14 LIFE BELOW WATER

GOAL 14
Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Context

For SIDS like Jamaica, the marine environment is of high importance for sustainable development. By contributing to activities like fishing and tourism, our marine resources play a major role in economic life. Pollution, overfishing, and other stresses on our coastal and marine areas impact biodiversity of the ecosystem, livelihoods of individuals and overall quality of the marine environment, constituting serious threats to Sustainable Development. The SDG14 – "Life Below Water" calls attention to these threats and urges appropriate solutions. The significant targets for Goal 14 are summarized in Figure 73.

Significant Goal 14 targets

- Prevent and reduce marine pollution of all kinds
- Sustainably manage and protect marine and coastal ecosystems
- Regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices
- Implementing science-based management plans
- Conserve coastal and marine areas
- Provide access for small-scale artisanal fishers, marine resources and markets

Strategies in Jamaica's 2018 Voluntary National Review (VNR)

- Update and enforce legislation; reduce land-based sources of pollution
- Tackle Illegal, Unreported and Unregulated (IUU) fishing
- Improve data and information to guide the decision-making processes and explore the potential of the Blue Economy to contribute to sustainable development
- Implement plans and policies to effect change and build resiliency addressing the effects of climate change

FIGURE 73: **GOAL 14 TARGETS AND KEY POST-2018 STRATEGIES**

At the national level, sustainable development is implemented within the frameworks of Vision 2030 Jamaica—National Development Plan the MTF 2018–2021, the 2030 Agenda for Sustainable Development and related multilateral environmental agreements. Goal 14 is primarily aligned with the National Development Goal 4 – 'Jamaica has a Healthy Natural Environment'. This prioritizes sustainable management and use of environmental and natural resources, hazard risk reduction and adaptation to climate change, and sustainable urban and rural development as they relate to our coastal and marine resources.

The main threats to Jamaica's coastal and marine resources include climate change impacts along with the problems of pollution; illegal, unregulated and unreported (IUU) fishing. Together these contribute to beach erosion, poor health of our coral reefs and a decline in fish biomass and biodiversity. Since 2018, priority has been given to tackling climate change and IUU fishing and reducing land-based sources of pollution, as well as improving supporting data and information to guide decision-making. Additionally, the blue economy is to be explored and partnerships with stakeholders and regional and international partners pursued.

The review for the period 2018-2022 summarizes key achievements, issues and challenges concerning life under water.

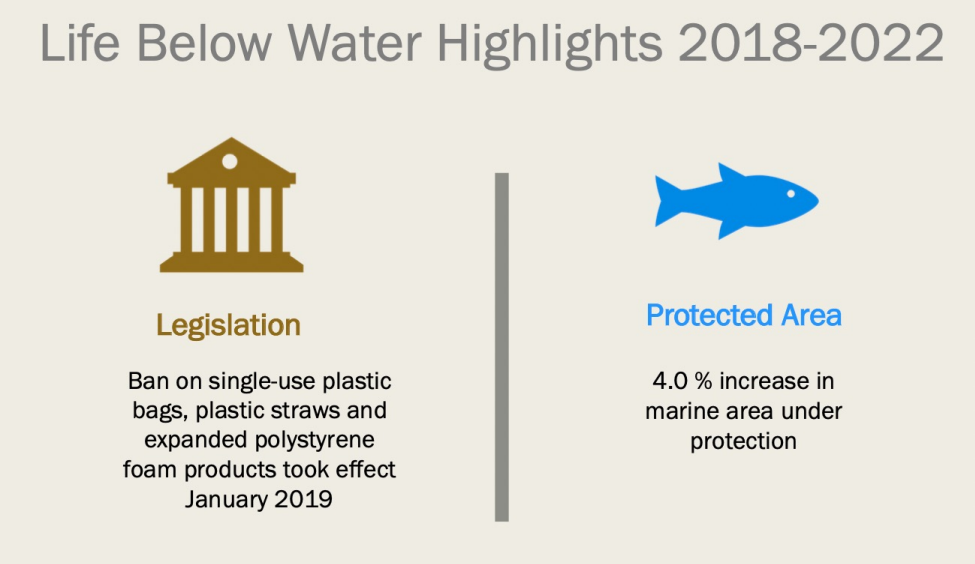

FIGURE 74: **HIGHLIGHTS, LIFE BELOW WATER (2018–2022)**

Discussion

Target 14.1 By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution

Land-based solid waste and nutrient pollution, a consequence of improper waste disposal, low sewer connection and agricultural runoff, is a major threat to the marine ecosystem. Approximately a third of Jamaican households use improper methods of waste disposal. In 2018, the proportion of households that were disposing garbage by formal means was approximately 70.0 per cent[143] while 27.2 per cent disposed of garbage by burning. The remainder dumped directly into gullies/river/sea/pond or buried their garbage.

Jamaica is addressing marine pollution through a broad waste management strategy that includes collaboration between the government and civil society organizations in raising awareness and changing behaviour, e.g., through campaigns like 'Nuh Dutty up Jamaica' as well as recycling and waste management programmes.

143 Formal disposal methods include a public collection system and dumping at a municipal site (Source: Jamaica Survey of Living Conditions (JSLC) 2019)

Legislation banning single-use plastic bags, plastic straws and expanded polystyrene foam products took effect in January 2019[144]. This was implemented in three phases: Phase One banned the manufacture, importation, distribution and use of specific types of single-use plastic bags; Phase Two which commenced in 2020, banned the manufacturing, distribution and use of expanded polystyrene foam products; and Phase Three which applies to 24″ by 24″ single-use plastic bags and disposable drinking straws attached to drink boxes or pouches, took effect in 2021.

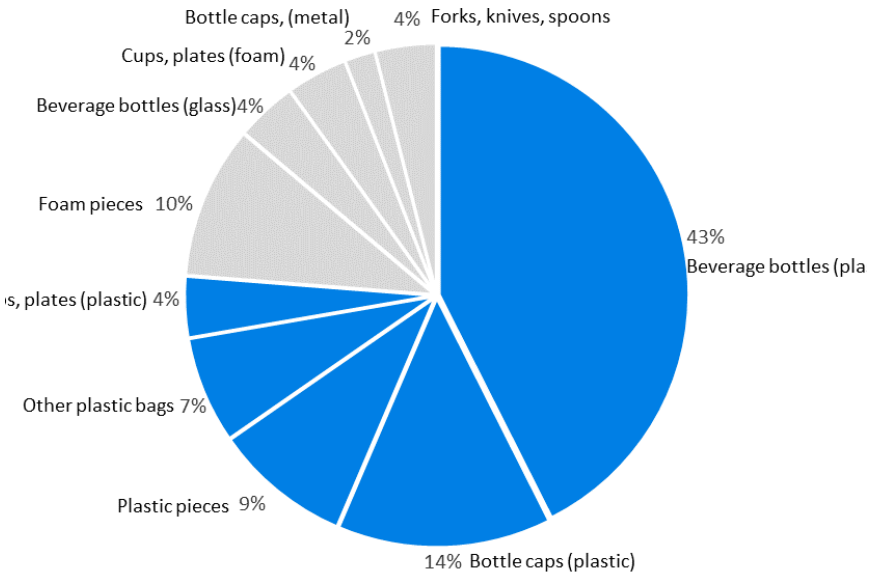

FIGURE 75: **COMPOSITION OF TOP TEN ITEMS COLLECTED IN ICC BEACH CLEAN-UP, 2019**
SOURCE: JAMAICA ENVIRONMENT TRUST (JET)

The implementation of the Plastic Waste Minimization Project by National Environment and Planning Agency (NEPA), (2019-2021), resulted in 15.2 tonnes/33 580 lbs of plastic material being collected as part of a drive to reduce the amount of waste entering the Kingston Harbour. This included the recovery of 5000 pounds of plastic waste in the Supermarket Plastic Recyclables Drop Off Programme.[145] Other key initiatives include the Ocean Clean-up Pilot project in the Kingston Harbour, which is considered Jamaica's highest polluted waterway and NEPA's Adopt-A-Beach Programme.[146]

Plastic marine litter is a longstanding issue. Efforts to cut plastic pollution include legislation, public awareness projects, and public/private partnerships.

Annual International Coastal Clean-up Day (ICC) activities revealed that the volume of plastic beverage bottles declined marginally from 45.0 per cent of the top ten items collected in 2015 to 42.0 per cent in 2019 (ESSJ 2019). Plastic materials continue to dominate the top ten items collected over the years—accounting for almost three-fourths in 2019 (Figure 73). In the 2020 ICC exercise,[147] 42 907 units of the top 10 items were collected from 25 sites (land, underwater, watercraft) along 20.4km of coastline. Plastic bottles remained the number one collected item for a 13th consecutive year.

144 The Natural Resources Conservation (Plastic Packaging Materials Prohibition) Order 2018 and The Trade (Plastic Packaging Materials Prohibition) Order 2018.

145 Under this project, in December 2020, the National Environment and Planning Agency (NEPA) partnered with the Private Sector in the launch of the Supermarket Plastic Recyclables Drop-Off Programme. (Source: NEPA).

146 From notes compiled by the National Environment and Planning Agency (May 2022)

147 The ICC 2020 activities were scaled down to comply with GOJ protocols for public gatherings for the management of the COVID-19 Pandemic

Overall, marine water quality[148] deteriorated in some areas. The proportion of sites that exceeded target levels for nitrates, phosphates, Biological Oxygen Demand (BOD) and faecal coliform, was 100 per cent, 94.8 per cent, 15.7 per cent and 31.8 per cent respectively for 2020. This represented an increase over 2019 for all indicators except BOD, which was reduced by 38.7 per cent (Table 26).

TABLE 26: **INDICATORS OF MARINE WATER QUALITY 2020**

Indicators	Sites Exceeding Standard (% 2019)	Sites Exceeding Standard (% 2020)	% Change
Nitrates	84.6	100.0	18.2
Phosphates	83.4	94.8	13.7
Biological Oxygen Demand	25.6	15.7	-38.7
Faecal Coliform	30.0	31.8	6.0

SOURCE: NATIONAL ENVIRONMENTAL PLANNING AGENCY (NEPA)

Target 14.2 By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans

Beaches

Average beach erosion over the 2015 to 2019 period has been low, at 3.6 per cent, with most beaches increasing in width over the period, from an average width of 24.6 meters in 2015 to 29.8 meters in 2019.[149]For the 2018/2018 monitoring period, one site recorded "chronic erosion'; for 2020/2021 period, that number increased to four sites[150] Interventions proposed in the Coastal and Beach Restoration Guidelines to stop beach erosion have been implemented, including armouring techniques (e.g., seawalls, revetments) or sand-trapping structures (e.g., groynes). Under the GOJ/Adaptation Fund Programme, other interventions include installation of hard engineering structures and bioengineering solutions along the north-eastern coast. Nature-based solutions to complement hard engineering structures include mangrove and coral restoration efforts. Additionally, in 2020, the Beach Monitoring Programme expanded to include four sites in Negril.[151]

148 The indicators of marine water quality are nitrates, phosphates, BOD and Faecal coliform.

149 Economic and Social Survey Jamaica (ESSJ) 2020.

150 Data compiled by NEPA, June 2022.

151 Data compiled by NEPA, June 2022.

Coastal and Marine Resources

Jamaica scored above the world and regional averages in 2 of the 11 areas assessed—Climate Change (65.7) and Pollution Emissions (78.6). The country, however, recorded low scores for the Fisheries (4.7) and Water Resources (3.0) indicators, which is a possible reflection of the continued challenges with issues of overfishing, the percentage of the population connected to sewer systems and the treatment of household wastewater (Source: ESSJ 2020; Environmental Performance Index).[152]

Fisheries remain in a degraded state; for the herbivorous and commercial fish indicators all sites assessed were ranked as "critical". The average herbivorous biomass declined to 542.43 g/100 m^2 in 2020 from 610.07 g/100 m^2 in 2019; in 2020 the average commercial fish abundance fell to 32.99 g/100 m^2 from 64.66 g/100 m^2 in 2019.

Coral Reefs

The country continued to face challenges with maintaining healthy coral reefs. The assessment carried out using the Coral Reef Health Index (CRHI) uses 4 indicators: coral cover, macro-algae cover, herbivorous fish abundance and commercially important fish abundance. In 2020, the results showed an overall average CRHI score of 2.0 (Table 27), a decrease from the previous year's CRHI of 2.2. Sites and location-specific calculations showed that five sites ranked as "fair", five sites ranked as "poor" and twelve sites ranked as "critical".[153] Similar to 2019, none of the reefs were ranked as "good" or "very good".

TABLE 27: **INDICATORS OF MARINE WATER QUALITY 2020 CORAL REEF HEALTH INDEX BY PARISH**

Parish	Number of Sites by Ranking			Total No. of Sites
	Critical	Poor	Fair	
Portland		1		**1**
Kingston	3	1		**4**
St Catherine	1			**1**
St Mary	2	1	2	**5**
St Ann	4	2	1	**7**
St James	1		2	**3**
Hanover	1			**1**
Total	**12**	**5**	**5**	**22**

SOURCE: ECONOMIC AND SOCIAL SURVEY JAMAICA

152 The Environmental Performance Index (EPI) provides a data-driven summary of the state of sustainability around the world. Using 32 performance indicators across 11 issue categories, the EPI ranks 180 countries on environmental health and ecosystem vitality.

153 CRHI: Critical: >1.0-1.8; Poor: >1.9-2.6; Fair: >2.7-3.4; Good: >3.4-4.2; Very Good: >4.3-5.

The Action Plan for the Protection and Restoration of Coral Reefs 2018-2023 has targets for conducting research, mapping and monitoring, reducing pollution and habitat destruction and eventually restoring the coral reefs, as well as keeping the public informed to change potentially damaging behaviour to conservation efforts. There has also been a move to more resilient interventions in recent years such as the use of artificial reefs (and mangrove replanting) undertaken by agencies and academic institutions, such as the Blue Carbon Restoration in Southern Clarendon Project by University of the West Indies Solution of Developing Countries (SODECO).

Target 14.4 By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics

The Promoting Community-Based Climate Resilience in the Fisheries Sector Project aims to enhance climate resilience of the fisheries sector through strengthening policy and regulatory framework and facilitating the transition of fishers to sustainable livelihoods. Under this project, monitoring and surveillance capacities of the National Fisheries Authority were boosted with the commissioning of a fully equipped enforcement vessel, to be used to combat Illegal, Unreported, and Unregulated (IUU) fishing practices within the coastal zone. The project also embarked on several preparatory and analytical studies to support implementation including:

- A Social Assessment of Climate Change Impacts on Gender, Youth and Labour Dynamics in the Fisheries Sector
- A study to identify sub-projects for Climate Resilient Aquaculture, Mariculture, Polyculture & Alternative Livelihoods
- Designs for a climate-resilient tilapia hatchery and fish farm as well as design and specifications for a demonstration mariculture facility were also completed.

The US$4.9 million project, which was officially launched in July 2020, was projected to benefit over 40 000 local fisheries stakeholders. As artisanal fishers represent one of the vulnerable groups in the population, this intervention highlights inclusiveness, contributing to preserving the principle of "leaving no one behind".

Target 14.5.1 Coverage of protected areas in relation to marine areas

Currently, the total coverage of the protected marine area in Jamaica amounts to roughly 1 918 km^2. It is estimated that the coverage of protected marine areas—which is the percentage of designated key marine areas for biodiversity—is roughly 15.0 per cent, which is above the SDG target of 10.0 per cent (2020 SDGs Progress Report). For the 2020/2022 period, Jamaica approved two additional marine protected areas for declaration —Black River Landscape and Pedro Cays and surrounding waters— which will add 4.0 per cent to the protected marine areas of Jamaica (SDG Progress Report 2019/2020). Figure 76 highlights the location of Jamaica's marine protected areas designated by NRCA/NEPA.

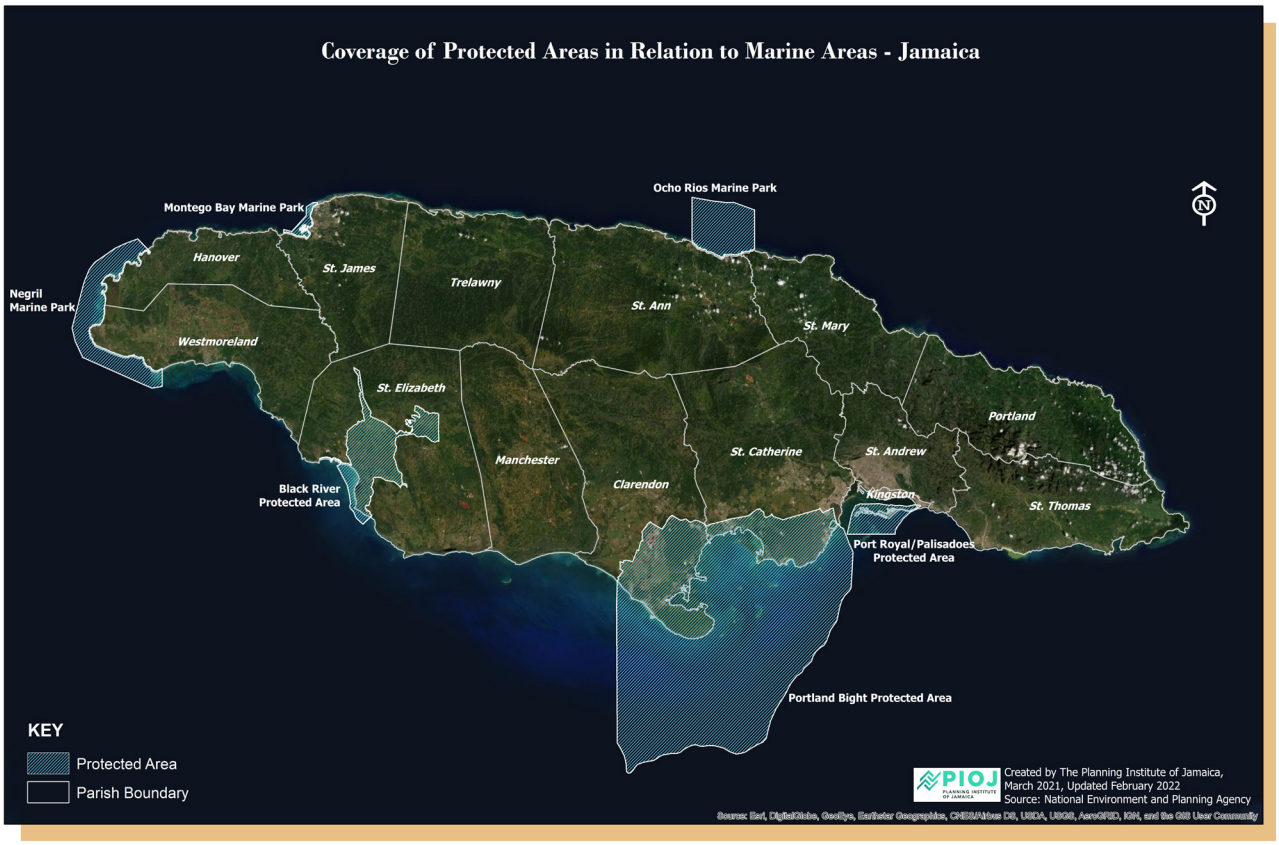

FIGURE 76: **PROTECTED MARINE AREAS 2020**
SOURCE: PLANNING INSTITUTE OF JAMAICA

Policies and frameworks have been implemented to protect marine areas including the updated National Strategy and Action Plan on Biological Diversity in Jamaica, 2016-2021 which support the sustainable management of biodiversity while also fulfilling country obligations of the UN Convention on Biological Diversity. Other policies that focus on improving biodiversity and the management of protected areas include the Protected Area System Master Plan (PASMP) 2014–2017. The PASMP aimed to align protected areas to national priorities and establish a comprehensive and representative system and framework for managing protected areas and maintaining ecological processes and systems.

Unregulated harvesting of both plants and animals negatively affects the biodiversity of the country. Several measures including laws and fines, to both protect areas from overexploitation and to deter potential perpetrators have been pursued. To date there are 18 Special Fishery Conservation Areas (SFCAs) following the designation of 3 sites in 2015. The SFCAs are 'no fishing areas' that are reserved for the reproduction of fish populations, with their protected status governed by the Minister of Agriculture and Fisheries through The Fisheries Act, 2018. There is, however, a need to expand the network to restore declining fish stocks and improve biodiversity and expand the fisheries sector.

The Ballast Water Management Act 2019 is another legislative achievement that supports sustainable development. It aims to protect the island's marine environment by regulating the discharge of ballast water and preventing ships from introducing harmful, invasive aquatic species when entering domestic waters. The Act ensures compliance with international maritime standards (International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004, which entered into effect globally in 2017).

Crosscutting issues and interlinkages with other SDGs

Climate change is clearly impacting the marine environment. For example, the damaging effect of recent extreme weather – devastating hurricanes and flood rains, which, combined with inadequate waste disposal practices contribute to marine pollution and coral reef health. Actions to improve climate resilience therefore complement measures aimed at protecting marine resources.

Given the importance of mangroves to marine ecosystem health, the progress of measures to "protect, restore and promote sustainable use of terrestrial ecosystems…" (SDG 15) is highly relevant to the goal of protecting our marine resources for sustainable development (SDG 14).

The focus on improving livelihoods of small-scale artisanal fishers provides an opportunity to apply the inclusive principle of "leaving no one behind", as the artisanal fishers are a vulnerable population group often experiencing extreme poverty (SDG 1 and SDG 2).

SDG 17 – "Strengthen the means of implementation and revitalize the global partnership for sustainable development" becomes especially relevant in the aftermath of the COVID-19 pandemic, as this had a negative effect on our capacity to implement some policies and plans. In this regard, the GOJ (through the National 2030 Agenda Oversight Committee for example) has been exploring strategies for financing implementation of sustainable development goals. Grant funding will clearly play a role, but renewed focus is needed on partnerships (e.g., with investors), especially in fully implementing blue economy projects.

Challenges

The main challenges to the achievement of SDG 14 include:

- Continued degradation of the marine ecosystem, highlighted by improper disposal of land-based waste, poor marine water quality and coral reef health. Climate change impacts, such as extreme weather, continue to contribute to the degradation of the marine ecosystem, e.g., damage to coral reefs
- The collection and availability of data: This is evident for indicators such as the contribution of sustainable fisheries to Gross Domestic Product (GDP)
- The establishment and management of Protected Areas is hindered by the inadequacy of data and research lack of adequate (and sustained) funding for full operationalization and insufficient legislative support for enforcement
- Monitoring and enforcement frameworks exist; however, this has been hindered by resource constraints
- The COVID-19 pandemic indirectly affected outcomes: for example, data collection and awareness building initiatives such as the ICC beach clean-up were curtailed in 2020.

Lessons Learnt and Best Practices

The work done since 2018 highlighted several lessons that should inform further development of strategies and policies for SDGs. These include:

- The difficulty of achieving sustainable goals for a SIDS and in the context of resource limitations. For long-term solutions, structural issues deserve increased attention
- The health of coral reefs remains a persistent challenge, impacted by climate change and hydro-meteorological effects such as extreme weather, which have had a damaging effect. Progress in achieving climate change resilience is, therefore, a critical component of achieving sustainable development
- The COVID-19 pandemic has had unforeseen impacts on interventions that required the mobilization of large numbers of people, such as beach clean-up activities, but steps were taken to minimize the disruptive effect
- Strategies that proved particularly effective include: the enactment and enforcement of legislation to reduce plastic waste, and collaboration between the government and stakeholders in addressing problems that stem from the behaviour of householders, e.g., waste disposal practices. This was shown to be of critical importance in addressing the issue of marine pollution.

Way Forward

While progress has been made in addressing the pressing issues of marine pollution, protection of marine and coastal ecosystems, IUU fishing, and inclusion of artisanal fishers, some challenges remain. There were signs of the continued degradation of the marine ecosystem, highlighted by poor marine water quality and coral reef health. However, plans and policies are in place to address these challenges. With a renewed focus on a green and blue recovery, efforts by the GOJ and development partners to overcome these challenges are expected to have a greater effect.

The enactment and enforcement of legislation to tackle IUU fishing and reduce marine pollution will be continued, as well as measures implemented to protect marine and coastal ecosystems. There is recognition of the need to expand the SFCA network to restore declining fish stocks, improve biodiversity and expand the fisheries sector (e.g., studies have been done on solutions, including aquaculture, mariculture, polyculture and freshwater fish ponds). Also, capacity building and adequate financing are needed for effective monitoring and enforcement. Plans will be implemented to fully exploit the potential of the blue economy to contribute to sustainable development.

Resources Requirements

To achieve all the stated objectives, it will be necessary to ensure adequate resources to the implementation of the proposed plans and policies, including:

1. Increased and specific budget allocations to address the issues, protection of coastal and marine environment and marine ecosystems, as well as implementation of projects to enhance livelihoods of artisanal fishers.
2. Equipment and Infrastructure, e.g., to sustainably control beach erosion and to ensure effective enforcement of legislative and regulatory measures to discourage Illegal, Unregulated and Unreported Fishing.
3. Personnel, including security personnel to ensure enforcement of laws and regulations etc.
4. Improved data collection and data management systems to facilitate better monitoring of measures to protect the marine environment.
5. Financial, material and human resources to identify potential and pursue evident opportunities related to the blue economy. This includes conducting and sharing information on studies and ensuring that they inform policies and plans.