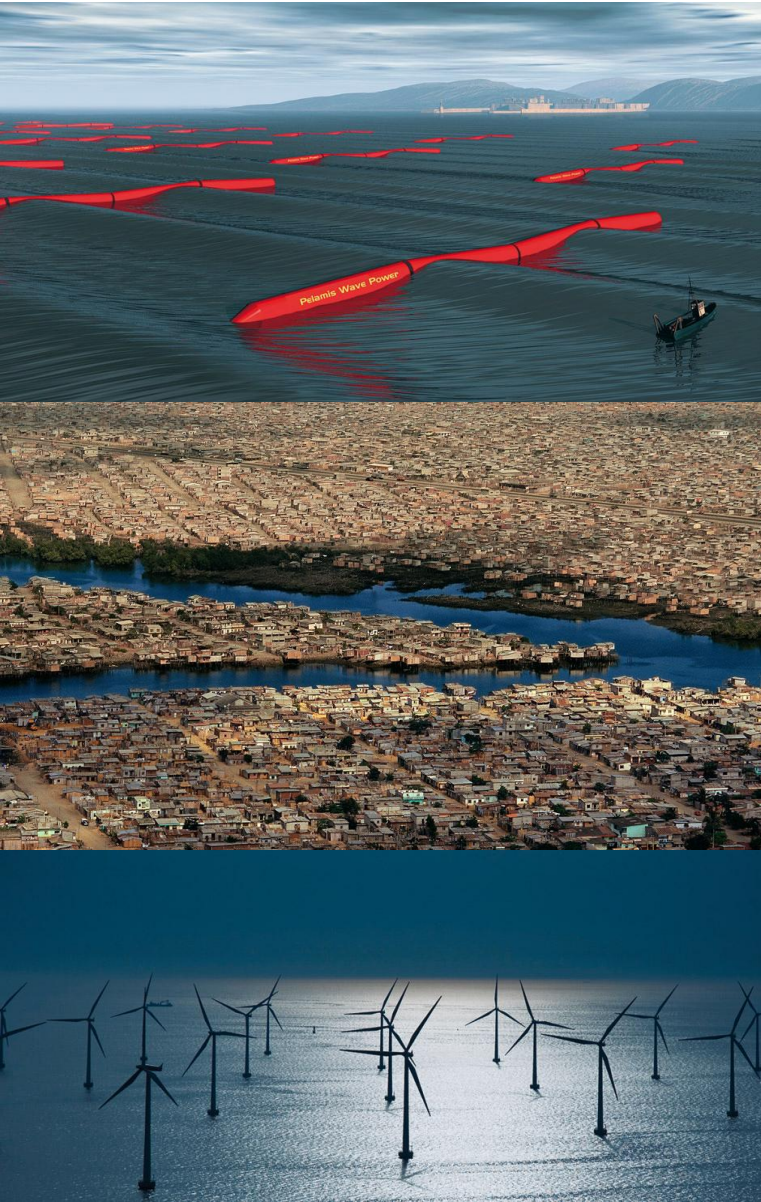
Global Catch: Coastal Waters vs. Open Ocean

Figure 2-3a: Catch by Volume from Coastal Waters (Continental Shelf) vs. Open Oceans, 2002



Source: Garibaldi and Limongeli 2003

Increasing and intensifying ocean uses



Desired outcomes

- Improved commitments for conservation and restoration of coastal ecosystems (zero net loss target?)
- increased adoption and implementation of multi-objective management and marine spatial planning as an enabling tool of the “green economy”
- specific call for improved management of forage and small scale coastal fisheries
- Innovative funding mechanisms : Debt for adaptation swaps targeting coastal ecosystems