

# Toward a Blue Economy: A Promise for Sustainable Growth in the Caribbean



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### Artist Statement

We refer to Mother Earth as our blue planet. Have you ever wondered why? We grow up looking at maps, and our eyes fix on the familiar, six continents full of countries with people, mountains, forests, and rivers. When we spin our desktop globes fast, however, a transformation takes place and the world spins blue!

Our world is indeed a blue planet with over 70 percent of its surface covered by oceans and seas, our global ocean. Much of it is unknown and unexplored, a new frontier for discovery. Yet many things take place on and within the ocean space, ranging from commerce and trade to fishing and leisure.

Our cover art depicts our planet from the perspective of our major oceans, viewing our world bottom up and centering on the Southern Ocean surrounding Antarctica. What emerges is the shape of the world from our ocean-centered view, which shows just how much blue covers Earth.

The many images inside the globe suggest how full our oceans are. Our global ocean is full of life—coral reefs, whales and sea turtles that drive tourism; and fish of all shapes and sizes that feed billions. Yet, as we know, the ocean—and its underlying value—is under threat from climate change and other human-induced threats.

The colors associated with each of the seventeen United Nations Sustainable Development Goals, including the one for oceans, SDG14, surround our ocean-centered globe. Our global ocean will likely be vital in their achievement.

Through the magnifying glass we invite you to take a closer look at our global ocean and in particular at the Caribbean Sea and its transformation toward a blue economy.

**Cover Credit:** Helena Eitel, Pawan Patil, and Ocean Art Hub ([www.oceanarthub.org](http://www.oceanarthub.org))

# Toward a Blue Economy: A Promise for Sustainable Growth in the Caribbean

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# The Growing Ocean Economy

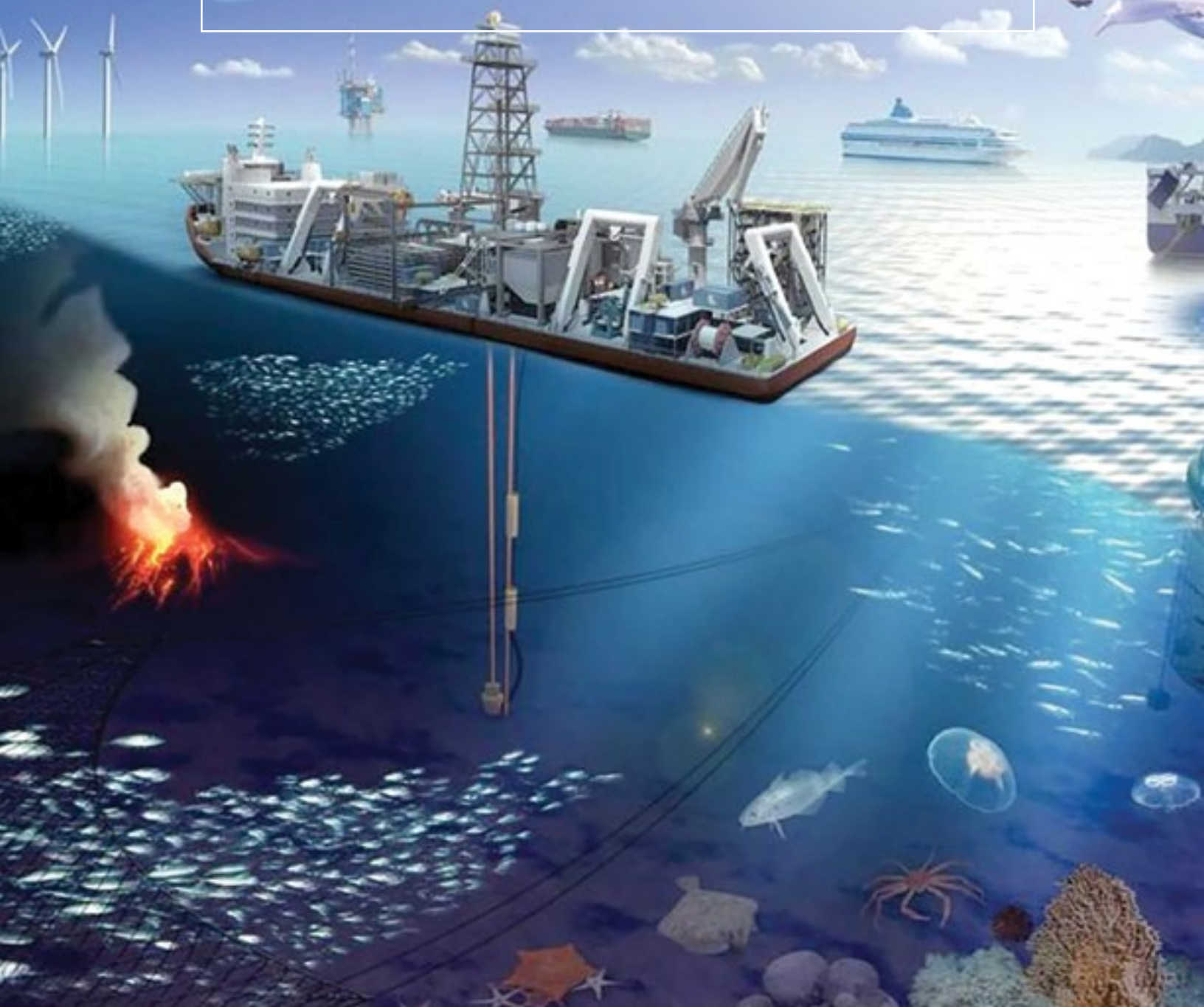


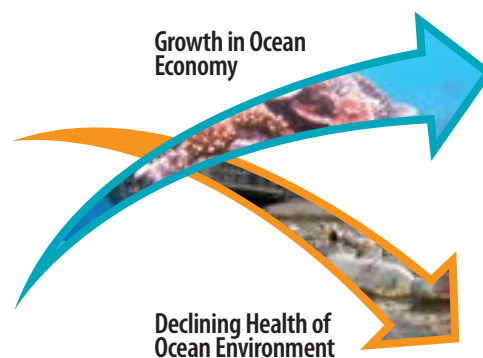


Photo Credit: OECD

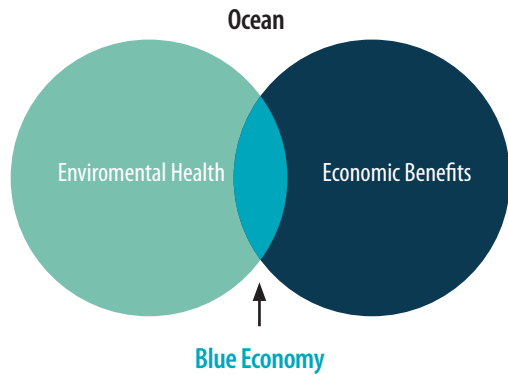
Covering more than two-thirds of the planet, the global ocean is fundamental to human well-being. It provides seafood and other nutrition essential for more than a billion people.<sup>1</sup> Its shipping routes connect countries and communities around the world. Submarine cables that cross its floor carry 90 percent of the electronic traffic on which communications rely. The ocean regulates the earth's climate, producing oxygen that we breathe and absorbing man-made emissions of carbon dioxide. Ecosystems such as coral reefs help protect coastal communities from storm surge and wave damage, while mangroves, sea grasses, and salt marshes are significant natural carbon sinks.<sup>2</sup>

Estimates of the ocean's contribution to the world economy range from US\$1.5 trillion to US\$3 trillion a year, about 3-5 percent of all economic activity in the world.<sup>3</sup> Driven by a growing global population and the need for new sources of growth, the ocean is becoming more and more an economic frontier, a dynamic three-dimensional environment where resources are rich and varied and shift from depths to surface or migrate over long distances.

Traditional economic activity of the ocean is projected to continue to rise—seaborne trade by 3 to 4 percent annually to 2030, global tourism by almost 4 percent annually to 2025.<sup>4</sup> At the same time, the ocean is spawning a host of emerging industries, such as offshore wind, tidal, and wave energy; aquaculture (the “farming” of fish and other seafood); seabed mining; and marine biotechnology, the making of drugs from saltwater life forms. Some of these industries are already quite visible. Turbines can be seen harnessing the winds off growing numbers of coastlines; their capacity has risen from practically nothing twenty years ago to more than 7 gigawatts today, with projections suggesting ten times that volume by 2050.<sup>5</sup> All in all, OECD projections show ocean-based industries as a group outperforming the growth of the global economy in the years ahead, doubling their contribution to GDP by 2030.



1 IPCC 2013, FAO 2014a.  
2 United Nations 2016.  
3 Global Ocean Commission 2014a and Hoegh-Guldberg et al. 2015.  
4 OECD 2016.  
5 Ibid.



But the promise of this growth is accompanied by mounting threats to the ocean environment. Already construction has reshaped coastlines across the globe in recent decades, filling in wetlands and wiping out crucial ecosystems such as mangrove forests and reefs. Growing volumes of plastic and untreated sewage have polluted coastal waters. Some 29 percent of the fish stocks assessed are considered by the Food and Agriculture Organization (FAO) as overfished. Ocean ecosystems that are so vital to the livelihoods of so many people—about 38 percent of the world population now lives within 100 kilometers of saltwater—have been changed in ways that threaten to reduce their benefits to future generations.

Now this threat has given rise to a new concept or framework for action to reduce the risks: the transition of the current ocean economy to a “blue economy” with “blue growth.” This vision foresees even higher numbers of people making their livings from the ocean but in ways that protect its resources and ecological integrity. Economic activities will be balanced to promote a sustainable, healthy ocean that can benefit not only the people directly using it, but indirectly the entire population of the world. If economic activities are managed in this way, the ocean holds the potential to make a much greater contribution to poverty reduction and shared prosperity. The effort will also increase the resilience of low-elevation communities that face the threats of sea-level rise and other impacts of climate change. In essence, the transition to a blue economy involves shifting from the long-standing conventional wisdom of focusing on the costs of protection to instead recognizing the benefits of its ecosystems, incorporated as part of the measures of sustainable growth. The blue economy concept recognizes that while only some activities in the ocean economy depend on the status of the underlying ecological systems (such as fishing), all have the potential to degrade them (such as shipping, off-shore oil production and seabed mining). Therefore, the impact of all ocean economy activities on the underlying ecosystems need to be minimized or else jobs and economic growth depending on the living resources will be put at risk.

### The Caribbean Sea



Source: Transboundary Water Assessment Programme 2015.



# The Caribbean

This report examines how the transition to a blue economy might transform the 37 countries and territories that share the Caribbean Sea.<sup>6</sup> At 2.75 million square kilometers, the Caribbean Sea covers less than 1 percent of the world's ocean area, but it is a crucial resource in the Caribbean, in particular for the 40 million people who inhabit its small island states. Indeed, for some of those countries, the ocean and the national economy are all but indistinguishable.

The hypothesis of this report is that the Caribbean Sea's ecosystems and natural resources form a unique asset for the region's countries and territories, and that understanding and measuring the economic activity that is tied to this "natural capital" asset is essential for sustainably growing the region's economies.

## The Ocean Economy of the Caribbean in 2012: A Snapshot\*

TYPE OF ACTIVITY	OCEAN SERVICE	ECONOMIC SECTOR/ INDUSTRY	INDICATIVE ANNUAL GROSS REVENUES (US\$ BILLIONS IN 2012 U.S. DOLLARS)		
			ISLAND STATES AND TERRITORIES	MAINLAND COUNTRIES	TOTAL
Harvesting of living resources	Seafood	Fisheries	0.37	4.62	5.0
		Aquaculture	0.04	1.86	1.90
	Marine biotechnology	Pharmaceuticals, chemicals, and others	n.a.	n.a.	n.a.
Extraction of nonliving resources, generation of new resources	Minerals, sand, and gravel	Seabed mining	n.a.	n.a.	n.a.
	Energy	Oil and gas	5.64	34.25	39.9
		Renewables (marine)	n.a.	n.a.	n.a.
	Freshwater	Desalination	n.a.	n.a.	0.2
Commerce, tourism, and trade	Transport and trade	Shipping	n.a.	n.a.	311.3
		Port infrastructure and services	n.a.	n.a.	n.a.
	Tourism and recreation	Tourism	47.1	n.a.	47.0
		Coastal development	n.a.	n.a.	n.a.
Indirect contribution to economic activities and environments	Carbon sequestration	Blue carbon (that is, coastal vegetated habitats)	0.02	0.07	0.09
	Coastal protection	Habitat protection, restoration	n.a.	n.a.	1.5*
	Waste disposal for land-based industry	Assimilation of nutrients, solid waste	n.a.	n.a.	n.a.
	Existence of biodiversity	Protection of species, habitats	n.a.	n.a.	n.a.
TOTAL			53.17		407.0

Note: \* Detailed notes on the estimates of the Caribbean ocean economy can be found in the full report.  
 \*\* Average of estimated value over the time period 2000 to 2050 has not been adjusted to 2012 U.S. dollars.\*

<sup>6</sup> The full list is Anguilla, Antigua and Barbuda, Aruba, The Bahamas, Barbados, Belize, Bonaire, British Virgin Islands, Cayman Islands, Colombia, Costa Rica, Cuba, Curaçao, Dominica, the Dominican Republic, Grenada, Guadeloupe, Guatemala, Haiti, Honduras, Jamaica, Martinique, Mexico, Montserrat, Nicaragua, Panama, Puerto Rico, St. Barthelemy, St. Eustatius, St. Kitts and Nevis, St. Lucia, St. Maarten, St. Martin, St. Vincent and the Grenadines, Trinidad and Tobago, U.S. Virgin Islands, and República Bolivariana de Venezuela.

Countries across the eastern Caribbean in particular have suffered a series of setbacks in recent years. These include the erosion of trade preferences and official foreign assistance; turbulence in the business cycles of their most important partners in tourism and foreign direct investment; and recurrent natural disasters, such as Hurricane Ivan in 2004 and the Haiti earthquake of 2010. With greater clarity on how to make the transition towards blue economies, these countries can also gain greater resilience to external shocks.

For now, the region's ocean economy is not well measured or well understood. Best estimates suggest that **Caribbean waters generated revenues of US\$407 billion in 2012, while the area contains just 1 percent of the global ocean.** This consists almost entirely of market-based activities, since the non-market values of many ecosystem services are not easily valued monetarily. These revenues are dominated by the value of ocean cargo shipped through Caribbean waters (considered part of the ocean economy supported by the Caribbean Sea), by tourism, and by oil and gas production. For the island states and territories, gross revenues generated in 2012 directly from the ocean economy totaled about US\$53 billion, mainly from ocean transport, tourism, and oil and gas production.<sup>7</sup> Capture fisheries have declined slightly in recent years, and aquaculture has risen slightly.<sup>8</sup>

Underpinning the region's ocean economy is a three-faceted base of natural capital: living resources such as fish, non-living resources such as minerals, and ecosystems and ecosystem processes in which living and non-living ocean assets interact as a functioning unit, such as tourism around coral reefs. Each region of the world has a different mix of natural capital. Here are the key elements in the Caribbean:

- **Living resources** that become catch for the region's fishing fleets include the spiny lobster, the queen conch, panaeid shrimps, reef fish, deep slope and bank fish, coastal large pelagic species, such as king mackerel, and offshore large pelagic species such as yellowfin tuna.
- **Non-living resources** include significant reserves of oil and gas in waters under the jurisdiction of República Bolivariana de Venezuela, Colombia, and Trinidad and Tobago. A number of countries in the region, including the Bahamas and Barbados, are exploring for oil. Concerning valuable minerals, to date there is little evidence that the Caribbean seabed has significant deposits that could be commercially mined.
- **Ecosystems and ecosystem processes** refer to the highest level of species diversity in the tropical Atlantic. The Caribbean is a global hotspot of marine biodiversity, notably in the 220 kilometer-long MesoAmerican Reef system.<sup>9</sup> An estimated 0.35 percent of the Caribbean's large marine ecosystem is covered by mangroves (shrubs and small trees that thrive in saline or brackish water)<sup>10</sup> and 0.64 percent by coral reefs.<sup>11</sup>

7 World Bank 2016.

8 FAO 2014d.

9 Roberts et al. 2002 and Miloslavich et al. 2010.

10 U.S. Geological Survey.

11 Transboundary Waters Assessment Programme 2015.

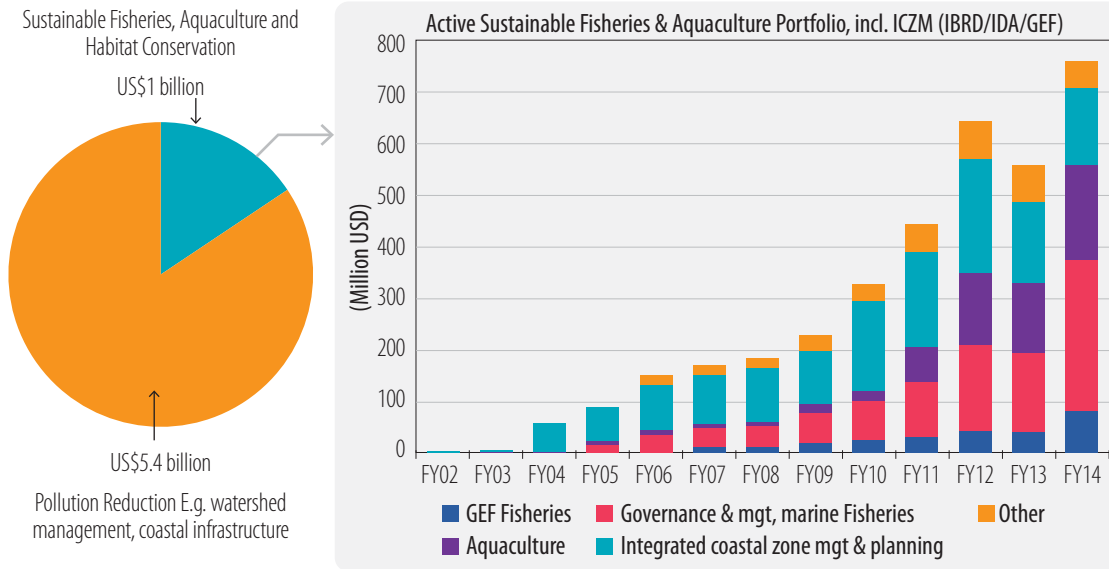




# Threats to the Caribbean Sea's Natural Capital

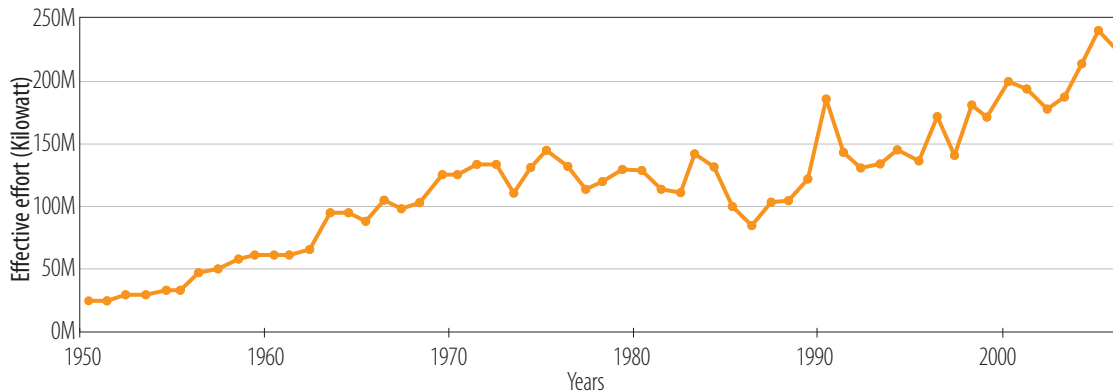
As economic activity in the world's oceans continues to grow, all three of these forms of capital are already heavily drawn down. This has led the world community to respond and set one of the 17 Sustainable Development Goals, SDG 14 for ocean conservation and sustainable use, adopted by the UN General Assembly in September 2015. At the same time, countries and institutions around the world have increased efforts to better safeguard ocean ecosystems. For example, the World Bank increased its active investment portfolio in projects aiming to increase the ocean's natural capital to some US\$6.4 billion by 2015, with support for sustainable fisheries and aquaculture rising from practically zero in 2004 to almost US\$1 billion by 2015. Still, much remains to be done. In 2016 UN Secretary General Ban Ki-moon underlined the continuing threat with a warning that "the oceans' carrying capacity is near or at its limit" and that "urgent action on a global scale" is needed to protect them.<sup>12</sup>

## Growth in the World Bank's Investments in the Ocean's Natural Capital



The Caribbean Sea's natural capital is being changed in particular by three human-driven trends, all of which are occurring in the context of rising greenhouse gas emissions and emerging impacts of climate change, such as ocean acidification and higher sea surface temperatures.

## Fishing effort (Caribbean Sea)



Source: Transboundary Waters Assessment Programme 2015.

12 United Nations 2016.

**Overfishing:** According to the FAO, the catch of the region’s fishing industry declined from 430,000 metric tons in 1998 to below 300,000 in 2010.<sup>13</sup> This reflects not a deliberate wind-down but overexploitation: Even though fishing activity has increased in recent years, yields declined. In addition, fishing has caused extensive damage to corals and depleted certain herbivore species, leading to overgrowth of algae on coral reefs throughout the Caribbean.

**Coastal development:** Coastal population has grown throughout the region in recent decades, with over 41 million people now living within 10 kilometers of the sea, and some 166 million within 100 kilometers.<sup>14</sup> Tourists come to the region largely for sea-related attractions, resulting in mass construction of waterside resorts, marinas, and other visitor facilities. This growth has placed tremendous pressure on coastal ecosystems as construction crews clear natural habitats, fill in wetlands, and dig waterways for better access to the sea. In addition, the number of people visiting reefs and swimming in the water has increased. About 75 percent of the region’s reefs are considered to be at risk from human activity;<sup>15</sup> many of the mangrove forests that once lined most Caribbean coasts have already been devastated.

### Caribbean Mangrove Coverage



Source: Mapping Ocean Wealth <http://oceanwealth.org/>

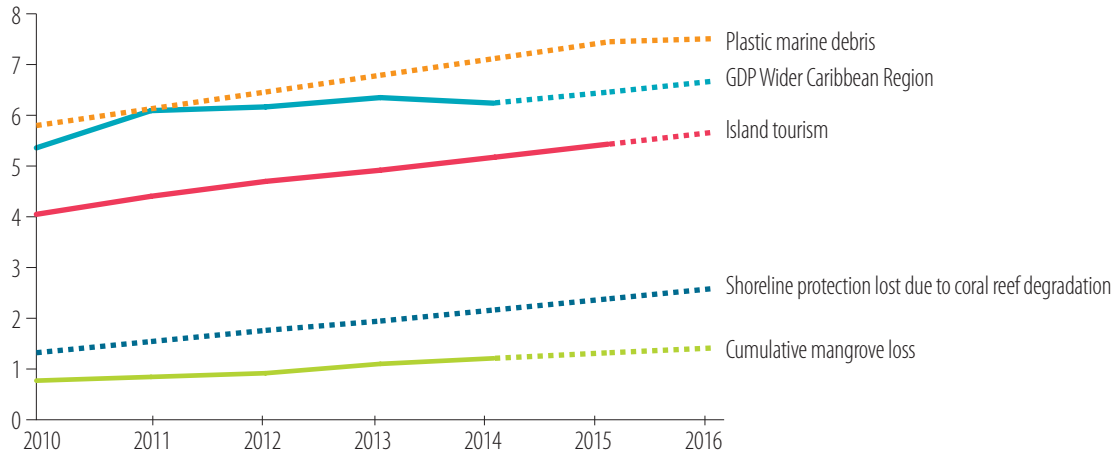
**Pollution:** Agricultural runoff and untreated sewage have done major damage in the region; an estimated 85 percent of wastewater entering the Caribbean Sea is untreated.<sup>16</sup> These flows deliver excess nutrients for algae, which crowd out other life forms to create “dead zones.” Marine trash is another pollutant: An estimated 0.16 to 0.42 million metric tons of plastic entered the sea in 2010. This number is projected to increase gradually to 0.29–0.79 million per year by 2025 as the population grows.<sup>17</sup> Other unwelcome intruders in the region’s waters consist of invasive species such as the Indo-Pacific Lionfish, competing with native species and changing coral reef ecosystems.<sup>18</sup>

Taken together, these trends impose a significant risk on the growth of the region’s ocean economy. The decline of marine natural capital may hold back entire sectors and industries from their full potential. As coastal construction and pollution degrade coral reefs and beaches, international tourists may choose to go elsewhere, taking their spending with them. Depleted fish stocks threaten the incomes of the crews of fishing boats and workers at fish processing plants in the home ports.

<sup>13</sup> Transboundary Waters Assessment Programme 2015.  
<sup>14</sup> Burke and Maidens 2004.  
<sup>15</sup> Ibid.  
<sup>16</sup> UNEP-CEP 2010 and Corbin, Daniel, and Vogeley 2014.  
<sup>17</sup> Jambeck et al. 2015.  
<sup>18</sup> FAO 2011.

The goal, then, is to decouple economic growth from environmental decline.

### Decoupling Economic Growth and Degradation of the Caribbean Sea



Source: Transboundary Waters Assessment Programme 2015.

## Toward a Blue Economy

The concept of a “green economy” and “green growth” has gained wide currency in the world in recent decades. Common policy recommendations for this type of growth focus on better efficiency, new technologies, new markets, and the boosting of investor confidence. The United Nations Environment Programme (UNEP) has featured a number of diverse “green economy success stories” worldwide, including urban planning in Brazil, organic agriculture in Uganda, green infrastructure in rural India, and ecosystem service payments in Ecuador.<sup>19</sup>

As the concept gained prominence before the Rio+20 summit, UNEP and a group of partners proposed to apply it to the ocean, envisaging a “blue economy.” At the summit, this concept emerged in disparate discourses on the human-marine relationship, describing the ocean as natural capital—a “good business” resource and a source of small-scale fishing livelihoods. There followed a number of national strategies and international summits on the blue economy. There is still no single accepted definition of the term, but the Economist Intelligence Unit defined the concept like this: “A sustainable ocean economy emerges when economic activity is in balance with the long-term capacity of ocean ecosystems to support this activity and remain resilient and healthy.”<sup>20</sup>

In the blue economy, ecological systems such as fish stocks, coral reefs, beaches, and mangrove forests are recognized as underlying and sometimes invisible assets which help support the more visible produced capital (machinery and structures) and intangible capital (skills and expertise with which labor is applied).<sup>21</sup> This view does not dismiss the intrinsic values of these ecological systems, nor does it suggest that their economic values are of greater priority. **Rather, the goal in applying the blue economy concept as a lens is to emphasize the connection between the ocean’s ecological systems and the human activity that takes place in the ocean economy.** The concept recognizes that some activities in the ocean economy depend on the underlying ecological systems (the natural capital), while all have the potential to degrade them.

Increasingly, policy frameworks seek to simultaneously expand the natural and the produced capital of the ocean. The blue economy concept essentially provides a lens through which to measure, identify, and encourage opportunities, for a net benefit to the aggregate ocean economy and environment, consistent with principles of social equity and with a priority on poverty reduction.

19 Sukhdev, Stone, and Nuttal 2010.  
 20 Economist Intelligence Unit 2015.  
 21 World Bank 2006, 2012b.

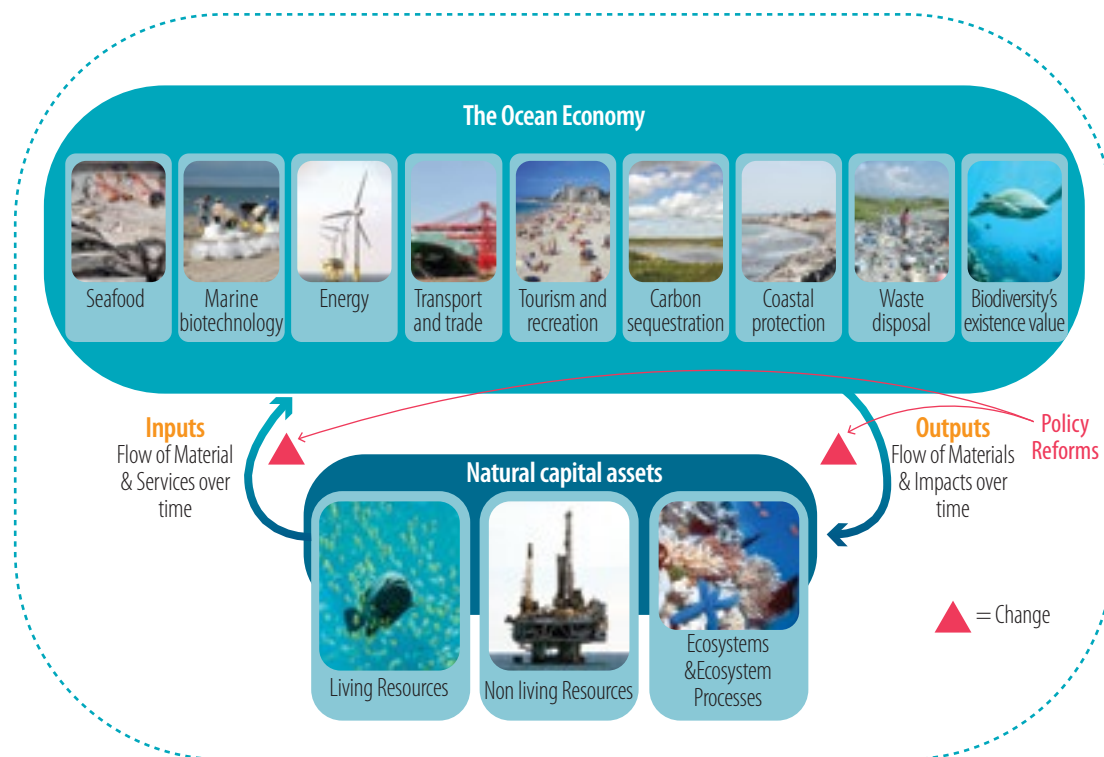


# A Conceptual Framework for the Blue Economy

A conceptual framework explains graphically the main factors to be studied and the presumed relationships among them, creating intellectual “bins” for a collection of discrete events and behaviors.<sup>22</sup>

It illustrates the inputs to the ocean economy from underlying natural capital, the outputs from that economy which affect the levels of this natural capital, and the flow of benefits the economy can sustainably provide. Many of these natural capital assets are renewable and, if properly managed, can yield a sustained flow of benefits. For example, fish stocks are a living resource for the production of seafood in the ocean economy. Ocean economic activities provide outputs on the ecosystems, for example, construction and expansion of ports, marinas, harbors, or shipping channels that alter sea grass beds and mangroves.<sup>23</sup>

## The Blue Economy—A Conceptual Framework



This conceptual framework aims essentially to capture the value of changes in the natural capital assets together with changes in economic activity. It allows measurement of net benefit to society, consistent with notions of an economy where material flows to and from an industry are circular. Such interactions happen horizontally between different sectors of the ocean economy, and between different ecosystems of the ocean; they also happen vertically between the economic sectors and ecosystems, which in aggregate affect the outcomes of the blue economy.

The conceptual framework also helps to analyze specific aspects of the human-ocean relationship, for instance, waste disposal.

The diagram below shows circular interaction, with outputs in the form of waste disposal impacting ecosystems such as coral reefs, beaches, and water quality, which are inputs or factors of production for the tourism sector. While the value of the waste disposal segment has not been quantified, it is well established that the tourism sector depends heavily on healthy ocean ecosystems as an input. Thus investment in responsible waste

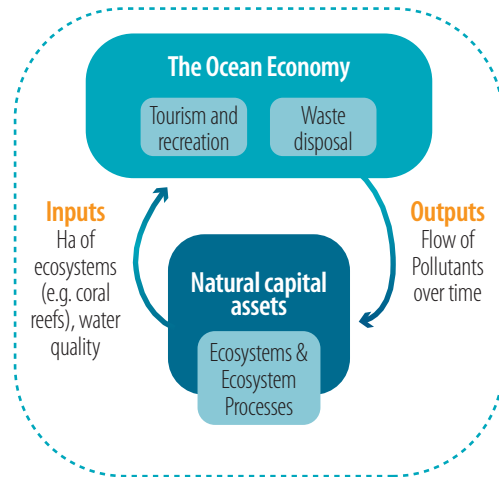
<sup>22</sup> Miles and Huberman 1994.  
<sup>23</sup> OECD 2016.

disposal systems will have multiple benefits for a nation's economy as well as environment: improved sanitation, preservation of ecosystems, and a general safeguarding of the natural capital that enables tourism.

There are many other ways in which smart economic and environmental policies can blend together to create positive outcomes for both people and nature. For example:

- Fish caught through sustainable fishing practices bear an eco-label that commands a price premium at retail stores, allowing fishers to remain in business and recoup the higher cost of their environmentally responsible catch methods.
- Shellfish are grown in aquaculture farms rather than being caught in the wild, enhancing coastal water quality and natural stocks; as valuable seafood, they generate jobs and raise GDP.
- Offshore wind and other marine renewable energy systems employ local people and light their homes while reducing carbon fuel emissions and making minimal impact on the environment.
- Green hotels built on a coastline save the natural life that grows at water's edge and provide lodging that brings in more business from tourists.
- Coastal communities are “fortified” against flooding, not by constructed barriers but by restoration of mangrove forests, an approach that may be three to five times cheaper than breakwaters.

### The Blue Economy Conceptual Framework: Tourism, Waste Disposal, and Ecosystems



Before implementation, each policy like this could be measured as the net present value of the change in the entire blue economy, charging costs to the inputs from or outputs to the natural capital over time. This tool would give policy makers a means of judging whether the economic returns from a proposed step to grow the ocean economy justify the investment costs in a given context (including the changes to natural capital assets), in comparison to business as usual.

Many coastal nations have already introduced a mix of sector- and industry-specific policies to guide economic activities in the ocean. Increasingly countries are working together to develop integrated cross-border policies to safeguard the underlying ecosystems they share, including coordinated actions by government agencies. Building from these experiences, policies that promote a blue economy can increase the net present value of the entire economy in a given ocean space.

Policies for the transition to a blue economy would be developed based on coastal and marine spatial planning, with the oceans envisaged as “development spaces.” This planning is a public process for allocating ocean uses over space and time to achieve specific economic, ecological, and social objectives.<sup>24</sup> In the same way that land zoning regulates land uses, coastal and marine spatial planning can create ocean zoning, with maps categorizing marine space for particular uses. A recent review of spatial planning all over the world noted 59 ocean plans in preparation or completed as of mid-2014. Case studies of five of the plans found a total US\$310 million in new economic value, largely through offshore wind development in the northern United States and Belgium. Among other things, the plans help to reduce conflicts between different ocean users, such as wind energy developers and fishers. For example, fishers gained protection of key fishing grounds from wind farms or other uses.<sup>25</sup>

<sup>24</sup> Ehler and Douvère 2007.  
<sup>25</sup> Blau and Green 2015.

# Raising the Financing Needed for the Transition

Some form of the conceptual framework suggested above could generate valuable tracking metrics and indicators for both economic growth and sustainability of natural capital. These metrics could leverage greater investment in the blue economy by giving greater confidence to potential investors. Modeling of scenarios might suggest the future direction or magnitude of change in the transition towards a blue economy. The net present value of sector output at a given point in time from each of the ocean economy's sectors, together with measures of natural capital assets, could be aggregated into a "Blue Economy Index."

Clear ocean investment principles could help ensure that financing meets both economic and environmental objectives, consistent with internationally accepted principles on equity and social justice, and with a priority on poverty reduction. There is precedent for this: over 70 percent of international project finance debt in emerging markets comes from 83 banks and organizations committed to the Equator Principles, a risk management framework for incorporating environmental and social considerations into finance.<sup>26</sup>

The box that follows lays out ten ocean investment principles for consideration in the region.

## Principles for Investment in a Caribbean Blue Economy

**Principle 1: Sustainable Development/Sustainable Livelihoods.** Marine ecosystems are crucial to delivering goods and services that underpin the livelihoods of millions of people by contributing to food security, poverty eradication, income, employment, health, safety, equity, and political stability. Use of marine resources must be aligned to optimize the well-being of people today and in perpetuity.

**Principle 2: Marine Ecosystem Health.** The diversity, productivity, and core functions of marine ecosystems must be maintained and protected with a goal of recovering natural levels of the natural capital upon which prosperity depends.

**Principle 3: Integrated Ocean Governance.** Planning and managing human activities should proceed in a comprehensive manner that considers all factors necessary for the conservation and sustainable use of marine resources and the shared use of ocean spaces. The objective is a governance system that provides incentives to private and public sector leaders to support a healthy ocean and community well-being.

**Principle 4: Science-based, Precautionary, and Adaptive Decision Making.** Ocean management decisions should be based on the best available information on the natural, social, and economic processes that affect ocean and coastal environments. When reliable information is not available, decision makers should proceed cautiously, seek to develop such knowledge, and refrain from activities that could lead to harmful effects. Adaptive management allows decision makers to respond to new information.

**Principle 5: Duty of Care and Accountability.** All users of the marine environment should act responsibly and be transparent about their actions' impacts on the environment.

**Principle 6: Inclusive and Transparent Decision Making.** Full stakeholder awareness and participation contributes to credible, accepted rules that identify and assign responsibilities appropriately. Making decisions in a transparent and accountable manner will minimize disputes and promote international cooperation. For the blue economy to succeed, partnerships must be forged between government, the private sector, and civil society to ensure co-responsibility for ocean management.

**Principle 7: Ecosystem-Based Management.** There is a need to move away from the current sector- and species-based approaches. The region needs marine spatial planning and networks of marine protected areas, and other area-based management measures to promote biodiversity conservation. These processes must be participatory, accountable, transparent, equitable, and inclusive, so as to meet present and future human needs, including the needs of minorities and the most vulnerable groups in society.

**Principle 8: Ocean Solutions that will Reduce Climate Change Risks and Allow the Development of Climate Change-Related Opportunities.** Sustainable energy is fundamental to the transition to a low-carbon economy and sustainable development globally. It is critical to ensuring progress in areas such as food, water, health, gender equality, and poverty alleviation.

<sup>26</sup> <http://www.equator-principles.com/>

**Principle 9: Sharing of Benefits Derived from the Blue Economy.** The benefits from use of common ocean resources and the responsibilities for their continued health and productivity should be shared by all citizens. Governments should oversee marine resource use with the interests of the whole community and intergenerational equity in mind.

**Principle 10: The Right to Development.** Human development in harmony with the environment is fundamental to the achievement of sustainable development. The value of the resources provided by the oceans must be recognized and opportunities for their economic development optimized to meet society's needs and promote the well-being of coastal communities.

As another example of the role of finance, the *Seychelles* recently highlighted the role that capital can play in the blue transition, with an agreement that allows the country to redirect a portion of debt payments from Paris Club creditors to fund ocean conservation. That work includes creation and management of more than 400,000 square kilometers of new marine protected areas in collaboration with the NatureVest arm of The Nature Conservancy.<sup>27</sup>

In recent years, various small island states around the world have championed the blue economy in a number of international forums, putting forward a position paper for the Summit in Apia in 2014, for example. *Seychelles* has created a Ministry of Finance, Trade and the Blue Economy, and neighboring *Mauritius* has developed a roadmap for the ocean economy in 2013, orienting the country's growth strategy around development of its 2.3 million square kilometers of ocean space.<sup>28</sup> In late 2014 *Indonesia's* President *Joko Widodo* proposed a policy to make his country a "global maritime axis."<sup>29</sup> Similarly, the Commonwealth is helping developing countries work to derive more GDP from ocean sectors and increase marine sources of protein.<sup>30</sup>

## The Caribbean States Join In

Joining in this trend is a growing number of Caribbean states. On April 13, 2015, extensive discussion took place at the inaugural Caribbean Region Dialogue with the G20 Development Working Group, conducted at International Monetary Fund headquarters in Washington, D.C. Attending the dialogue were finance ministers and central bank governors from the region, discussing what a blue economy could contribute toward broader policy objectives such as poverty reduction, food security, energy security, disaster risk reduction, climate change mitigation, and ocean conservation.

Transitioning to a blue economy in the Caribbean will require policies that treat the ocean as a unique "development space," shaped by its ecology. Such policies would be developed through marine spatial planning that generates maps to categorize sea area for particular uses, in some cases translating into ocean zoning. One barrier to development of blue economy policies is the fragmented nature of ocean governance in the Caribbean. More than 30 regional and sub-regional organizations have some role, implementing a diverse collection of multilateral agreements, projects, and national laws.<sup>31</sup>

In efforts toward order and consistency, governments and development partners have launched a number of regional initiatives concerning the Caribbean Sea's natural capital. Since 2009, the UN Development Programme has been implementing the Caribbean Large Marine Ecosystem project to better assess the status of ecological systems and the region's natural capital and support policy recommendations for conservation. In 2013, nine Caribbean states and territories signed the Caribbean Challenge Initiative Leaders Declaration, committing to conserve and manage at least 20 percent of the marine and coastal environment by 2020.<sup>32</sup> They also laid plans for sustainable financing mechanisms for the long term. Coverage of marine protected areas,

27 <http://www.nature.org/newsfeatures/pressreleases/debt-swap-to-finance-marine-conservation-in-the-seychelles.xml>

28 Mauritius Prime Minister's Office 2013.

29 <http://www.thejakartapost.com/news/2014/12/30/maritime-axis-development-boost-ri-s-gdp.html#sthash.ifwdCRI8.dpuf>

30 Roberts 2015.

31 Ibid.

32 Ibid.

meanwhile, has been growing, from just 6,463 square kilometers in 1983 to 143,096 square kilometers in 2014, or some 4 percent of the Caribbean Sea.<sup>33</sup>

At the sub-regional level, members of the Organization of Eastern Caribbean States adopted in 2013 a policy framework for the blue economy in their geographical area. It is known as the Eastern Caribbean Regional Oceans Policy and Action Plan. At the national level, a number of states have introduced policies to support the transition, such as the Bahamas' integrated policy framework that aims for coordinated management of its ocean space across some 34 different government bodies. St. Kitts and Nevis, St. Vincent and the Grenadines, and Antigua and Barbuda have also introduced their own programs.

## Case Study: Grenada



Grenada stands out for a set of policies it introduced in 2014 to develop the blue economy as the pillar of the country's future growth. Indeed, the country is setting an example for how a small island nation can translate aspirations into action.

As with many Caribbean states, Grenada's economy and history have been shaped by its small land mass (just 345 square kilometers and three major islands), limited natural resources, fragile ecosystems, and vulnerability to storms. In 2004 Hurricane Ivan destroyed 90 percent of the properties in Grenada,<sup>34</sup> the country has spent dearly in ensuing years to repair the damage.

As of 2014, Grenada had a population of 106,000, with a gross national income per capita of US\$7,910.<sup>35</sup> Growth has been sluggish in recent years. Unemployment stands at 10 percent, and among youth it is three times that level. The official poverty rate is 38 percent.

Agriculture was historically a core of Grenada's economy, but today it employs only about 11 percent of the labor

force and continues to decline. In the past quarter century, tourism has emerged as the main driver of growth, rising from 15 percent of GDP in 2005 to 26 percent in 2015.<sup>36</sup> In promotional campaigns, the country now styles itself as "Pure Grenada: The Spice of the Caribbean."

With beaches, coral reefs, pristine waters, and an active underwater volcano known as Kick Em Jenny, Grenada has become an important destination for cruise ships. Thousands more visitors fly into its modern international airport. Many visitors come for sunbathing, swimming, diving, sailing, and other water sports. Away from the shorelines, Grenada offers charming historic towns, hill hiking, and a wide variety of restaurants. Bringing in the annual equivalent of about US\$230 million as of 2015, tourism has already created numerous benefits to the island's people, including greater economic stability, improved health care, and better education. While overall economic growth is stuck at moderate rates, the tourism industry is projected to continue expanding.

Even as it struggled in recent years to rebuild after Hurricane Ivan, Grenada had been turning in a green direction. It established plans for an energy system that will be 100% renewable by 2030, using geothermal, waste-to-energy, wind, and solar resources.<sup>37</sup> A fuel levy has put a price on carbon and given the government some much-needed extra revenues.<sup>38</sup> Concerning climate change, Grenada has committed to do its part by reducing its greenhouse emissions by 30 percent of 2010 levels by 2025. It has adopted a "Climate Smart

<sup>33</sup> Transboundary Waters Assessment Programme 2015.

<sup>34</sup> Economic Commission for Latin America and the Caribbean. <http://www.cepal.org/en/headquarters-and-offices/eclac-caribbean>

<sup>35</sup> World Bank 2014.

<sup>36</sup> World Travel and Tourism Council.

<sup>37</sup> Statement by Dr. The Right Honourable Keith Mitchell at plenary meeting of the UN Summit for the Adoption of the Post-2015 Development Agenda.

<sup>38</sup> Ibid.



Agriculture” policy. Arboreal crops such as nutmeg and other spices can sequester carbon and make a vital contribution to soil and watersheds. They are also drought resistant.

Grasping the importance of the ocean in the future prosperity of its people, Grenada in 2014 became the first country in the Organization of Eastern Caribbean States to develop a detailed vision for blue growth as the country’s future. In May that year, its government announced a comprehensive set of blue projects and policies.<sup>39</sup> The goal is to optimize the country’s coastal, marine, and ocean resources to become a world leader and international prototype for blue growth and sustainability. Coordinating this transformation is a National Ocean Governance Committee that includes senior officials from key ministries and authorities.



Much of the program aims to safeguard the natural wonders that draw tourists to Grenada. With coastal development and pollution threatening its reefs, Grenada has committed to set up marine protected areas by 2020 to conserve at least 25 percent of its near-shore marine area and at least 25 percent of its land. Other efforts include community-based ecosystem adaptation, in particular coral restoration, mangrove rehabilitation, and programs to help some citizens into alternative livelihoods. A Blue Growth Coastal Master Plan, bolstered by workshops and stakeholder inputs, lays out the future direction of development.



Photo Credit: Raymond Moldenhauer

The proposed plan provides for a sustainable mix of projects to spread economic activity across the three main islands, including marinas, boutique resorts, hiking trails on Mount Saint Catherine (Grenada’s tallest peak), and retirement communities for local people and expatriates. A new airport on the northern island Carriacou would allow tourists to fly there directly from foreign countries. A “high-tech knowledge center” near St. George’s University and the country’s main airport would court international investors; a “medical tourism” hospital would help foreigners coming to Grenada for treatment of health problems.<sup>40</sup>

<sup>39</sup> <http://nowgrenada.com/2014/05/pm-grenadas-blue-economy-poised-rapid-growth/>  
<sup>40</sup> Grenada Blue Growth Coastal Master Plan. Grenada Blue Growth Coastal Master Plan.





Before it can proceed, each project must be rigorously vetted for its environmental implications and must fit into the plan's larger vision. The government is encouraging investment both through public-private ventures and solely private ones.

**Other elements of the blue initiative target the open seas of Grenada's exclusive economic zone, which at 26,000 square kilometers is a full 75 times larger than the country's land area.**

Special attention is going to commercial fishing in the zone, which is dominated by large pelagic species such as tuna. Fishing has long been a major earner of foreign exchange. Unlike other Eastern Caribbean countries, Grenada has a successful high-value seafood export business, which sells fish to the United States and nearby Martinique, a department of France. Development at the village of Gouyave, headquarters of Grenada's fishing industry, is aimed at strengthening the industry's future prospects. A special insurance program would protect small-scale fishing enterprises against the increasing disaster risks of climate change.



Emerging opportunities for the exclusive economic zone include wind energy, marine biotechnology, ocean-related tourism, and aquaculture. Grenada is part of the Global Blue Growth Network, which strives to better protect the marine environment and produce an additional 60 million tons of fish through sustainable aquaculture by the year 2030.<sup>41</sup>

To help advance the transition in other parts of the region, Grenada also aims to establish a Blue Growth and Oceans Governance Institute. It will house representatives from many of the leading global ocean research centers and promote the country's vision to optimize coastal, marine, and ocean resources internationally. One special point of oceanic research is the underwater volcano, which affords special opportunities for volcanology observations. Concerning international cooperation, Grenada has joined with Dominica and Marshall Islands to promote a new initiative called "We Are the Oceans," inspired by the United Nations Global Goals. The goal is to educate youth across the world about ocean sustainability and make it part of every school's curriculum by 2030.

The potential of Grenada's transition is significant. It will require governance and policies that integrate environmental and economic concerns. Trade-offs will be inevitable where, due to limited space, the simultaneous conduct of all proposed activities is not feasible. Financing will be key. To create a favorable environment for that, Grenada organized Blue Week 2016 to promote investment in island states and least developed countries. The gathering focused on integrating ocean health and wealth and bringing together ocean-related investment into a coherent package of bankable projects to increase the benefits for small island nations.

## Policy Priorities for the Move to a Blue Economy in The Caribbean

The current state of play in the Caribbean suggests a number of interrelated priorities for policies that could carry the region toward a blue economy, guided by ocean principles:

***Develop and strengthen regional and national policies to better integrate the governance framework for the Caribbean Sea.*** The existing policy framework for ocean governance in most developing Caribbean states remains highly balkanized. Conflicts between competing interests within individual countries is likely to increase. Clear, coordinated mechanisms for integrated coastal and ocean management, implemented across relevant sectors such as fisheries, tourism, transport, energy, and environment will be essential to resolve these conflicts. With regard to tools, coastal and marine special planning is particularly important for establishing geographical zones of sea uses within a given area and for protecting ecosystems. The Eastern Caribbean Regional Ocean Policy is a good step toward integrated ocean governance within the region.

***Implement policies for a healthy, resilient, and productive marine environment in the Caribbean.*** Policies should explicitly reflect the principle that both the general economy and the livelihood of coastal communities depend on the health of the oceans. For Caribbean countries, maintaining the coral reefs and associated biodiversity is of particular importance to tourism and fisheries.

***Provide education and raise awareness about the blue economy.*** Many small Caribbean states have chronic gaps in the skills of marine research, planning, and decision making. Professional training programs will need to shift gears to meet this demand. In the population at large, basic education about the ocean's role in future prosperity will raise awareness and create political will for the needed change.

***Ensure maritime surveillance, monitoring, and enforcement.*** In many countries, illegal fishing by neighboring states is a key concern. Small Caribbean states need enhanced capabilities for identifying threats to their maritime space in a timely manner. They will achieve these by sharing and integrating intelligence, surveillance, and navigation systems into a common operating picture. Regional cooperation on these issues will optimize limited resources. For example, satellite-based remote sensing platforms can monitor large areas of ocean in near real time, supported by innovative tracking and analysis tools.

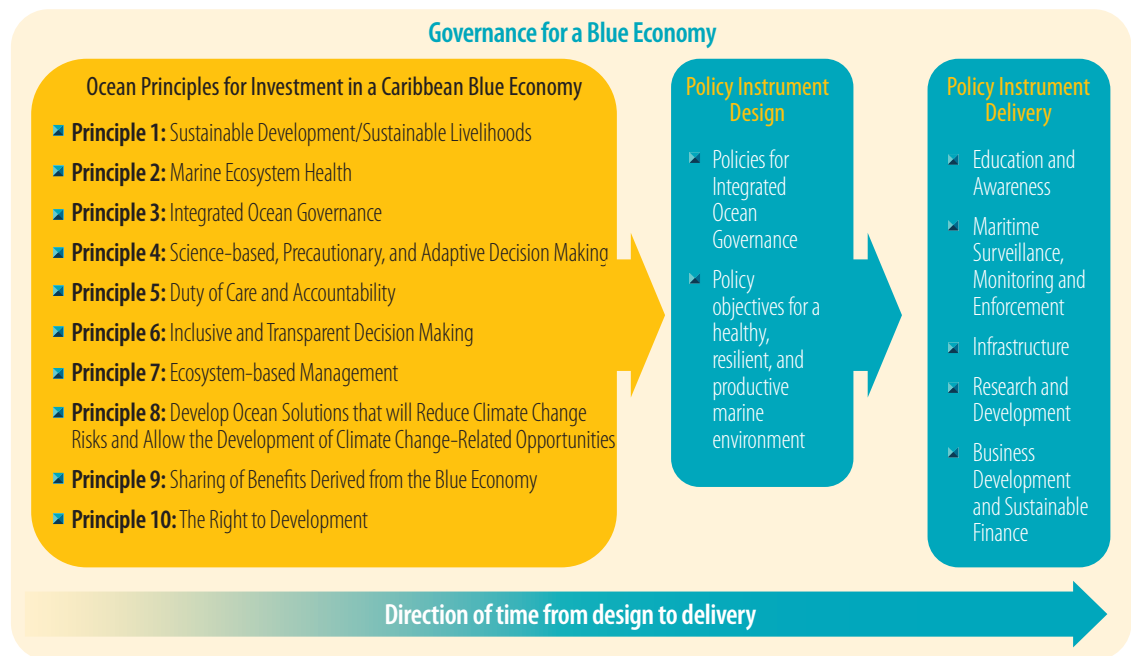
<sup>41</sup> Statement by Dr. The Right Honourable Keith Mitchell at the Interactive Dialogue 4 "Protecting our Planet and Combating Climate Change" Trusteeship Council Chambers on September 27, 2015.

**Build the infrastructure for a blue economy.** Improved coastal and port infrastructure is a critical asset for economic growth and development in Caribbean small states. Once constructed, it must be protected, notably from flooding and sea surges, given its frequent siting near sea level. Fortifying these assets can be expensive; a more affordable approach often involves restoring natural barriers to reduce the hazards of flooding and erosion.

**Support research and development for a blue economy.** R&D supports sustainable economic growth and job creation, as well as informed governance and regulation of the marine sector. At present, the region suffers from a general paucity of data relating to its waters. States would do well to buttress their own data collection and also to access the hydrographic/bathymetric surveys, biological samplings, and environmental characterizations conducted by the numerous international research vessels that cross the Caribbean Sea.

**Support business development and sustainable finance.** The region's countries need policies to promote investment in existing blue economy enterprises and in new ones. In the island states, the greatest potential for value addition and job creation may be in small- and medium-sized enterprises within the blue economy value chains. Finance for start-up, capacity growth, and technology development will be crucial for these firms.

The diagram below demonstrates how these policies could fit together with ocean principles to facilitate change.



To get the policy process started, the region might consider the following approach:

### Proposed Approach to Begin the Transition toward a Caribbean Blue Economy

#### Measure.

- Improve the statistical and methodological base for measuring the scale and performance of the ocean economy.
- Establish natural capital accounts for the Caribbean Sea at the national and regional levels.

#### Manage.

- Create and expand integrated approaches to ocean governance.
- Apply marine spatial planning at the scale of exclusive economic zones.
- Invest in restoration and maintenance of the function and integrity of critical marine ecosystems.
- Build and strengthen the institutional and human capacity to act.

#### Invest.

- Promote ocean principles to guide investment in the blue economy.
- Advance key infrastructure investments.

#### Monitor.

- Continue to enhance knowledge of the Caribbean Sea.
- Expand maritime domain awareness of the Caribbean Sea.
- Track key indicators of the transition to a blue economy.

#### Repeat.

- Keep close track of actions and progress and adjust as needed.

Creating a blue economy in the Caribbean will require major investments of capital and political will and take decades to complete. But sticking with a business-as-usual approach risks the continued decline of a body of water that boasts not only great beauty but mammoth economic potential. The World Bank stands ready to work with governments and other actors to help bring the people of the Caribbean the full benefits of the blue economy.

## Glossary of terms

<p><b>OCEAN ECONOMY</b></p> <ul style="list-style-type: none"> <li>a. Ocean Service</li> <li>b. Economic Sector/ Industry</li> </ul>	<p>The economic activities that take place in the ocean, receive outputs from the ocean, and provide inputs to the ocean (Park and Kildow 2014)</p> <ul style="list-style-type: none"> <li>a. Economic activity of the ocean economy that provides benefit to people</li> <li>b. Specific area or group of companies in the ocean economy</li> </ul>
<p><b>OCEAN'S NATURAL CAPITAL ASSETS</b></p> <ul style="list-style-type: none"> <li>a. Living Resources</li> <li>b. Nonliving Resources</li> <li>c. Ecosystems and Ecosystem Processes</li> </ul>	<p>The total available biophysical stock of natural resources in the ocean, for example, fish stocks, minerals and energy resources, mangrove forests, and so on (Narloch, Kozluk, and Lloyd 2016)</p> <ul style="list-style-type: none"> <li>a. Renewable stocks of natural resources that are harvested for use, such as fisheries</li> <li>b. Nonrenewable stocks of natural resources harvested for use, such as minerals from the seabed</li> <li>c. The interaction between the living and nonliving environment as a functioning unit (for example, coral reef ecosystems, mangrove ecosystems, and others) (MEA 2005)</li> </ul>
<p><b>OCEAN POLICIES</b></p>	<p>The policies that affect the health and wealth of the ocean</p>
<p><b>BLUE ECONOMY</b></p> <ul style="list-style-type: none"> <li>a. Blue Economy Framework</li> <li>b. Blue Economy Indicators</li> <li>c. Blue Growth</li> </ul>	<p>A sustainable ocean economy, where economic activity is in balance with the long-term capacity of ocean ecosystems to support this activity and remain resilient and healthy (Economist Intelligence Unit 2015). This report illustrates how the Caribbean basin can grow its “ocean economy” into a more sustainable “blue economy.”</p> <ul style="list-style-type: none"> <li>a. blue economy conceptual framework</li> <li>b. indicators of ocean sustainability are described in the report, and can be used to measure blue growth.</li> <li>c. Blue growth is the means by which an unsustainable ocean economy can transition towards a more balanced and sustainable one</li> </ul>
<p><b>BLUE ECONOMY POLICY FRAMEWORK</b></p> <ul style="list-style-type: none"> <li>a. Coastal and Marine Spatial Planning</li> </ul>	<p>An operational policy agenda to foster economic growth and development in ocean spaces, while ensuring that the ocean’s natural assets continue to provide the resources and environmental services on which human well-being relies (OECD 2011)</p> <ul style="list-style-type: none"> <li>a. A public process of analyzing and allocating ocean uses over space and time to achieve economic, ecological, and social objectives (Ehler and Douvere 2007)</li> </ul>



