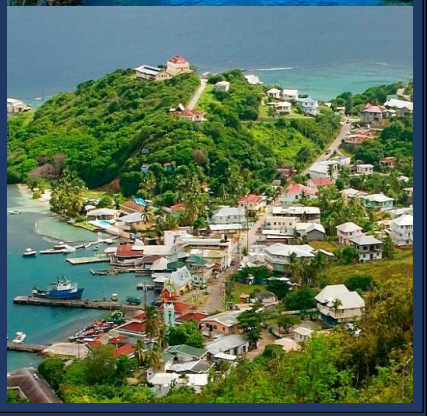
How to Understand,Access Finance + Invest in the Caribbean-Global Blue Economy



Dr Jack Dyer, Blue Economy Future

Blue Economy Future

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Submitted by Dr Jack Dyer of Blue Economy Future based on experience received as part of a blue economy finance, investment and genera consultant for Angola, Namibia, South Africa, Sierra Leone, Portugal and more recently for Barbados, Grenada, St Vincent and the Grenadines, Marshall Islands, Palau, Philippines but also as a World Ocean Council Associate

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Submitting Party: Blue Economy Future
Contact Person: Jack Dyer, PhD, CEO
Email: Jack.Dyer@utas.edu.au; jadyer2020@gmail.com; jad@blueeconomyfuture.org.za
WhatsApp/Mobile +27 (0)769732765
www.blueconomyfuture.org.za
LinkedIn Jack Dyer, Blue Economy Future SA

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1: INTRODUCTION

Globally and nationally, stakeholders are moving to support the conservation and survival of marine ecosystem resources, sustainable development - socially, economically and politically - whilst responding to, and enhancing resilience against, climate change, marine pollution, IUU fisheries, alien species and other disruption risks. Whether in the Eastern Caribbean or globally, for centuries the oceans have supported trade, food supplies, migration and resources, without sustainability in mind at a national or regional level. A review over the past few years has identified a number of initiatives from various institutions, entities, governments, communities and individuals towards a sustainable global, blue economy. Many Caribbean and global nations, are joining others in looking for a coordinated approach to respond to and participate in this global "blue economy" paradigm for many traditional sectors, and to exploit opportunities for new ones. As this review summarizes, these countries are in the process of drafting national blue economy strategies; developing suitable projects and initiatives; committing to protecting more of their EEZ as marine protected areas and creating national Blue Economy Implementing Committees. However, a preliminary policy review identifies policy gaps still remain specifically related to financing and investing in tourism; blue biotechnology, seabed mining, marine research and innovation, education and training, blue biotechnology, and other areas. This is to provide background context, to further illustrate the need for some policies to be revised to specifically incorporate finance, at a minimum, aside from legal/policy frameworks themselves, resources, institutions and enabling conditions

The findings from a recent consultancy experience in Barbados, Grenada and St Vincent and the Grenadines, through actively talking to those at blue finance investment; aims to support the transition towards implementation of the blue economy through a sustainably financed future, to overcome the traditional barriers of access to finance that many emerging nations and small island developing states experience. This includes promoting greater awareness of, and insight into relevant local and global resources and associated blue economy/sustainable financing trends. Over 120 relevant literature sources were systematically examined for examples of approaches, screening criteria, methods, mechanisms, tools, metrics, best practices and investment experiences along with impact investment indicators. It confirmed that the range of funding and methodologies diverged considerably, whether government, multilateral institutions and vertically integrated funds, aid agencies, private philanthropic donors, research grants and scholarships, the private sector including venture and impact investors, commercial sector and crowdsourcing, along with funding specifically for entrepreneurs. Certain common recurrent approaches were also discovered, such as the ecosystem based and marine spatial planning methods and initiatives such as UNEPFI's Sustainable Blue Economy Finance Principles' Sustainable Development Goal; UN Global Compact 9 Ocean Principles and a few others. Briefly the best practices for sustainable, green and climate change finance as similar areas related to social, environment and climate related risks are described, for which more examples exist.

This thorough evaluation of current blue economy/ocean and related sustainable finance and investment policies, practices, principles and tools provided the motivation for a comprehensive, coordinated response to overcome existing asymmetrical information, as well as proposing an alternative comprehensive Blue Economy and Investment Framework. The report also provides insight into investors and potential beneficiaries or applicants' shared experiences in trying to access or provide related funding. These efforts often fail, along with attempts to engage with the private sector. This was further confirmed through consultation with 37 stakeholders via interviews and surveys. Further responses may still be received. Many sources and participants also indicated insufficient awareness or expertise at converting to the blue economy; a lack of fiscal incentives or administrative/political support; a lack of clarity over a comprehensive investment tool or framework and the frequent absence, of suitable, investment ready and marketable products. Stakeholders still have a number of unresolved challenges as shown in existing research based on reviewing over 120 sources, directly and indirectly through consultation and previous project experience. Not only in the Eastern

Caribbean but also as uncovered through the World Ocean Council and other forums, these challenges continue to be widespread. Aside from debate over the most effective instruments, methods, screening criteria, sectoral priorities and impact investment indicators, these include challenges of restructuring existing economies, financial, legal, administrative and other systems or people to modify behaviour, and action to support the markets and invest in a sustainable blue economy.

Subsequently, this report's conceptual contribution to the ongoing global debate over the uncertainty of finance, collated existing findings, investor experiences and personal insight towards developing a suitable tool, or Blue Economy Finance and Investment Framework, combined with methods and impact indicators to suggest altering data collections, governance, policies, financial and other incentives. These will vary according to the type of project and investment, as described. Whilst specific methods to quantify and ascertain risks and impacts related to the potential investments are suggested such as a Risk-Vulnerability Framework, Impact Cost Analysis and cost-benefit analysis along with specific impact indicators, others were also considered.

A review of previous related blue economy and other sustainable finance/investment sources reinforces certain guidelines for the three countries and others to apply. Received input from stakeholder investors and local beneficiaries has not provided significant specific suggestions as to how the above framework can be differentiated between individual nations as they share similar traits and circumstances. However, it is hoped that further interviews with governmental role-players will yield more detailed responses. Ultimately investment and finance decisions can measure their impact on the blue economy by notably contributing to long term socially, economically and ecologically viable projects; conscious of restoring marine ecosystems reducing vulnerability and increasing resilience to extreme climate related and other disruption risks. Enforcing Marine Spatial Planning and Ecosystem management based on the Precautionary, "Do No Further or Irreversible Harms" and the "Polluter Pays" Principles are critical as the most repeated best practices. Monitoring and improving ocean and other marine/coastal source's health, ensuring only responsible coastal development pressure, active enforcement against potential threats and committing sufficient information systems to monitoring, evaluation and intervention, where necessary are also critical. Moving forward there remains a need for more stakeholder engagement to further refine the model to national or local requirements and provide guidance to assist the three countries within the scope of this report in particular, and those of the Caribbean in general, to access specific opportunities which have been identified. There is clearly a surge in the variety of available funding sources along with types of potential blue economy/sustainable ocean finance and interest; provided the right marketable opportunities or aid friendly projects exist, and are responsive to each stakeholder's requirements: community, individual funder, investor or national interest. Certain policies and clear support from these entities followed by eventual successes, will entice more stakeholders whether from within these three countries or from outside, to commit to these markets and investments. Simultaneously human capacity may need to be expanded and nurtured, so that new and existing entrepreneurs can also enter the blue/ocean economy

2: THE CARIBBEAN BLUE ECONOMY AND FINANCING TOOLS: LITERATURE REVIEW, CONCEPTUAL FRAMEWORK AND OVERVIEW

To map the global and Caribbean blue economy seascape, this review identified 115 finance/investment and related tools or approaches; 100 UNDP and other provided plans/policies and reports and around 100 background sources to understand the various Caribbean regional and specific Barbados, Grenada, St Vincent and the Grenadines marine ecosystem/blue economy and social context. These were identified through various techniques including Boolean algorithm, Internet-based searching and desktop submissions, recommendations from UNDP, network sources and previous projects. This review also extended the scope to consider possible elements of climate/green economy/other sustainable ocean and financing sources that might have specific value and validity in being applied to the blue economy and the Barbados, Grenada and St Vincent and the Grenadine specific locations. This approach was also extended to determining which stakeholders to prioritize for related consultation in Section 2.5, given time constraints and an initial screening of over 700 stakeholders. To ensure a comprehensive and practically useful series of tools and measures are designed this report has incorporated not only government sector, aid agencies and multilateral organizations as typically prioritized for global financing and investment flow analysis, but also the private sector, entrepreneurs and others. Previous research into the Caribbean blue economy indicates that this study for UNDP may be among the initial pioneers to move beyond identifying and quantifying the sector with its risks and opportunities, to actually developing related tools. Therefore, this report is well motivated as, locally and globally, more and more investors have expressed a willing commitment to financing investment ready blue economy projects and conserving ecosystems. More and more governments and organizations have equally committed to implementing these activities, together with 14 world leaders under the High Level Panel for a Sustainable Ocean Economy and at least 35 nations committed to protecting 30% of the oceans by 2030. However, this Report and UNDP consultancy can be justified not only in being timely but by actually being able to provide concrete sources, tools, best practices and recommendations. This is further backed up by desktop and field research/engagement with investor-ready projects, risks and recommendations.

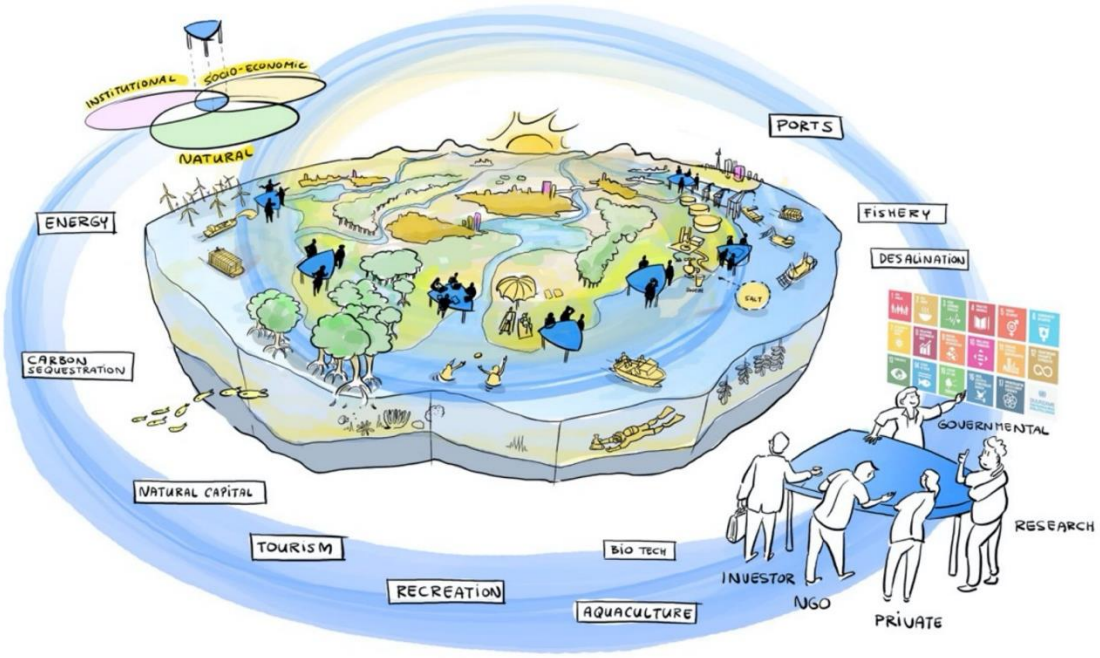
2.1: Key Definitions and Scopes of the Caribbean/Global Blue Economy

As stated in the Inception Report, the global/Caribbean blue economy incorporates multiple activities, sectors and processes. For example, the United Nations Environmental Programme (UNEP) defines the blue economy as: "*A vision of improved well-being and social equity, while significantly reducing environmental risks and ecological scarcity*." The World Bank notes it as: *"The sustainable use of ocean resources for economic growth, improved livelihoods and jobs, whilst preserving the health of marine and coastal ecosystems."* The Organisation for Economic Cooperation and Development (OECD) definition includes "*Economic activities which produce goods, services and research that seeks to reduce environmental damage to primarily marine environments*" (Taylor et. al 2017).[1] This is illustrated in Figure 2.1, and they have been identified and tabulated by the consultant in Table 2.1. Above all, it is critical, that these activities and interdependent marine economies/supply chains depend upon marine ecosystem resources (Figure 2.2) and the continuous ability to provide many of the core ecological and economic functions or benefits, sustainably in the short and long term as detailed in Table 2.2. These functions, as identified by the consultant and summarized in in this Table, are included so as to calculate the true value of associated investments/financing the blue economy; many existing sources (detailed later in this report) propose quantifying an ecosystem service/natural capital valuation

[1] OECD 2016, The Ocean Economy in 2030, OECD Publishing, Paris; Taylor S, Hudson J, Xirou H and Tsiarta C, 2017, "Green Jobs in the Blue Economy," Eunomia, Economic Commission, Brussels.

approach. To facilitate this, this consultancy utilises previous experience to indicate for which functions equivalents, will necessitate actual or proxy values.

Figure 2.1: The Ocean/Blue Economy



Source: NLA International 2021[2]

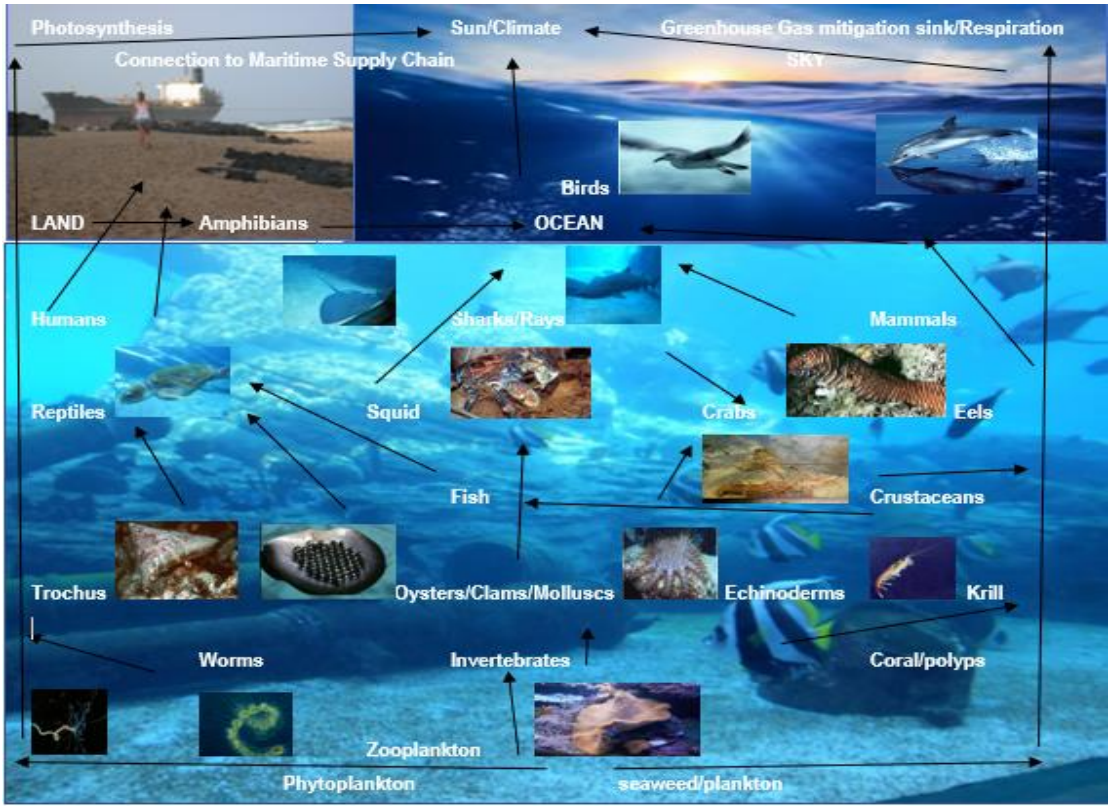
Table 2.1: Ocean and Blue Economy Activities

Ocean Economy Activities	Emerging Blue Economy Opportunities
Fisheries, Aquaculture	Cabotage
Shipping; Transport, Logistics and Ports	Marine finance, entrepreneurship and insurance; Dry Ports
Marine and Cargo Services	Undersea mining/Bioprospecting
Navies - Ocean and Coastal Governance	Drones, Robotics/Marine Protection
Offshore oil and gas	Marine Renewable Energy; Desalination
Marine, Cruise Tourism and Recreation	Marine Biotechnology; Blue Carbon
Education and Training	Maritime research and development, Technology e.g. sensors
Ship Repair	Vessel automation and conversion
Small Harbours and Marinas	Marine pollution, waste recycling and the circular economy
Maritime registry/flag of convenience	Blue carbon, finance, ecosystems, MPAs,
Maritime education and training	Entrepreneurship

Source: Dyer 2020(a).

[2] NLA International 2021, "The Blue Economy in Practise: Raising Lives and Livelihoods," *Blue Economy Pulse*, Portsmouth.

Figure 2.2: Marine Ecosystem Resources: The Basis for the Caribbean and Global Blue Economy



Source: Dyer, J., 2019.

Table 2.2: Ecological/Economic Functions of Oceans and Blue Economies (to assist in calculating the true value of associated investments/financing the blue economy as above).

Ecological	Economic
Biomass/Biodiversity Life Formation and Habitat	Life, Food, Material
Conservation	Supply of Natural Resources, Reduced Imports
Biological/Physical/Chemical	Redundancy against Uncertainty of Species Extinction, Fisheries Collapse, Biodiversity, Climate Change Risks etc
Growth, Reproduction,	Trade, Production, Consumption, Income/Profit
Respiration/Oxygen/Photosynthesis	Greenhouse gas mitigation funding/source sink
Water supply/purification.	Food security/Nutrition
Protection	Protection against Impacts– Vulnerability and Resilience
Ocean Chemistry, currents, salinity	Risk Identification, Monitoring, Prioritization, Adaptation
Coral atolls – geographical physical formation, continued growth and survival	Risk Enhancement if Ignored – Legal, Reputational, Insurance, Security, Operational, Impact Costs
Sand formation, nourishment and sediment	Opportunity or Alternative Costs of the Investment
Evaporation, Condensation and Absorption	Insurance against Maladaptation,
Climate Regulation –calcification, stratification	Future Sustainability and Survival
Counter eutrophication	Knowledge – Existing and Potential/Spiritual
Detoxification	Stability/Security/ Increased Adaptive Capacity
Population equilibrium	Aesthetic/Cultural/Social
	Tourism

Source: Dyer 2020(b)

2.2: Blue Economy/Ocean Initiatives in the Caribbean Region

A brief overview indicates just how many investment opportunities the Caribbean blue economy is shaping up to have. In the Caribbean the blue economy is estimated as being worth over $407.6 billion total value in 2018, with tourism contributing $56.4 billion, influencing over 43,000,000 consumers among 19 countries and covering 2,750,0000 km^2 of Exclusive Economic Zone (EEZ) and ocean. The Caribbean's blue economy approach has been to focus on ensuring the maritime sector can provide the similar job substitution from a hydrocarbon-fuelled economy through diversifying into marine renewable energy, promoting improved environmental and general quality of life, and social development benefits such as poverty eradication as the green economy.[3] [4] The strategy specifically emphasises the benefits of import substitution, energy security, balanced economic growth, and disaster risk and climate change mitigation. Higher Gross Domestic Product or GDP growth is specifically targeted by many countries within the region favouring the blue economy, from increased food security from renewable fisheries and a higher proportion of GDP with employment from ocean-related sources. Increased employment and economic growth have been accompanied by government plans which allude to the need for finance and investments succinctly, without investigating it to the extent this project's scope has undertaken.

Since 2017 marine or blue economy plans, policies and scoping studies/research have been undertaken by Barbados, Grenada, St Vincent and the Grenadines, Antigua and Barbuda, Belize, Dominica, Montserrat, the Bahamas and St Lucia. Jamaica and Trinidad and Tobago are also receiving blue economy plans by the World Bank and Inter-American Development Bank respectively. Dominica received a 2017 blue economy scoping study under the UNDP Caribbean Large Marine Ecosystem Project. St Lucia has undertaken a National Ocean Policy and is preparing Marine Spatial and Blue Economy Plans. St Vincent and the Grenadines held a National Blue Economy Seminar in 2018. Antigua and Barbuda received UK government support to host a Blue Economy Roundtable event for the Eastern Caribbean in 2019. The inclusion of other nations signals an example of best practices in planning finance, governance, data collections, policies and other practices that the three countries in this study can learn from. It also signals growing awareness and interest across the region which can aid in resolving any transboundary risks and issues for Barbados, Grenada and St Vincent and the Grenadines such as handling sargassum, responding to pollution and climate change. It additionally illuminates further alignment of work with other nations to establish further projects such as improving ferry linkages between Caribbean islands and pooling associated data. Moreover, being conscious (even briefly) of what other nations are doing may aid investors and entrepreneurs within the three countries, in diversifying their funding sources and business opportunities. It also serves as a possible indication that the three countries will have to be careful in presenting their funding requirements, priorities and investment opportunities, given a soaring increase in potential competition being developed. Compete Caribbean has been actively developing blue economy business development, entrepreneurship and supporting innovation through a number of initiatives as this report will elaborate in later sections. It offers grant, mentorship and business development support as an Inter-American Development Bank initiative open to all Caribbean nations, as an alternative source of funding, in parallel to the United Nations Development Programme Accelerator Lab initiative in Barbados.

The blue economy has the potential to be of phenomenal investor interest, despite not yet having resulted in the equivalent capital influx flow for various reasons, as detailed further in this report. The Caribbean hosts over 25,000

[1] InterAmerican Development Bank, 2021, "Accelerating Blue Bond Issuance in Latin America and the Caribbean," Bogota.
[2] World Bank, 2019, International Development Association Program Document for a Proposed Credit In the Amount of US$ 20 Million For A Disaster Risk Management Development Policy Credit with a Catastrophe Deferred Drawdown Option, World Bank Report, St George.

registered trawlers with over $700 million in economic contribution according to the World Bank, InterAmerican Bank and other sources. Yet 35% of stocks are over-exploited and need preservation for the future. Limited aquaculture exists as a substitute. Marine tourism contributes over 75% of regional GDP. The Panama Canal represents a major transhipment hub creating significant regional maritime connectivity and supporting local Caribbean port and shipping trade. Significant biodiversity exists from over 12,000 fish and 13,000 unique plant species in the coastal and marine environment that could exist for sustainable blue carbon, fisheries, aquaculture, blue biotechnology, ecosystem and tourism benefits, but blue biotechnology is in its infancy for the three countries contained within. Despite the COIVD19 pandemic, climate change and natural disaster events such as the sargassum seaweed invasion, recent hurricanes in the region and St Vincent's La Soufriere volcanic eruption causing physical and reputational damage risks; investments are projected to multiply far beyond the capacity of existing investors, once alerted to the prospects.[5] . This trend is being confirmed by the investors and beneficiaries identified in Versions 1 and 2 of this submitted report.

These earlier attempts to attract sustainable blue capital and finance from areas such as the Grenada Blue Network for Innovation; Barbados Ministry of Maritime Affairs and the Blue Economy; Branson Carbon War Room and Centre of Entrepreneurship in Jamaica but as with others including a regional focus such as entrepreneurs from Barbados, Grenada and St Vincent and the Grenadines, Caribbean Challenge Initiative; UNDP Blue Accelerator Lab and Grenada Coastal Blue Growth Master Plan; can be supplemented by new sources of finance, as proposed in later sections. Others include the New Jamaica/Caribbean Fisheries Framework which calls to mobilise regional finance and capital in fisheries to support individual Caribbean island projects and the Clean Ocean Alliance, which similarly focuses on measures to attract investor interest in marine pollution reduction solutions and the regional circular economy. The 2013 Caribbean Climate Initiative formally recognized the need to accelerate marine environment conservation as 20% by 2020 and was immediately ratified by nine nations.

2.2.1: Barbados

Not only is Barbados starting to increasingly favour more sustainable forms of traditional blue economy activity such as fisheries, tourism and energy; it is even managing to profit and diversify from adversity. Examples include developing climate resilient livelihoods, investing in coastal protection and considering marine protected areas, but also exploring commercial opportunities such as exploiting the harvesting of the periodic threat of the invasive sargassum seaweed species. In July 2020 the Ministry of Maritime Affairs and the Blue Economy oversaw the initial test run carried out by the Barbados Coast Guard and the Fisheries Division of a $350,000 Sargassum harvester. Barbados has also sought to involve stakeholder participation and awareness even throughout the COVID19 pandemic such as an Inter-American Development Bank (IADB) hosted, November 2020 blue economy sensitisation workshop. This extends to forming outreach and other partnerships under the Commonwealth Blue Charter and other initiatives.

Although over 75% of Barbados's coral reefs are critically endangered and vulnerable, the June 2021 World Ocean Day event led to symbolic coral replanting and the pledge by Minister of Maritime Affairs and the Blue Economy, Mr Kirk Humphrey, that cruise vessels would be banned from the western island shore to promote regeneration, unless they could sufficiently control movement to avoid irreparable damage. In addition, the Coastal Zone Management Unit has developed information to give guidance on clearance procedures and anchorage areas for all vessels arriving in Carlisle Bay. Barbados is about to embark on a $4,500,000 budget allocated, marine spatial plan in partnership with

[5] Dyer J, 2020 (a), "Examining How Stakeholders Can Access a Sustainable, Climate Resilient Economy and Generation: An Update on Green and Climate Economy Finance Sources, Developments and Investment Trends", Durban.

the Nature Conservancy, and is also redrafting its fisheries regulations. In 2020 it invested in further hybrid and electric port equipment. Barbados is also facing constraints of water security after the Mount Hope desalination plant failed in April 2021. Climate change is anticipated to pressurise this further. From January 2020 to January 2021, the Ministry of Energy, Small Business and Entrepreneurship employed consultants ITPEnergised to examine the technical/commercial feasibility of Ocean Thermal Energy Conversion, offshore wind and wave energy production. This was linked to the 2030 target of 100% renewable energy, specified by the government in its National Energy Policy. However, simultaneously the nation is contemplating profiting from fossil fuels. On the 15th June 2021, public consultation was held by the Ministry of Energy, Small Businesses and Entrepreneurship, to consider the government's signed contract with British Petroleum to allow prospecting surveying in two offshore acreage blocks – Carlisle Bay and Bimshire blocks.

Traditionally, all three nations prioritised marine fisheries and tourism to a greater extent, as evidenced by the respective government focus through Barbados's IADB 2020 study; UNDP Barbados blue economy scoping study; Blue Economy Policy Framework; Institutional Capacity Building Programme, first Blue Economy; the draft 2016 Blue Growth Master Plan; CROP Ocean Baseline Policy Analysis Report; Draft Maritime Economies Report - Commonwealth Marine Economies Programme; National Ocean Policy and Strategic Action Plan; the St Vincent and Grenadines 2013 and 2021 National Ocean Policies and for all three nations the UNDP consultancy report by McCue in 2021. Fisheries only contribute 0.15% to Barbados's GDP, 1.4% to Grenada and 2% to St Vincent and the Grenadines. In contrast tourism contributed 36.2% to Barbados's economy in 2019 pre-pandemic, 40% to Grenada's and 46.2% to St Vincent and the Grenadines. The actual contributions of ports, shipping and logistics is significantly lower than tourism, whereas those from aquaculture; ocean energy; maritime education and training; offshore oil and gas; blue biotechnology; oceans surveillance/defence, technology, seabed mining and other sectors are even more peripheral across all three nations. At least 40 nations have pledged to protect 30% of their oceans and Exclusive Economic Zones by 2030. While the three countries in this report are committed to marine conservation, at present less than 1% of Barbados's ocean area (10.8 km^2) is formally legally protected, for Grenada less than 1% (133 km^2) and for St Vincent and the Grenadines it is less also than 1% (84.1 km^2).[6] Stakeholder feedback identified a need for additional marine protected areas, combined with sustainable funding, employment of monitoring wardens, and more support for active law enforcement and Coastguards have been pointed out as core concerns by stakeholders in this report. They regard this as essential to reach the global target of 30% protected by 2030 goal of the Convention on Biological Diversity AICHI. Although it has yet to translate into legally formal boundaries and sufficient supporting resources, as to effect marine reserves as recognised internationally by the IUCN Protected Areas Network and the MPA Atlas initiative, Barbados, Grenada and St Vincent and the Grenadines are starting to explore the concept of related "blue bonds" based on principles of marine conservation, such as extending the current coverage of marine protected areas.

In the 20th/21st century, additional investment extended to a few projects in desalination, necessitated by increasing population pressures and concerns over water scarcity risks. Barbados includes the specific example of aquaculture, increasing production by 29% on average per year from 2006-2018 from 2 tons to over 26 tons.[7] It generated $256,000 in revenue in 2016, 96% dominated by red tilapia followed by red claw crayfish for local markets. This prioritised import substitution. Yet it only supports 15 minor aquaponics producers and 1 commercial farm. Simpson, in a 2018 presentation, cites the absence of support for aquaculture and recreation; existing land shortages and coastal development pressures; marine environmental threats; information limitations and allocation of resources towards

[6] Data.worldbank.org; viewed 14 October 2021; mpatlas.org; viewed 14 October 2021.

[7] Simpson N, 2019, "Oceans Economy and Trade Strategies Project National Stakeholder Workshop," Bridgetown

tourism dominate, which limits the degree, type and varieties of attracting new investment.[7] In 2019, the Barbados government has proposed introducing aquaculture as school feeding schemes as proposed by CARICOM and CANARI as a basis for providing a secure food market for aquaculture, given its limited production and support by consumers. Barbados started a feeding programme in 1963 and St Vincent and the Grenadines in 1984, where fish could be specifically included into school diets. Barbados has also proposed future projects are powered by ocean renewable energy in a 2021 ITPEnergised consultancy series for the Ministry of Energy, Small Businesses and Entrepreneurship investigated fixed offshore wind (OSW), floating offshore wind (FLOW) and ocean thermal energy conversion (OTEC) projects around the island from a technical, environmental and logistical perspective. Wave energy was ruled out as less technically feasible, far more uncertain and expensive.

2.2.2: Grenada

Marine tourism has long featured as part of the Grenada ocean/blue economy, including the noted 2007 Underwater Sculpture Park and fish haven. Tourism provides 40% of the local GDP. Grenada has undertaken a Blue Growth Coastal Master Plan in 2016 and participated in the Commonwealth Marine Economies Programme from 2017 to improve marine spatial planning, ocean governance and data collection, whilst adapting to climate change and against illegal fisheries in theory. However, only a brochure has been provided and, without specifically publicly published annual reports to give details, it is challenging to evaluate potential impact. It proposed a Blue Innovation Institute in 2017 and Blue Networks under the 2016 Blue Growth Master Plan, but subsequently no substantiated report has been seen confirming its existence. Marine Protected Areas increased from 3 in 2016 to 20 in 2019. This coincided with a concerted effort to publicly commit to the 30% of a nation's territory as protecting the oceans' global goal by 2030 and a renewed action against threats such as marine waste. In 2019 this included a complete ban and zero import of Styrofoam food containers, single-use plastic bags, and disposable plastic plates, forks, and spoons. There has also been an updated Integrated Coastal Zone Management Act. This Act aims to coordinate current fragmented legislation approaches to attracting finance and investment, along with a common response approach to various factors and risks. It will be more fully explained with its implications for governance in Deliverable 3.

On 16 December 2019, the World Bank approved the equivalent of a commercial loan or credit valued at US$20,000,000 allocated to support the transition to Grenada's resilient blue economy. A 2020 World Bank expert estimated that, to tourists, every square kilometre of coral reefs was valued at over US $200,000. In 2020 the engineering company Atkins won the World Bank contract to ascertain the blue economy strategies of Grenada, St Vincent and the Grenadines, Dominica, the Dominican Republic and St Lucia, with as yet, unknown progress. As subsequent sections will detail, the World Bank has also undertaken a specific Grenada Second Fiscal Resilience and Blue Growth Development Policy Credit linked to marine conservation and the blue economy, aside from a contingency fund being formed against climate change, natural and human disasters. These three Eastern Caribbean nations have also been considered to have, as yet, not fully examined blue biotechnology potential. However an OECS and UN project to investigate the market potential not just of the blue biotrade, but also the queen conch species specifically, is planned for a future date. Production exports, (aside from demand) more than doubled from 645 tonnes in 2012 to 1,400 plus tonnes in 2015.

Historically, Grenada undertook several fisheries-related projects aiming to stimulate investments, trade and export growth potential, such as the Sauteurs Lobster fishery in 2003.[8] It identified co-management and stakeholder

[8] McConney P, 2003, "Grenada Case Study: The Lobster Fishery at Sauteurs," Caribbean Coastal Co-management Guidance Project, St George

cooperation challenges at trying to restrict net sizes via a trammel net ban, and impose more ecologically sustainable fishing targets. As with other Caribbean countries, the sector and any potential investments are susceptible to natural disaster events and climate change. In 2004, Hurricane Ivan destroyed 90% of Grenada's mangroves and resulted in USD $1.1 billion worth of damage, equivalent to 200% of the country's GDP. The sector also experienced risks from increasing cruise tourism, marine pollution, coastal and land development with population growth pressures, coastal erosion and sand mining especially in the River Antoine Bay, Telescope, and Tyboe areas.[9] From 1987 to 2007, fisheries employment doubled to 3,000 and fish processors increased from one to three. However, by October 2021 the Fisheries Division reported a decline to 2,122 registered fishers with 45 registered landing sites. Pelagic oceanic fisheries included 71% of all catches landed, 22% finfish, 3% Caribbean spiny lobster and the rest from other species. The United Nations Environment Programme partnered with the Grenadian government to undertake a Project: *'Building Capacity for Coastal Ecosystem-based Adaptation (EBA) In Small Island Developing States,'* from 2014 to 2016. More updated and extensive information for all three Caribbean island nations is contained within McCue's 2021 report for UNDP. A previous GIZ project funded efforts at developing integrated climate change adaptation strategies and coastal zone management aiming for "good governance," "transparency", "equity" and the formation of a devoted Coastal Zone Task Force.[10] From December 2018 to 31 December 2022, OECS funded an awareness and research project entitled: '*Building Resilience in the Eastern Caribbean Through a Reduction in Marine Litter Project, including the formation of policies, awareness, training, capacity building and incentives'.*

2.2.3: Saint Vincent and the Grenadines

Although St Vincent and the Grenadines (SVG) drafted an initial ocean policy document in 2013/2014 and progress has been slower, the country has also expressed an interest and commitment to work with Barbados and Grenada along with UNDP, UNEP and the FAO specifically, to establish national blue economy implementation teams. These aim to connect stakeholders, establish coordinating mechanisms, individual strategies, ascertain institutional capacity, monitoring and evaluation frameworks, as subsequent sections and reports will highlight. There is a more recent 2021 National Ocean Policy, provided to this consultant before the submission of Version 2 of this Deliverable. St Vincent and the Grenadines has, however, participated with Grenada in the UK government-supported Climate Change Adaptation of the Eastern Caribbean Fisheries Sector (CC4FISH) from 2014 to 2016. Under the 2017 CMEP Programme, St Vincent and the Grenadines was identified as potentially needing assistance to develop accurate marine spatial planning, hydrographic graphs and to overcome the EU measures against non-cooperating fishery exporting nations.[11] Improving ocean data collections and monitoring and awareness were also perceived as critical. From 2019 the World Bank has committed to supporting the equivalent of two commercial loans or credits for US $30,000,000 related to blue growth in exchange for macroeconomic/government based fiscal and related development policy changes, structural, budget and institutional capacity changes as further sections detail. It has developed a contingency fund reaching over 2% of national GDP. Recently, on 10th September 2021, Kadtron Installation and Logistics and the St Vincent and Grenadines government have been seeking to persuade local fisherfolk to favour these Panga vessels with additional range/storage capacity; to create local boat assembly sources of employment, whilst the components themselves are imported from Mexico's Imemsa. It has also been investigating the blue biotrade under OECS, as with Grenada.

[9] Grenada Government, 2010, "Grenada National Environmental Profile," St George.
[10] GIZ, 2018, "Coastal Zone Management in Grenada, Carriacou and Petit Martinique," GIZ Report, St George.
[11] United Kingdom Foreign and Commonwealth Office, 2017.

These nations have experienced beneficial attention under UNDP, Organisation of Eastern Caribbean States (OECS), CMEP and other attentions to develop the blue/oceans economy. In February 2021 they participated in a Blue Biotrade webinar. This aimed to encourage Caribbean stakeholders in the conch and other fisheries sector activities to try and enhance the value of their trade, by investigating the potential of blue biotechnology. It focused heavily on CITES and the legal implications of considering trade for rarer/more sensitive marine species. This was in recognition that legal obstacles, lack of awareness and other information as well as uncertainty as to finance opportunities often prevented blue economy investor interest. It especially sought to develop export market and other value chain opportunities for Grenada, St Lucia and St Vincent and the Grenadines. The OECS undertook a Blue Economy Tourism Analytics study to investigate similar hurdles that influenced marketing risks for investment to commit to tourism. They are also participating in the Commonwealth Blue Charter and marine spatial planning initiatives. Recovery is even more pivotal, given coral reef damage from La Soufriere volcano in the Grenadines, threat of sargassum seaweed and plastic pollution invasions and loss of cruise tourism from the COVID19 pandemic. Promising are developments by the private sector and others to establish seed funding, venture capital, mentorship and other guidance via initiatives such as the Branson Centre of Entrepreneurship in Jamaica but with the UNDP Accelerator Labs in Barbados, open to entrepreneurs and more mature businesses from the Eastern Caribbean including the three countries under this consultancy.

It also includes the 26 February 2021 launched, Compete Caribbean's Blue Economy Innovation Challenge, that will give entrepreneurs up to $320,000 (US$160,000) in grant funding, specifically targeted at Barbados and the other countries' entrepreneurs with brilliant ideas. However, they have to obtain about 50% of the budget from self-financing or other sources. This challenge requires innovative solutions in any river/ocean sector area including fisheries, aquaculture, marine ecotourism, fish traceability, waste disposal and real time data collection. The funding can be used for assets such as equipment, research, development, testing, packaging and certification for product development, establishing safeguards responding to marketing, complaints and communication/coordination. It can support commercialisation through market research, developing distribution channels, information technology, digital integration and traceability. It cannot fund alcohol, tobacco, other drugs, weapons and potentially harmful threats to the marine environment. Examples include ozone depleting substances and pesticides, transboundary waste movement and current activities operating expenses, debts and regular activities - it has to be a new activity.

2.3: Overview of Regional and National Plans and Policies Relevant to Blue/Ocean Economy, Finance, Implementation and the TOR

2.3.1: Regional Blue Economy Related Plans, Policies and Initiatives

The United Nations Development Programme, UNEP and FAO are relying upon this consultancy to provide guidance related to their joint programme: '*Harnessing Blue Economy Finance for SIDS Recovery and Sustainable Development*', especially through its third objective to provide the definition of specific financing mechanisms for Blue Economy initiatives to achieve resilient growth. Although the Blue Economy is not specifically stated in the UNDP Strategic Plan, it does allude to other goals that might be relevant in ensuring that any investments or project commitments undertaken need to specifically reduce poverty, upscale radical macroeconomic transformation towards greater alignment with sustainable development and the associated SDGs (Sustainable Development Goals) and establishing resilience to natural disasters. This includes also favouring measures to embrace nature-based solutions, wherever possible. The 2021 UNDP '*Blue Economy for Green Islands'* document indicated that concrete measures were being undertaken to finance research and policy formation through the SDG Fund; entrepreneurs and innovators

through the UNDP Accelerator Lab and the future of tourism for small and medium enterprises under the FUT Tourism initiative.[12]

Regionally, a number of blue/marine/ocean initiatives, including policy frameworks and guidelines aiming to provide a coordinated approach to resolving common risk threats and exploiting sustainable socioeconomic opportunities wherever possible, have been undertaken. For example, the 2013 Eastern Caribbean Regional Ocean Policy and Action Plan by the Organisation of Eastern Caribbean States for Grenada and St Vincent and the Grenadines, (but not Barbados), mostly concentrates on the governance and strengthening of stakeholders in a collaborative sense via human resources, technology and effective, responsive, flexible organisational structures[12] Therefore, any subsequent blue economy finance/investment set of tools/screening criteria and strategies as envisioned during the results of this Deliverable would critically need to link to this existing initiative that guides those of Grenada, St Vincent and the Grenadines including the vision of: "*Healthy and richly biodiverse oceans, sustainably managed in an integrated way to promote economic development and the livelihoods and aspirations of current and future generations".*[13] Similarly; this embraces a number of specific guidelines as principles to follow in blue economy investment, governance and planning including those of: sustainable development; the "right" to development; ecosystem health; ecosystem based management; integrated ocean governance; duty of care and accountability; knowledge based decision making; Precautionary Approach; public participation, access and benefit sharing; user pays and other economic instruments. Each of these principles embraces developing the blue economy and its method of implementation to consider a holistic view that implements marine conservation and scientific principles, includes popular involvement, sound governance, social and ecological significance beyond the conventional economic arguments for yielding profit, revenue, market share, investment and related maximisation objectives.

Therefore, if investments are to be undertaken in the three countries in this study, not only is it advisable to consider how different participants will react and need to be communicated/involved to express their concerns and other input, but also to consider that fair chances might be provided to benefit from these projects and activities such as local procurement, employment and protection of traditional usages or benefits. The Eastern Caribbean Regional Ocean Policy further advises that the User Pays Principle should prevail, so that economically, those who use a resource should provide some market related compensation to communities/individuals if depriving them of legitimate use, so that they have an incentive to ensure sustainable resource utilisation, regeneration and replenishment. Those who pollute should therefore be legally liable for the costs incurred and should bear the costs of containment, avoidance, abatement, or remediation as much as modern processes can rectify.

The Regional Action Plan on Freight Logistics, Maritime Transport and Trade Facilitation[14] focuses on developing infrastructure, policies and investments to support maritime and supply chain efficiency, competitiveness and connectivity across the Caribbean region including Barbados, Grenada and St Vincent and the Grenadines. Aside from measures such as a regional observatory and logistics platform, it also recommends endorsing a series of specific indicators related to these areas, committed training and statistics, regularly updated to implement these solutions. Infrastructure might be financed through traditional public finance partnership, with credit, loans, training bursaries and port modernisation incentives, could be committed to by government, the private sector and others as tools/instruments to undertake this plan further. Technological modernisation could streamline processes to more immediate efficiency,

[12] UNDP 2021, "Blue Economy for Green Islands: Economic Diversification, Job Creation and Resilience," UNDP Bridgetown.
[13] Organisation of Eastern Caribbean States, 2013, "Eastern Caribbean Regional Ocean Policy," OECS, viewed 29 September, 2021, https://www.oecs.org.
[14] IADB 2015, The Regional Action Plan on Freight Logistics, Maritime Transport and Trade Facilitation," IADB, Mexico City.

productivity and cost saving measures. This provides a more orthodox approach to financing investments in infrastructure, logistics and related developments that however, does not embrace the principles of social, environmental and economic long-term sustainability, as highlighted in the previous paragraphs. However, investors are often more comfortable in considering traditional financing solutions such as public-private partnerships, along with conventional technology rather than innovations and entrepreneurship. These methods, as under this Regional Action Plan, could entice far more conservative funders to enter the blue economy if arrangements were traditional, but the screening criteria, mechanism of implementation and indicators for measuring investment impact were realigned to the green, circular or blue economies.

More recently, in June 2020, the World Bank and OECS published a tender on blue economy tourism diagnostics to try and identify which particular opportunities and constraints existed, such as access to blue economy finance, after it was identified as a possible area for growth in a series of OECS webinars by Professor Dickon Howell. It was also recognised as a focus by the G20 Development Working Group as a means of mobilising communities to address threats such as coastal erosion, pollution, overfishing, and climate change, whilst supporting SDGs, local development plans, preserve income generation and ecosystem services/natural capital. Additionally, it is recognised as crucial to invest and pursue solutions for blue economy tourism, given existing economies' structural dependencies, by the Integrated Social Development and Research Institute (ISDRI). The Caribbean Sustainable Tourism Framework, Eastern Caribbean Regional Ocean Policy and Action Plan, the Caribbean Development Bank and World Bank are all investigating more sustainable mechanisms of ecotourism and diversification from traditional fisheries and related ocean activities. More recently COVID19 has unprecedented implications for the global future of tourism; away from traditional dependency upon mega cruise ships and more towards yachting, recreational and eco or experience-based tourism. Virtual tourism experiences have also proven popular during the pandemic, whilst projections are that business/event and hospitality tourism will decline based on increasing use of technology and digitisation of the future of work, reducing travel requirements through use of Skype, Zoom, WhatsApp etc.

Additionally, although this is not a legal review, Caribbean marine fisheries related policies that need to be considered for any commitment by any supply chain stakeholder for sustainable blue growth and marine conservation include the Caribbean Community Common Fisheries Policy and Regional Mechanism and the NOAA Caribbean Reef Fish Fishery Management Plan. The Caribbean Fishery Management Council has plans for Coral, highly migratory species, queen conch, reef fish, and spiny lobster species. A legal review of blue economy policies for Caribbean marine pollution needs to consider the Caribbean Regional Management Plan for Marine Litter. This is aside from any global and local maritime law, International Maritime Organisation (IMO) conventions on ballast water, global biofouling, the International Convention for the Prevention of Pollution from Ships (or MARPOL) and other related initiatives/policies. Other specific aquaculture, marine conservation and protected area or blue economy policies and legislation could also be critically reviewed and engaged with. Examples include the British Virgin Islands, Fisheries Order, Jamaica Fishing Industry Regulations and Grenada Fishery Regulations. OECS, the Commonwealth and the British government have been especially heavily committed to funding various ocean/blue economy related proposals via the Commonwealth Secretariat and the separate Foreign and Commonwealth Office based, Commonwealth Marine Economy Programme. As part of the Commonwealth Secretariat the UK has funded consultancies on fisheries compliance training; online ocean funding databases; ocean progress indicator reports; blue finance; climate finance; blue carbon and other initiatives. This has also incorporated improving legislative framework capacity.

In recognition of the significant opportunity costs, investments sacrificed and lost revenue from discouraged tourists, the Caribbean region has recognised the need to adapt to climate change, natural disaster events such as volcano

eruptions and marine pollution/waste, especially from plastic. The Caribbean Regional Action Plan on Marine Litter Management provides specific case studies and potential solutions for individual Caribbean nations such as St Lucia, Guyana, St Vincent and the Grenadines, Jamaica, Bahamas and Barbados.[15] It targeted the need for an individual stakeholder requirement analysis, a review of legislation and policies, monitoring and research programmes, solid waste management strategies, education and outreach programmes to communities. A regional series national marine data survey is being phased between 2019 and 2022 as a preliminary precaution to determine the extent of marine litter as a problem, potential implications and effective solutions whilst alerting more conscious, empathetic people and communities to action. It is essential to determine possible causes and motives as a basis for facilitating more permanent behavioural changes. At least 20 Caribbean states were willing participants to varying degrees, including those three within the scope of this report. Each recognises the dangers of not acting. For example, during the 2013 St Lucia Flood, this climate-related natural disaster caused marine debris damage of over $68,800,000, aggravated by significant existing environmental waste. Various Caribbean islands and other SIDS (Small Island Developing States) have been the subject of global research on the magnitude of marine debris existing and experience localised problems with far more significant risks than many nations to public health, tourism, fisheries and ultimate sustainable livelihoods. Examples include Barbados, Belize, Cuba, Dominica, the Dominican Republic, Grenada, Guyana, Jamaica and St Lucia. The 2017+ Commonwealth Marine Economies Programme has recently expanded upon this with detailed hydrographic surveys, outlining the extent of how coral reefs and habitats are especially engulfed by sargassum seaweed, marine plastic and other pollution along with coral bleaching, hypoxia and climate change threats. If not addressed, these will significantly adversely distort ecological and economic values, deterring users, reducing marine biomass and biodiversity values and potential payoffs for development.

The Caribbean has also prioritised current efforts to strengthen measures against IUU (Illegal, Under-reported and Under-regulated fisheries). Recent developments related to resolving global transboundary problems of marine spatial planning; ocean conservation; governance and security; acting against poaching, oil spills and other pollution; climate change; migrating species and other challenges, include the 2020 attempted efforts to strengthen ocean governance and responsibility via a new UN High Seas Treaty for areas beyond national jurisdiction to update the 1982 United Nations for the Convention on the Law of the Sea (UNCLOS) Agreement. It extends to the December 2020 attempts, in a World Trade Organisation Agreement, to reach a greater global commitment to phase out fishing subsidies by many countries to produce excess vessel, harvesting capacity and crew beyond oceans' biological, maximum sustainable yields. This severely restricts the current blue economy investment and revenue opportunities for many Caribbean and global fisheries by leading to bycatch loss, low profit and cost margins creating market distorting incentives, overcapacity and accelerating below conventional market seafood prices for many species such as tuna. In 2018, global fishing subsidies exceeded $35,000,000,000 each year. However, agreement was postponed. The activist organisation Sustainable Ocean Alliance, along with multiple NGOs, launched online campaigns and mass media efforts, given physical COVID19 pandemic restrictions, in an effort to draw global attention to this issue.

2.3.2: Barbados, St Vincent and the Grenadines "Blue Economy" Themed Policies, Plans and Initiatives

Barbados's Growth and Development Strategy from 2013 to 2020 primarily focuses on restructuring macroeconomic developments, budgets, systems and processes away from the debt and other issues incurred from the 2008 global

[15] Dyer J, 2019: "Disentangling Our Oceans: How to Save Our Marine Ecosystems and Blue Economy Future via Purging our Detritus, Plastic Waste and other Pollution Eradication Strategies", Durban.

financial crisis. These embrace the criteria of "Adjustment, Reform, Recovery and Sustainability".[16] Although not especially focussing on blue economy prospects as a source of revenue, it highlights the need for the nation and business sector to embrace innovative financing mechanisms, from all sources, that can help reduce its debt whilst simultaneously promoting education and training; infrastructure development and modernisation, sustainability and poverty reduction. It recognises the need to promote a conducive, updated legislative, tax, financial and curriculum framework to support these sources and their stakeholders. This policy follows on from a 2004 Barbados Sustainable Development Policy, which paid more attention to ensuring equitable, efficient and responsive environmental, social and economic outcomes.[17]

Barbados's scoping study undertaken by UNDP in 2020 focuses directly on the blue economy.[18] This consultancy will specifically assist the study's Enabler 3: securing access to sustainable finance and investment; developing business opportunities (Enabler 4), and human capacity development (Enabler 5), whilst contributing to research and marine information (Enabler 6) and public awareness and engagement (Enabler 7). One crucial aspect this report highlighted was the increasingly significant contribution of marine resources and activities to the fate of Barbados, especially pending the COVID19 pandemic recovery. The direct blue economy contributed around 6.7-6.9% on average to GDP from 2007 to 2017. The source recommended the example of increasing user fees as an example of one policy instrument that could lead to help fund conservation and offset damages from increasing tourism numbers. Finally, it does offer a core number of indicators that will be reviewed in later sections/reports to monitor and ascertain direct progress towards a thriving blue economy in Barbados. These indicators include those specifically related to sustainable blue finance such as a percentage increase in public and public finance for the blue economy; percentage increase in revenue from domestic sources, such as taxes, fees and levies; national investment priorities being identified; a transparent and effective resource allocation mechanism for local and external investment in the blue economy, and the number/percentage/proportion of projects implemented related to sustainable blue finance.

Apart from this report, the previous consultant (McCue) referred to drafts being undertaken by various entities. These should provide further examples to help guide and coordinate the various Barbados national/regional blue economy stakeholders to understand all financial, technical, policy and other aspects necessary to undertaking the blue/oceans project. This includes the 2020 Integrated Blue Economy Policy Framework and Strategic Action Plan developed by International Sustainability Consultants. The Spanish consultancy OCA Global (formerly EQO-NIXUS) is generating an Institutional Capacity Building Programme following a gap analysis in partnership with the Barbados government Inter-American Development Bank (IADB). This followed assistance through the Compete Caribbean Partnership Facility to develop the Strategic Action Plan for Barbados. This plan specifically focuses on establishing the macroeconomic trends and current contributions of various activities to the blue economy such as wastewater, solid waste, fisheries, tourism, energy and transport, highlighting the interconnectedness across various sectors. This consultancy's scope of blue finance and investment, however was not considered as its main focal point. It also analyses the policies existing plus associated legal and governance gaps. However, the need for economic dimensions to be incorporated into any ocean governance framework and implementing mechanism was highlighted. This should consider related sustainable finance and investment/business development: incentives and disincentives; favourable business environment; planning and improved mechanisms for public-private partnerships; and modern infrastructure

[16] Barbados Government , 2013, "Barbados Government Growth and Development Strategy 2013-2020," Bridgetown.
[17] Barbados Government, 2004, "Sustainable Development Policy," Barbados Government National Commission on Sustainable Development, Bridgetown.
[18] UNDP, 2020, "Barbados Blue Economy Scoping Study," UNDP Report, Bridgetown.

to facilitate and support economic growth. This relied on a favourable policy and investment climate, spearheaded by government as a potential catalyst source for growth.

The IADB and Barbados government are updating the Inter-Coastal Zone Management Plan.[19] The existing circulated draft especially recommends that any blue economy approach or subsequent investment decision incorporate not only stakeholder consultation, but also an adequate environmental and socioeconomic impact assessment to ascertain related risks, benefits, costs, opportunities and suitable recommendations or mitigation measures. This is well advised to be based on a marine spatial planning and scientific, ecosystems-based approach that considers short, medium and long-term time horizons for the coast/marine interdependent sector for both the policy framework in Volume 1 and the plan in Volume 2. This also includes active stakeholder consultation and participation to protect community traditional usages, the future survival of marine ecosystems and protection of cultural/natural heritage. More specifically this plan's aim states:

> "*Developing a coast to be proud of, which is valued, appreciated and safeguarded as a place to live, work, use and relax; a place where economic activity and the use of its resources are sustainably utilised and managed, is resilient to climate change and other hazards, and where the natural environment is protected and enhanced to keep its essential and unique place in the Barbadian heritage and economy*."

It infers the need to ascertain and quantify ecosystem-based contributions from scientific methods; aim for participatory, accountable, transparent, equitable, and inclusive resource distribution and conservation processes; and to promote gender equality, youth empowerment and resilience against climate change and other threats, aligned to the SDGs.

UNEP also undertook a comprehensive Barbados green economy strategy.[20] As part of this, it developed a series of certain criteria that would have to be particularly established to be successful. Most notably, these included finance; development; access and transfer of clean technology; trade, tariffs and investment; taxation, incentives and fiscal reform; education, training and capacity enhancement; standards and regulation, along with government procurement. It provides examples of best practices that Barbados and related stakeholders can learn from; as the circular/green economy provides profit seeking motives for businesses and individuals to consciously mitigate against climate change, embrace renewable energy (including oceans), reduce ecological pressures and recycle waste. Its policy roadmap incorporates the need to develop specific institutional gap analysis and develop subsequent human resources, data monitoring systems, partnerships, education, training, empowerment and awareness capacity so that progress towards the green economy can be carefully ascertained. It is also critical to improve localised knowledge transfer and a centralising approach that connects and leads stakeholders forward towards this green economy future. For example, Barbados has fiscal incentives supporting renewable energy initiatives under the Fiscal Incentive Act. Under the Income Tax Act, taxpayers are encouraged to purchase 'green' devices as such expenditures were made deductible for tax purposes. It also contemplates the need to establish marketing/export incentives and import disincentives. This assessment confirmed the challenges of existing institutions, which have yet to adequately embrace the green/blue economy, with sustainable financing credit and other solutions; the need to simplify credit access and attain income diversification from more sustainable sources. This also includes improving resilience against climate change and other disruption risks. In 2020, Anniver was reported to be trying to familiarise and reach out to potential stakeholders across

[19] IH Cantabria, 2019, "Development of a Draft Updated Integrated Coastal Zone Management Plan and Amendment of the Coastal Zone Management Act and Preparation of CZM Regulations Incorporating Disaster Risk Management and Climate Change Adaptation Principles Barbados," IH Cantabria, Bridgetown.
[20] UNEP, 2014, "Barbados Green Economy Scoping Study," Bridgetown.

the Eastern Caribbean to promote awareness of the blue economy, its marine threats, risks and opportunities via a stakeholder sensitization project.[21]

From 2015/2016 attempts have been made to specifically focus on attracting ocean related blue growth investment including the private sector, whilst protecting the environment/oceans in Grenada. Grenada's 2004 National Strategic Development Plan (Grenada Government 2004)[22] has a National Vision proclaiming: "*The Spice Isle of the Caribbean, embracing a rich heritage that nurtures community and family values, with a united, educated, spiritual and hospitable people, thriving in a peaceful democratic environment, transformed by innovation, creativity, enterprise and equal opportunity for a better quality of life*." Climate change and natural disasters were identified as risks. The Plan focused primarily on the formation of economic growth and development, with fewer references to a sustainable environment. It sought to do so through encouraging measures that would enhance social, cultural, skills and physical/financial capital across sectors such as tourism, agriculture, agro-processing, construction and economic infrastructure. The fisheries sector was not covered. Specific reference to the oceans, marine, coastal sector received attention 12 years later through the Blue Growth Master Plan.

Grenada's 2016 Blue Growth Master Plan represents the main public guidance document for the nation and its participation in the blue economy.[23] This provides examples of specific planning objectives, policies and investment projects/priority sectors related to marine/blue economy sectors and referred to over $1,000,000,000 worth of physical investments, without specifying the precise details of these investments. It concentrates particularly on blue oceans, fisheries, tourism and communities. The overall Blue Growth Vision aspires to: "*Optimize the coastal, marine, and ocean resources to become a world leader and international prototype for Blue Growth and Sustainability*." Specific investment project examples and developments are outlined in Section 2.5, but the policy clearly presents a market-oriented, commercial approach designed to specifically attracting dedicated investments; through reducing bureaucratic planning requirements, identifying opportunities and warning against decisions that might substantially contribute to worsening threats to the coastal/marine environment that attracts tourists so far. The positive approach of a systematic, unified guidance across all marine/coastal environment, investment and development planning purposes is also confirmed by the 2015 Integrated Coastal Zone Management Policy for Grenada, Carriacou and Petit Martinique. This advises that any businesses, investments or policy decisions should embrace the Precautionary Principle - aiming to be cautious and pre-empt risk in the face of the unknown implications/impact costs of a decision; sustainability through awareness and physical monitoring processes; good governance or ensuring transparent, informed and accountable decision making and an equitable access to decisions. It also concentrates on the need for developing suitable governance structures and systems (as in the scope of Activity 3's subsequent report).

Grenada originally was to receive a specific Marine Economy Plan in supporting partnership under the Commonwealth Marine Economies Programme and UK Foreign and Commonwealth Office, as with St Vincent and the Grenadines, which would have been more focused towards the practical implementation and requirements of stakeholders identified to ensure that the nation could protect its resources, have a sound policy and a research, data collection and ocean surveillance/monitoring scheme. The existing 2018 programme alluded to the formation of a National Ocean Governance Committee to potentially serve as an active coordinating governance mechanism to unite all stakeholders, and that would appear a suitable source to be targeted for promoting, regulating and evaluating any subsequent blue

[21] McCue J, 2021 (a), "Rapid Assessment of National Blue Economy Strategies Final Inception Report and Proposed Methodology, " UNDP Barbados Report, Bridgetown.
[22] Grenada Government, 2007, "Grenada National Strategic Development Plan," St George.
[23] World Bank 2016, "Grenada Blue Growth Master Plan," World Bank Report, St George.

finance support processes.[24] CMEP in Grenada indicated the need not only to modernise hydrographic, ocean and environmental data but also to work towards developing climate change risk and impact assessments. However, as of September 2021, the draft form of this Marine Economy Plan had not been made available either publicly or to the consultant. The previous absence within the 2004 National Sustainable Development Plan of blue economy growth, marine conservation and integrated coastal zone management has not been amended in the 2020-2035 updated, National Sustainable Development Plan.[25] Its updated vision proclaims a future, "*where Grenada becomes a resilient and prosperous nation, with a conscious and caring citizenry, promoting human dignity, and realising its full potential through sustainable economic, social, and environmental progress for all*." In conscious recognition of the value and importance of ecosystems and natural heritage, this need to conserve the environment has been elevated along with the economy and society to the 3 main pillars of the plan:

> "*Goal 1: High Human and Social Development: Putting People at the Center of Sustainable Development and Transformation;*
>
> *Goal 2: Vibrant, Dynamic, Competitive Economy with Supporting Climate-and-Disaster-Resilient Infrastructure*
>
> *Goal 3: Environmental Sustainability & Security*."

If any blue economy national policy or individual financing/investment decisions were to be considered, this could be aligned to the existing Plan and its focus on aiming to implement eight specific outcomes. Most relevant are the measures to embrace reforms to stimulate broad based, inclusive and sustainable economic growth and transformation; aside from promoting a thriving and competitive business environment; climate and natural disaster resilience; energy security and efficiency. There is mention of the Blue Economy under Section 3.1.2.4 with an acknowledgement of the role of the private sector in restoring marine ecosystems, establishing marine tourism opportunities and the need to facilitate the Scuba Diving Cluster as a specific opportunity. It concedes certain measures need to be taken and supported to promote financial, investment, training, technology and other investment incentives. It also links this to the usage of sustainability, renewable energy and circular economy measures to mitigate against climate change and marine pollution related threats. Grenada has also completed the Caribbean Regional Ocean Policy Baseline Analysis Report assessment and gap analysis of national policies, and policy delivery capacity.[26] It is in the process of drafting and finalising a National Ocean Policy and Strategic Action Plan and the OECS Caribbean Regional Oceanscape Project is similarly engaged with its Coastal and Marine Spatial Plan.

St Vincent and the Grenadines currently has an Oceans Policy Framework from 2013/2014, and not a specific blue economy strategy.[27] This connects to its National Economic and Social Development Plan (2013-2025) under its first goal of "*reengineering economic growth",* with the priority: *"To optimise the economic contribution made by ocean resources*". This framework specifically focuses on ensuring that stakeholders are actively consulted to help develop a governance framework and institutional capacity. Although it indicated the challenges of finance as a possible concern, its goals specifically prioritised exercising legal control and jurisdiction to enable access, exploit and protect marine resources (Goals 1 and 2). The main elements concentrated on identifying relevant opportunities (similar to the scope of the McCue 2021 consultancy) under Goals 3 and 4 and the elements of marine spatial planning and

[24] United Kingdom Foreign and Commonwealth Office, 2018, "Commonwealth Marine Economies Programme: Enabling safe and sustainable marine economies across Commonwealth Small Island Developing States Grenada Country Review," Kingstown.
[25] Grenada Government, 2020, "Grenada National Sustainable Development Plan 2020-2035," St George.
[26] McCue J, 2021(b), "Rapid Assessment of National Blue Economy Strategies Deliverable 5: Activity 7, "UNDP Barbados Report, Bridgetown.
[27] "St Vincent and the Grenadines Maritime Administration, 2013, "Development of an SVG National Ocean Policy Discussion Document," Kingstown.

institutional capacity building under Goals 5 and 6. It also further recognises the need to ensure that the human workforce is sufficiently empowered to access opportunities through education and training. To encourage behaviour change, interest and action, it also focuses on improving consciousness and awareness of the ocean/blue economy under Goal 8. Being prepared to adapt decisions and policies to climate change and other disruption risks, adding flexibility to the policy is also received as critical under Goal 9. The overall aim is to: "*ensure a healthy and richly biodiverse ocean, sustainably managed in an integrated way to promote economic development and the livelihoods and aspirations of current and future generations*." This mirrors the elements and phrasing of the OECS Caribbean Regional Ocean Policy, indicating its crucial significance.

This policy has not zoomed in and prioritised the aspect of finance in providing examples of specific projects and investments that will be necessary to achieve these broadly stated goals. It is recommended, however, that any specific or overall proposed aid/other project and investment in SVG comply with the principles, desired by stakeholders as an outcome of this Oceans Policy Framework, including: contribution to sustainable development, the right to social/economic development and its access via empowerment whilst simultaneously preserving marine ecosystem health. Given threats marine environments traditionally encounter such as pollution, illegal and unsustainable fisheries, climate change, coastal overdevelopment, mass tourism and others, it also referred to the need to ensure adequate rights to conservation, duty and care, integrated ocean governance and conscientious, informed, knowledge-based decision making. This National Ocean Policy was being updated during 2019-2021, but a copy was not available to this consultant at the time of the Report's submission. It will subsequently be the focus of Deliverable 3.

St Vincent and the Grenadines was further meant to receive an updated Marine Economy Plan under the Commonwealth Marine Economies Programme, but for several reasons, primarily the COVID19 pandemic, it is not yet finalised.[28] Its existing programme focused on technical capacity building through updated hydrographic charts, improved data collection and seabed mapping to support conservation, fisheries, safe navigation, tourism, ocean governance and various planning activities.[29] The islands do possess a 2002-2006 Tourism Strategies Plan which was modernised in 2012, in recognition of the invaluable significance of the marine environment towards fostering investment, attracting visitors and interdependent economic demand for exports.[30] This policy included specific focuses on cruising, yachting, scuba diving and sports/game fishing. It created a specific marine/nautical tourism component and focal point for investment and marketing purposes, revising its customs and other legislation to encourage tourism related products and services. Infrastructure and tourism business incentives would be created in conjunction with regulations to try and protect especially fragile coral reefs and other parts of the marine environment. Tourism operators would have to comply with certain environmental/ocean standards and regulations, supported by fees.

A common review will identify that some of these policies have not detailed the need to practically finance and implement the blue economy. They do not provide examples of specific best practices, screening tools, assessment and monitoring criteria or significant consideration to the actual governance and coordinating mechanisms that will be necessary. Nor do they allocate specific resources to particular projects. Barbados' draft ocean/blue economy strategy echoes those of Antigua and Barbuda, the Bahamas, St Kitts and Nevis, St Lucia plus St Vincent and the Grenadines, in enforcing governance over their existing and extended Exclusive Economic Zones. It focuses on valuation and chartering, then determining action plans and the prioritisation of core resources and targets. These and other nations

[28] McCue J, 2021(b), "Rapid Assessment of National Blue Economy Strategies Deliverable 5: Activity 7, "UNDP Barbados Report, Bridgetown.
[29] United Kingdom Foreign and Commonwealth Office, 2017, "Commonwealth Marine Economies Programme: Enabling safe and sustainable marine economies across Commonwealth Small Island Developing States Saint Vincent and the Grenadines Country Review," Kingstown.
[30] St Vincent and the Grenadines, 2012, "Marine Tourism Policy," Kingstown.

have pledged common enforcement, monitoring, awareness and assistance via a Commonwealth Blue Charter, which also publicly commits members to sharing and disseminating resources, to cooperate with each other, to establish this mutually beneficial, climate resilient, sustainable, circular and marine/blue economy future.

2.3.3: Other Barbados, Grenada and St Vincent and the Grenadines Specific Plans and Policies (Related to Sectors)

Those businesses/investors who wish to participate in the regional and individual blue economies of Barbados, Grenada, St Vincent and the Grenadines will need to be fundamentally aware of the specific incentives, policies, frameworks and regulations guiding their individual sectors and locations, i.e., those relating to fisheries, ports, shipping, renewable energy, tourism, offshore oil and gas etc. This extends to potential threats such as marine environmental, safety, security, biodiversity, climate change and pollution. It is therefore important for investors to potentially refer to previous consultancies and outputs such as that by Johnathan McCue and Seifert in 2021 for more extensive analysis into the potential regulations and policies that may affect their determination to fund or not. Across all three nations; this consultancy established there were no specific policies or frameworks, providing legislative gaps related to the financing and investing of seabed mining, marine renewable/ocean energy; blue carbon promotion; blue and general biotechnology; maritime research, education and training or blue economy finance and investment specific policies (aside from generic banking regulations). Investors may be unfamiliar as to whether any potential incentives/disincentives, specific investable projects and legal requirements exist for each policy. Aquaculture also remains absent, as do policies to promote maritime decarbonisation and supply chain adaptation/resilience to climate change and other threats. This therefore is identified as a significant gap.

For Barbados, the fisheries sector is supported by the 1995 Fisheries Act, which focuses more on outlining associated management structures, legal enforcement capabilities, administrative and licensing requirements than on promoting finance, training, research and ecological conservation. Any businesses, including entrepreneurs but also potential investors, are therefore urged by this consultant to familiarise themselves with the operating legal environment, along with any related regulations, incentives and disincentives. Any legal gaps may turn out to become exploitable investment opportunities. The Fisheries Management Regulations are more technically committed to restrictions on equipment and methods such as banning explosives and poison use. There is no provision made for specific market, legal or other incentives and measures to support and invest in the fisheries sector. Aquaculture is also insufficiently addressed through clear policies with spelt-out, investable projects, which can further deter related investors due to regulatory uncertainty. However, other fisheries related policies include the similar but updated 2001 and 2004 Fisheries Management Plan, the 2013 Fisheries Policy and 2021 Fisheries Regulations. These concentrate on not only committing to supporting investment in infrastructure, but also on changing policies/legislative reforms to simplify ease of business, promote responsible sustainable fisheries management and resource/livelihood protection. In 2021 Barbados drafted an updated fisheries regulation which primarily focused on equipment, methods and other measures to minimise collateral damage to individual marine species along with coral reefs and other fragile ecosystems. This applies to direct fishing related producers and companies.[31] It specifically protects turtles, restricted lobsters and bans sharks being slaughtered for their fins. Barbados also condemns and punishes deliberate marine pollution damage under the 1998 Marine Pollution Act, with penalties for violators.

[31] Barbados Ministry of Maritime Affairs and the Blue Economy, 2021, "Introduction of the Draft Fisheries (Management) Regulation",

Barbados has a 2019 to 2030 based National Energy Policy, to reduce imports and utilisation of fossil-based fuels, and to commit to 100% carbon neutrality and renewable energy being generated over that time period (Barbados Government 2019). This comprehensive and visionary policy, while specifically referring to the deployment of marine/ocean renewable energy, has been followed by the Barbados government commissioning a series of studies in 2021 by ITP-Energised to investigate the technical, ecological and economic feasibility of such investments, as detailed in following sections.[32] This consultancy identified 16 possible ocean energy project scenarios with 6 selected and ranked in order of priority. Fixed and floating offshore wind turbine systems located off Barbados's north coast were the preferred options. Theoretical resource potential for conventional floating wind (in 60-200 metre water depth) in Barbados is estimated a 189 MW, with over 8 GW of potential for deep floating wind (in depths of 200-1000 metres) Barbados's Ministry of Energy, Small Business and Entrepreneurship is considering having ocean energy technology operational on the island to contribute to the Barbados National Energy Policy target of 100 % renewable energy by 2030. However, they have secured a $30,000,000 loan from the IADB for solar energy. The 2014 to 2023, Tourism Master Plan aims to promote more environmentally respectful, sustainable ecotourism including "enhancing the visitor through natural heritage" and to mainstream environmental management. Other legislation has been comprehensively addressed in previous consultancies and research,[33] aside from the previously stated Integrated Coastal Zone Management Policy Framework (Barbados 2020), updating the 1998 Coastal Zone Management Act and various blue economy policy documents under review. This includes the regular update requirements to report on nationally determined contributions of greenhouse gas emissions contributions to climate change under the Paris Agreement and United Nations Framework on the Convention on Climate Change.[34] As a signatory to the Convention on Biological Diversity, Barbados also has to report on any changes to marine and land biodiversity, ecosystems and environments.[35] It also undertook an updated review into cruise tourism in 2019.[36] Despite the COVID19 pandemic, current research has also conducted a survey to evaluate coral reef health in Barbados.[37]

Grenada has a number of regulations and policy management frameworks. Fisheries are covered under the "Country Programme Framework for Grenada's Agricultural Sector 2011 to 2016'', which is described in a 2011 document by the FAO and Grenada Government. This concentrates on promoting food security, nutrition and exports, effective health and sanitation and measures against risks of climate change and transboundary diseases. It does not cover financial, tax and other incentives. Grenada has also undertaken various initiatives such as a general study on renewable energy and climate change along with implications for water security published by the Government in 2012, entitled: "Climate Change Adaptation in Grenada: Water Resources, Coastal Ecosystems and Renewable Energy." It publishes updates on emissions contributions, a National Climate Change Policy and a climate change adaptation monitoring and evaluation system.[38] Grenada has undertaken a 2009 report – "Grenada Country Report Aquaculture" - highlighting the issues facing this sector, including the need for a pilot demonstration farm project. In 2019 CARICOM gave a presentation to the government, conceding the need to create systems related to national ocean economy accounts and statistics. This was regarded as an initial stage to attract investors and businesses to overcome an unemployment rate in excess of 30%, by understanding existing and future potential macroeconomic contributions. It

[32] Barbados Government, 2021 (a), "Ocean Energy Studies," ITP-Energised," Bridgetown.
[32] UNDP, 2020, "Barbados Blue Economy Scoping Study," UNDP Report, Bridgetown.
[34] Barbados Government 2021 (b), Barbados 2021 Update of the First Nationally Determined Contribution," Bridgetown.
[35] Barbados Government, 2019, "Sixth National Report to the Convention on Biological Diversity
[36] Barbados National Cruise Development Commission, 2019, "An New Dawn For Cruise Tourism in Barbados," Barbados Gov't Report.
[37] Barbados Government Coastal Zone Management Unit and CERMES, 2020, "Status of Coral Reefs Report, Bridgetown.
[38] Grenada Government, 2017(a), "Grenada, Carriacou and Petit Martinique: Second National Communication to the United Nations, Framework Convention on Climate Change". Grenada Government, 2017(b), "National Climate Change Policy for Grenada, Carriacou and Petit Martinique." Grenada Government 2019, "Developing a Climate Adaptation Monitoring and Evaluation System for Grenada's National Adaptation Plan. A Technical Report Based on Expert Interviews and the Results of a Government Consultation on July 24–26, 2019."

would also help to overcome ocean acidification, pollution, coastal erosion, solid waste dumping and other problems by identifying information system metrics that would record changes in the condition and value of coastal environments. The need for accurate data is essential in ensuring that blue economy related capital inflows actually enhance ecological values and economic contributions, rather than detracting from its potential with further problems. Tourism, ocean energy and other non-fisheries sector areas also need inclusion. However, more detail will be provided concerning the need to improve data systems in Report 4.

Grenada's maritime sector has to comply with the 1981 Port Authority Act, 1995 Shipping Act and 2010 Port Regulations. A specific management plan to protect the marine environment was created for the Molinièr-Beauséjour Marine Protected Area in a report in 2010 by the Grenada Ministry of Agriculture, Forestry and Fisheries. An oil spill contingency and response pollution reduction plan was drawn up by the Grenada National Disaster Office in 2016 in a Report entitled: "Standard Operating Procedure for Oil Spill Response," as was an assessment of the nation's vulnerability to disaster risks, aside from climate change.[39] This may aid the insurance and financial sector in calculating more accurate risk probabilities, the extent of insurance premiums and structuring credit finance. Grenada also has a National Biodiversity Strategy and Action Plan 2016-2020 combined with regular updates to the Convention on Biological Diversity," to ascertain the status of terrestrial and marine ecosystems, to ensure conservation is considered and prioritised for business and planning development decisions[40] (Grenada Government 2016; Grenada Government 2019). The Grenada Government also has published a 2011 "National Energy Policy of Grenada". These documents are also detailed in Annexure II, Core Document Sources.

Potentially relevant legislation for St Vincent and the Grenadines includes the 1986 Fisheries Act, which supports similar fisheries management administration, licensing and regulations as the other two nations. Although it is 35 years old, it remains legally valid and is still considered a requirement to aid related sectoral investors and investment. However, it does not embrace many of the more recent sustainable fisheries' principles, technologies and methods, that other nations are requiring operators, the insurance and financial sector to follow. There are also the St Vincent and the Grenadines National Energy Policy (2009)[41] and Energy Action Plan, (2010)[42] which aim to reduce dependency on imported fossil fuels, exploit indigenous resources and improve energy efficiency. The Energy policy seeks to explore and promote renewable energy sources and new generation technologies that are environmentally, economically and socially viable. The comprehensive Energy Action Plan looks at, amongst other aspects, setting up a fund to support pilot and demonstration projects around energy efficiency, and to look at the integration of renewable energy, with a main focus on wind and solar power. These open the way to considering other ocean energy types such as wave, offshore wind, tidal, salinity gradient, current, ocean thermal energy conversion, floating solar-voltaic and associated forms of marine renewable energy. [41]

Aside from the 2013 National Ocean Policy and previously cited Marine Tourism Policy, there is the Sustainable Grenadines 2012 generated policy document that embraces marine spatial planning for the Grenadine Islands. Any potential funder or investor will have to consider the principles of water conservation and integrated resource management, including taking active measures against risks of marine pollution or oil spills, if applicable.[43]. It is advised,

[39] Grenada National Disaster Office, 2016, "Standard Operating Procedure for Oil Spill Response," Grenada Government, St George; Grenada Government, 2014 (b), "Country Documentation on Disaster Risk Reduction for Grenada," St George.
[40] Grenada Government 2016 (b), "National Biodiversity Strategy and Action Plan 2016-2020," St George; Barbados Government, 2019, "Sixth National Report to the Convention on Biological Diversity.
[41] St Vincent and the Grenadines, 2009 (a), "National Energy Policy," Kingstown.
[42] St Vincent and the Grenadines, 2010, "Energy Action Plan" Kingstown.
[43] St Vincent and the Grenadines, 2009 (b), Draft SVG Oil Spill Plan,"; St Vincent and the Grenadines, 2013, "Road Map toward Integrated Water Resources Management Planning for Union Island, St. Vincent and the Grenadines," Kingstown.

however, that legislation may have to overcome existing gaps, as previously indicated to incorporate specific guidelines, incentives and disincentives to ensure sustainable, responsible and effective investments re attracted to all three nations.[44] Blue biotechnology, marine research and blue biotechnology/blue carbon and marine protected areas; remain other examples of potential blue economy investment that have yet to be restructured to specifically encourage sustainable ocean or blue finance.

2.4: Introduction to Blue Economy/Climate/Sustainable Finance and the Problems it will Solve (Activity 1). International Best Practises and Sources that have Expressed an Interest in Investing.

Blue Economy access to finance has been established as one of the most significant challenges that any blue oceans economic strategy, framework or implementation plan needs to secure. This is recognised in the Caribbean aiming to promote investment market friendly and entrepreneurial initiatives, given governments alone cannot sufficiently secure this future without private sector willingness to become involved and commit.[45] Existing coral reefs decreased over 30% and 70% of beaches are experiencing significant erosion. Renewable energy only comprises 20% of the average total Caribbean power sources. High opportunity and inaction costs exist in favouring a "business as usual" approach. Therefore, States are seeking to reduce moral hazard and asymmetrical information constraints for businesses and individuals. Initiatives such as the 2009 Caribbean Large Marine Ecosystem Project and the Caribbean Regional Oceanscape Project further strive to accomplish this through a formal knowledge hub and evaluation of policies to coordinate effective blue economy growth. A Caribbean Catastrophe Risk Insurance Facility has existed since 2007, but is being revised to be far more relevant in reference to the blue economy. New provision is made for alternative financing/insurance processes via the Oceans and Aquaculture Sustainability Facility options, including climate funds, impact and blue bonds; debt swaps; aid; crowdsourcing; diaspora funding and remittances; insurance; blended financing; taxes and tourism/conservation levies and sovereign wealth funds. Within the three countries, however, these are in varying status of readiness which would have to be verified through surveys. Climate financing sources are comparatively well advanced as detailed in Section 2.4. Impact and blue bonds along with aid and debit swaps are starting to be explored or proposed by agents such as the Nature Conservancy and World Bank. These need to be accompanied by ring-fenced safeguarding measures to ensure transparency and accountability so funds are channelled off directly into blue economy related policies. At present, diaspora funding and conventional remittances, crowdsourcing, plus credit, loans and insurance from the conventional financial sector, or blended financing, taxes, tourism/conservation levies and sovereign wealth funds have not been considered, being historically risk averse but need to be actively approached and consulted within the 3 countries.

The Blue Economy extends to many ocean and emerging blue economy activities as identified in Table 1.2. Each presents significant opportunities for sustainable finance provided that sufficient attention is paid to the need to preserve long term ecological and economic functions as much as possible as highlighted in Table 1.3. Although many emerging opportunities, risks and developments have manifested with the surge of interest in the blue economy - from marine biotechnology and pollution reduction/the circular economy, to cruise and ecotourism, education and training, drones, ocean governance and others - this has yet to be matched by a correlating increase in related finance, despite myriad expressions of interest and pledges. As subsequent analysis will investigate, this research aims to provide an independent and experienced professional blue/maritime and climate change economist's perspective on the extent to which blue economy finance is available to stakeholders dreaming of achieving this future, with application to

[44] St Vincent and the Grenadines, 2009 (a), "National Energy Policy," Kingstown.
[45] Caribbean Development Bank, 2019, "Caribbean Development Bank Strategic Plan 2020 to 2024, Caribbean Development Bank Report, Bridgetown.

Barbados, Grenada, St Vincent and the Grenadines. Subsequent sections will cover various sources, criteria, tools, mechanisms and best principles from government, regional/multilateral organisations, aid agencies, the private sector, other sources and for entrepreneurs. Globally, a significant research gap exists on a synthesised analysis of the best practises and tools needed to undertake investments and financial support. Climate/sustainable green, conservation and circular economy finance may also present certain applicable examples, although not the main scope of this report.

Although blue economy finance and investment has only been accorded more importance over the past 2-3 years, the report aims to map current progress of more specific investors in relation to the scope of this study and the potential examples of best practises and guidelines followed. It recognises the need to provide an update on blue economy developments, investors and finance trends/policy developments that directly or indirectly have the potential to influence the implementation of the blue economy within Barbados, Grenada and St Vincent and the Grenadines as of October 2021. This subsequently will aid stakeholders with scarce time, financial resources, information, labour or other resources aiming to locate and prioritise sustainable ocean or blue/marine economy and conservation finance, whether as individuals or companies with an idea, project or product; governments, academics and other policy stakeholders seeking to advance the blue economy and myriad developments; NGOs seeking support or investors seeking a viable rate of return on investment and curious as to their possible competitors. Globally, and across many organisations and investors, the blue economy is receiving increasing attention in policy frameworks, as people strive to radically transform the oceans. Any Blue economy policy framework increasingly needs into capitalise on emerging innovations, ingenuity, entrepreneurship, finance and ideas to resolve impending threats from global climate change and its impact on maritime logistics channels, ports and blue economy activities.

Aside from formal blue economy sectors and their investment and individual business opportunities; there is considerable profit and scope to be determined from handling problems such as climate change; illegal, underreported and unregulated fisheries; decarbonisation and risks such as marine plastic and other pollution, together with the circular economy, both globally and across the 3 countries within the study. However, if ignored by governments, the private sector, businesses and individuals, these sectors have significant impact costs towards the future of our oceans and dependent blue economy. It is difficult to accurately forecast the total extent to which marine pollution, plastic waste or any other type exists; the resulting direct, indirect and intangible impact cost consequences it produces, or how it specifically threatens the future prospects of the blue economy. Over 9.2 billion tons of plastic were reported by UNEP as being produced between 1950 and 2017 - up to over 380,000,000 tons per year. 44% is produced by Asia. Over 500 billion single use plastic bottles alone form part of this waste of resources, when glass substitutes exist. The UK Royal Statistical Society in 2019 estimated 90.5% of all waste has never been recycled, 12% was incinerated and 79% became litter or landfills. UNEP estimated an average of 2.3 kg of litter per person per day on average for small island developing states. Within the Caribbean, UNEP estimate 70-85% originates from the land, whereas the World Bank estimate over 322,745 tons of uncollected plastic pollution every year enters from the islands. A World Bank report has quantified the amount of waste produced per capita per day as 0.83 kg for Grenada; 0.79 kg for St Vincent and the Grenadines, and 1.72 kg for Barbados.[46]

While no survey appears to have yet quantified the specific plastic volumes across all three islands at any given time, nor the significant impact costs these create, it is imperative that local citizens within Barbados, Grenada and St Vincent and the Grenadines realise how unresolved plastic and refuse problems can deter fisherfolk, tourists and investors, detracting from associated market values. These present as yet unquantified economic, ecosystem and public health

[46] Kaza S, Yao L, Bhada-Tata P and van Woerden F; "What a waste 2.0 – a global snapshot of solid waste management to 2050." World Bank. 2018. Viewed at Openknowledge.worldbank.org/handle/10986/2174.

risks from asthma to obesity, thyroid disorders, cancers, choking, poisoning, infertility and other issues. Synthetic polyester textile fibres also contribute to marine waste. Further projected waste is expected to emerge as a result of the COVID 19 pandemic from rubber gloves, masks and other disposable items, even more in the short term than single use plastic and rubber items. Marine pollution from these items and other sources threatens over $400 billion in regional Caribbean Sea income, over $2,000,000,000 in dive tourism, food security for 40,000,000 people and 200,000 direct jobs. More specific to this report is the transboundary nature of the problem, require not just individual circular economy and other blue financing solutions as a priority investment, but also associated levels of commitment. Although this project's scope is meant to focus on highlighting issues related to a blue economy finance and investment framework for Barbados, Grenada and St Vincent and the Grenadines, being proactive and responding to risks, through related investment incentives to encourage the uptake of solutions by businesses and created by entrepreneurs, will indirectly benefit other sectors such as fisheries and tourism.

Other solutions needed in the three countries at present and for the future for sustainable ocean or blue finance to be mobilised extend to marine biotechnology, aquaculture and eco-protection, which can radically transform food security, human health and waste reduction. Reviving fishing harbours, small marinas and eco-tourism can preserve communities, heritage and ecosystems. Marine renewable power and biofuels can provide alternatives to empower and transport our cargos and selves. The circular, green and blue economies can resolve issues of pollution and waste via greater sustainability. The three countries are presently advised to consider the replicable examples and experiences of other regions such as Europe to consider a more developed area, given its nascency in the region. The European Commission support the transition towards the circular economy through both economic market and more direct regulation/education approach incentives along with research, funding; waste infrastructure, aid and outreach endeavours. It envisions potential to generate 580,000 jobs, save 600 billion in costs for European businesses and by 2030 simultaneously curb carbon emissions by over 450,0000,000 tonnes from greater recycling and reduced production/incineration. It estimated marine litter costs of at least $16 billion. Therefore, innovations and financial support mobilised for the blue economy can manage rapid human overpopulation; preserve biodiversity loss and species; enable greater safety, security and climate proof supply chains against climate change. It can radically reduce poverty and support myriad community livelihoods, whilst remaining profitable through reconfigured education, economies, communities and environments. More blue carbon, ecological sanctuaries and other investments can prove to be profitable, sustainable financed and a pathway out of debt -such as in a debt for nature swap. There are also significant possible growth prospects for the Caribbean from the as yet unexamined blue biotechnology market prospects. For example, the global blue bio-economy currently exceeds US $176 billion and food security to over 3 billion people. Internationally a number of Indian Ocean Rim Association, Commonwealth, US, Japan and other nations are investigating marine biotechnology potential prospects, a trend that has not been so swift to be emulated by the Caribbean, including Barbados, Grenada and St Vincent and the Grenadines.

Very few specialised research studies have been publicly disseminated or privately financed to consider how much progress has been made regarding the various financing sources and contributions made by stakeholders so far or to detail the criteria they use for their choices, motivations for their behaviour, or what else remains necessary to capitalise further on blue biotechnology, marine pollution reduction and other blue economy activities. Improved awareness of the value to be obtained in prioritising blue natural capital, carbon, biomes and environments can provide direct alignment to altruism but also profitable and enlightened self-interest to change behaviour to be more sustainable. There is a recurring need not only for overcoming existing barriers of information uncertainty, asymmetrical information, creating a network of stakeholders and deciphering the psychological reluctance of people to invest, but focusing on overcoming the great gap between pledged or potential blue economy/sustainable ocean finance versus the reality.

2.4.1: International Best Practices and Sources that have Expressed an Interest in Investing.

Global maritime finance and ocean finance is traditionally structured towards tax revenues, government grants, infrastructure bonds, conventional maritime insurers and commercial banks for shipping and cargo, along with the user pays principle for commercial ports and maritime services. This report proposes future research focus on new sustainable ocean/blue economy financing solutions to ensure success. As subsequent sections will examine, funding is accessible from a variety of sources including the Seychelles and Norwegian blue economy bonds; conservation finance and donation by NGO supporters and philanthropists to individual entrepreneurs, and technical start-ups such as the Portugal Blue Lab Accelerator Network, UNDP Blue Labs and others across the USA and Mediterranean. Additional opportunities exist to create new blue economy banks and risk management models incorporating climate change. They include maritime stock exchanges with blue carbon and ocean economy bonds, shares, venture capital and crowd sourcing. Existing insurance firms, sovereign wealth and pension funds plus individuals could invest further in maritime ecological capital and other products and services specifically recognising and assimilating to climate mitigation and adaptation.

In a 2017 European Commission study to support investment in the blue economy, it outlined and supported the need for a potential Blue Economy Fund and Investor Platform, indicating 112 certain stakeholders who served as potential investor sources (Table 2.4.1).[47] This table is therefore also included to demonstrate how many stakeholders across Europe are actually becoming aware and interested in related blue economy opportunities. Although many have not yet actively invested in such and thus related information is sparse, an increasing number are globally operating and thus potentially interested in the three countries contained within the scope, even if they are mostly as yet unaware of which investment prospects exist locally and need more outreach and engagement by the respective Blue Economy Implementing Committees. It is an example of international best practice that could be converted into a Blue Economy Observatory Platform for Barbados, Grenada and St Vincent and the Grenadines to overcome existing information gaps and entice more investment flows. It estimated the blue economy directly contributes 5% to European GDP. Of 115 initial investment companies, 72 were selected for the proposed Blue Economy Investment Platform, ending up with 67. Sources include crowdsourcing; public and private banks; investment fund managers; investment platforms; accelerators; EU financial institutions and various other types. It is an increasingly recent trend as 65% were formed in the past 5 years (since Horizon 2020) and 35% in the past 3 years. European ports have access to at least €2,200,000,000, blue biotechnology €3,700,000,000 and €2,600,000,000 for marine renewable energy. Coastal protection is significantly lower with only around €222,000,000. Unknown but limited finance exists for marine and coastal tourism, aquaculture and other activities including the marine/circular economy. The source argues myriad investment gaps exist including the need for €30,000,000,000 to decommission old North Sea oil and gas platforms, €48,000,000,000 for seaports (excluding climate-proofing of €100-250 billion), €22,500,00 to €30,800,000,000 for marine renewable energy and unknown for tourism, aquaculture, small harbours, desalination and other activities including maritime education, training, research, entrepreneurship and ocean governance. Although not specifically targeting the blue economy or oceans, the EU High Level Expert Group on Sustainable Finance focused on the need for increased awareness, incentives and guidelines to provide more certainty towards this nascent sector. These would consider social, environmental and other responsibilities initially with green bonds, preserving natural capital, agriculture and ocean purposes as much as they were capable of. It extended towards a retail strategy and criteria to form sustainable finance, to incentivise others to purchase, invest and support this initiative.

[47] Dyer J, 2020(b), "Mapping Progress Towards Sustainable Ocean Finance: An Update on Blue Economy Developments, Investors and Finance Trends," Durban.

Table 2.4.1: Investor Sources Who Have Expressed Potential Interest in the Blue Economy

Possible Blue Economy Investor Source	Level of Interest	Founding Year
500 Start Ups	Medium	2010
8F Asset Partners	High	2016
Ace Management France	High	1995
Alimentos Ventures	High	2015
Aloe Private Equity	High	2003
Althelia Ecosphere (part of Mirova)	High	2011
AMA Capital Partners	Medium	1997
Aqua-Spark	High	2013
A-Spark	Low	2005
Baille Gifford and Company	Low	1904
BCK	Low	1924
BCK Mid-Cap Investment Platform	Low	1924
Blue Economy Fund	High	2017
Blue Ocean Capital	Medium	2005
Bonafide	High	2009
BPI France	Medium	2012
British Business Bank	Low	2014
Brookfield Investment Management Low		1960
CAP TRI IN NORD_PAS DE CALAIS -Low		
Catch Invest High		2017
Calaxe des Depots Low		1818
CDP Climate Change Risk Sharing Investment Medium		2016
CDP IP-Mid-Cap Low		
Circularity Capital Medium		2018
CIT Group Low		2002
Clarmondial AO Low		2018
Clearwater Marine Investments Medium		2002
Connecting Europe Facility Low		
Continental Advisory Services Low		2002
Coperton Equity Fund	Medium	2016
Copenhagen Infrastructure Partners	Low	2012
COSAVE	Low	2014
Cowan	Medium	1918
CRX Marine	Low	2012
Devonian Capital	High	2015
Diorama Hellenic Growth Fund	Medium	2017
Ekosea	High	2017
Elbe Financial Solutions	High	
Elite Basket Bond 1	Medium	2018
Encourage Capital	High	2014
Ermat Runen	High	1985
Eurofin Group	High	1964
European Agricultural Fund for Rural	Low	
European Business Network	Low	
European Maritime and Fisheries Fund,	High	2014
European Social Fund	Low	
European Regional Development Fund	Medium	1975
FOND-ICO-Global	Low	
Fortitude Capital	Low	
Fonde SPI	Low	
Fomy-bar AS)	Medium	

French Overseas Territories Infrastructure RUP	Low	
Global Investment Maritime Fund	Medium	2010
Green Climate Fund	Low	2010
Green Investment Group Macquarie	Low	2012
Green Metropole Fund	High	2017
Green Shipping Loan Programme	High	2015
Green Shipping Guarantees Programme	High	2016
Greenbackers Investment Capital	Low	
Green Bridge	Low	2012
Growth Equity Funds Mid-Caps	Medium	1995
Haf Limburge Energy Funds	Medium	2013
Innofin Energy Demo Projects Pilot	Low	
Innofin Large Projects	Low	
Innofin Midi-Cap Growth Finance	Low	
Innofin Midi-Cap Quarantine	High	2014
Innofin SME Quarantine	High	2014
Innofin SME Venture Capital	High	2014
International Finance Corporation	Low	1955
IPSA Maritime	High	2012
Italia Venture Fund	Medium	2015
ITATECH	Medium	2015
Katapult Ocean	High	2015
KW Bank	Low	2005
Knedlach	Low	2012
Marine Capital Ltd	Medium	2003
Maritime Asset Partners	Medium	2017
Maritime Equity Partners	Medium	2009
Maritime Investment Fund	Medium	2010
Maradar	Low	2005
Meloy Fund for Sustainable Community Fisheries	High	2015
Mermaid Investment	High	2017
MT BS	Low	2017
Mubadala Investment Company	Medium	2017
Multi-Country Investment Platform for SMEs	Low	2015
Nambas Atlanpole	Low	2015
Neptune	High	2015
NER 300	High	2013
New Enterprise Associates	Medium	1977
Nordic Investment Bank	Medium	1975
Northam Shipping Fund	High	2008
Ocean Solutions Accelerator	High	2015
Oceano-Azul	High	2015
PW	Medium	1995
Port XL	High	2015
Pro-Venture	Medium	2007
Rotterdam Port Fund	High	2015
Scottish Enterprise	Low	1991
Scottish Equity Partners	Medium	2000
Scottish Investment Bank	Medium	1991
Scottish Investment Fund	Low	
Seabury Capital	Low	1995
Seedra	Low	2009
Sky Ocean Ventures	High	2017
Strategic Banking Corporation of Ireland	Medium	2014
Swedbank	Low	2006
Televentures	Low	1993

The Yield Lab	Medium	2014
Triodon Bank	High	1980
Scottish-European Growth Co-investment	Medium	2017
Baltic Innovation Fund	Medium	2012
Innoenergy	High	2008
ABN AMRO	High	1991
Rabobank	High	1972
ASN Bank	High	1950

Source: European Commission 2017

However, this research found insufficient information or evidence exists for the majority of these companies, whilst other sources of equity could be better verified. Very few have specific investment trends at this point. The source remains Euro-centric rather than focusing on global needs and prospects across various blue economy activities and marine ecosystems, including blue carbon and protected areas or natural capital. Several sources are proposing recommendations or guidelines as to how blue economy finance should be structured, but the only one to receive significant credibility and consensus is the 2017 UNEP Sustainable Blue Economy Finance Principles, endorsed by the World Ocean Council and an increasing number of the more committed and proven investors.[48] These Principles ultimately attempt to conserve marine/coastal ecosystems and biodiversity to the highest scientific, social, economic and environmental standards. They were drafted by the WWF, European Investment Bank, European Commission and Prince of Wales International Sustainability Unit, but have been endorsed by over 60 major investors and financial institutions along with being cited in an increasing number of sources as best practise examples. They are therefore worth considering for this consultancy's objectives to establish previous best practices for the three countries contained within the scope of this report as over 100 leading investors have signed up to these particular Principles. They therefore have the advantage of familiarity, along with being adaptable to the various national and regional plan priorities, divergent types of investments and simultaneously social, ecological and economic priorities, whilst considering specific blue economy activities and priorities. Through collaboration, stakeholders will be able to share associated information, experience, guidance, training, networking and support. These 17 Principles for Sustainable Investment in the Blue Economy include the following:

1: Productive: We will ensure that the projects we support restore, protect or maintain the diversity, productivity, resilience, core functions and value of marine ecosystems.
2: Compliant: We will ensure the projects we support are compliant with international, regional and national and voluntary frameworks which underpin sustainable development and ocean health.
3: Risk aware: We will ensure the activities we support have identified the social and environmental risks and impacts and have management plans.
4: Adoptive: We will adapt our decision-making processes and activities to reflect new knowledge of the potential risks, impacts and opportunities associated with our investments.
5: Systemic: We will ensure that the projects we support have identified the systemic and cumulative impacts of their activities including across their value chain, across different sectors, across borders and between land and maritime based activities.
6: Incisive: We will ensure that the projects we support engage with, include, support and enhance local livelihoods and that they have a stakeholder engagement.
7: Holistic: We will make investment decisions based on a long-term assessment and accounting of economic, social and environmental values, quantified risks and systemic impacts.

[48] UNEPFI, 2020 (a), "Sustainable Blue Economy Finance Initiative," UNEPFI Report, Geneva.
UNEPFI, 2020 (b), "Sustainable Blue Economy Finance Principles," UNEPFI Report, Geneva.

8: Cooperative: We will cooperate with other financial institutions to promote and implement these Principles, best practises, lessons learnt, perspectives and ideas.
9: Transparent: We will disclose our investments and their social, environmental and economic impacts (both positive and negative). We will also report on progress in implementing these Principles including on the percentage of our investments that follow these Principles.
10: Purposeful: We will endeavour to direct investment that contribute directly to the achievement of Sustainable Development Goal 14 (Life Below Water) and other Sustainable Development Goals which contribute to the management of the oceans.
11: Impactful: We will ensure that the projects we support provide social, environmental and economic benefits to current and future generations.
12: Precautionary: We will ensure that the projects we support have assessed the environmental and social impacts of their activities based on sound scientific evidence. Where scientific data is not available, the precautionary principle will prevail
13: Proactive: We will actively seek to develop knowledge and data on the potential risks and impacts associated with our investments as well as sustainable investments in the blue economy.
14: Diversified: Recognising the importance of small and medium enterprises in the Blue Economy we will endeavour to diversify our investment our investment instruments to reach a wide range of sustainable development projects.
15: Solution driven: We will endeavour to direct investments to innovative, commercial solutions to maritime issues (both land and ocean based -including circular economy approaches that have a positive impact on marine ecosystems and ocean dependent livelihoods
16. Partnering: We will partner with public, private and nongovernmental sector entities to accelerate progress towards a sustainable blue economy.
17: Sharing: We will endeavour to Invest in and share scientific information and data on the marine environment.

Existing sources on sustainable ocean finance or the blue economy also allude to blue natural capital, carbon or an ecosystem-based approach that incorporates traditional investment, but also new social, environmental and marine based criteria in determining a rate of return, dividend or profit and risks. Examples include the Blue Natural Capital Financing Facility and its Positive Impacts Framework considering habitat and species conservation with set performance indicators. Global ocean finance includes funds by donors devoted to conservation finance; climate change; illegal fisheries and ocean governance, and other aid, grants or finance that can be devoted towards ocean, coastal or marine based risks; problems; innovations; technology; entrepreneurship; education and awareness; support; sustainable resource extraction, utilisation or processing; protection; conservation and restoration. Whilst funding and finance have rapidly increased, existing sources still reflect a mere fraction of what is increasingly necessary to really commit to the blue economy.

Many of these investments can be far more profitable for savers and investors when compared to increasingly lower global trends from historically low interest rates other more traditional forms of investing. The COVID 19 epidemic has helped to prompt an even greater, more desperate search for higher yield, more sustainable investments. The Seychelles Blue Bond was initially oversubscribed with a 15 year lifespan offering a 6.5% return. It was structured for $12 million for blue economy development activities and $3,000,000 for ecological conservation. In January 2019, the Nordic Investment Bank was also in offering a 0.375% return for a $200,000,000 blue economy bond. Blue bonds prioritise reducing vulnerability, enhancing resilience, ensuring sustainability and profitability whilst conserving livelihoods, heritage and ecosystems. One study on blue bonds by the Blue Natural Capital Financing Facility indicates the need for adequate monitoring and verification processes, impact management processes and investment ready,

viable projects[49]. The quantity of blue carbon produced or emissions absorbed could provide a potential indicator along with the extent of progress towards implementing local or regional policies or United Nations Sustainable Development Goals - especially Goal 14. Blue bonds remain comparatively recent with examples dating back to 2018. Few investors provide detailed specific information related to this sector, hence certain significant data collection challenges and omissions exist. In contrast green economy bonds date back to the initial 2007 Climate Awareness Bond for €600,000,000 and a 2018 Fiji green bond for $60,000,000. Others include social and sustainable bonds. Additional bonds are being proposed for countries in the Caribbean, South Pacific and Africa such as Grenada, Fiji, Cape Verde, Sao Tome and Principe, and Mauritius, although still in the conceptual phase. Although funding may exist; comparatively few investors presently have significant global awareness or experience, and few stakeholders have the familiarity or insight into the local markets and environment, to mobilise sustainable blue or ocean finance towards specific projects in the Caribbean including the three countries of Barbados, Grenada and St Vincent and the Grenadines, hence the significance and motivation for this consultancy assignment.

Aside from information, stakeholders frequently lack case studies of proven, viable projects that can yield sufficient returns, are scalable and replicable, with sufficient profits and incentives to attract market buyers and create a meaningful difference socially and ecologically. Thus is a global trend observed through direct participation by this consultant in serving on the World Ocean Council Blue Economy Investor Network and Roundtable, previous related blue economy and sustainable financing research and several interviews and surveys conducted to impact researchers during this consultancy. Roth, Thiele and von Unger estimated green bonds raised over $80.47 billion between 2016 and 2018 with over $21.5 billion from China. The Oceans Assets Institute affirms the popularity of both green and blue bonds as a financing mechanism for island developing states such as in the Pacific and which may also have potential relevance to the Caribbean[50] It estimated a global market worth over $200 billion for green bonds. Other sources include blended finance, loans, equities, subsidies and more conventional investment types. To achieve Sustainable Development Goal 14 in relation to the oceans, it recognised the need for the private sector to breach the government finance gap of over $2.5 trillion. Aside from the myriad economic benefits it could provide stability against numerous problems including climate change; conflicts over resources; ocean governance; food security and chronic overpopulation. Over 50% of our oxygen and 30% of our emission absorptions derive from the oceans.[51]. Fisheries support over 3 billion people. Mangroves contribute over $1.6 billion each year globally in carbon reduction services. Over 340,000 to 980,000 hectares of marine ecosystem services are being destroyed each year. According to the International Blue Carbon initiative, up to 67% of global mangroves, 35% of tidal marshes and 29% of seagrass meadows have been eradicated. Each hectare of mangroves eliminates 6-8 tons of CO_2 emissions per year. In forming a blue carbon or ecosystem-based finance solution, sources also need to consider legal, policy, market, institutional factors, competitors and investment incentives in addition to an accurate valuation of ecosystems and blue carbon potential over a future timespan. One source advises considering the way ecosystems are projected to change based on various existing and future risks or investment.[52]

Alternatively, the global COVID19 pandemic may also provide an opportunity to access additional recovery funding sources, especially those committed to tourism and the fisheries sector. The La Soufriere volcanic eruption, and subsequent reconstruction, may provide a chance for St Vincent and the Grenadines in particular, to restructure its

[49] Roth N, Thiele T and von Unger M, 2019, "Blue Bonds: Financing Resilience of Coastal Ecosystems," viewed 29 September, 2021, https://www.4climate.com/dev/wp-content/uploads/2019/04/Blue-Bonds_final.pdf

[50] Adams D, 2019 (b), "Financing Resilient Atolls: Strategies and Tools for Success," Ocean Assets Institute, Geneva.

[51] High Level Panel for a Sustainable Ocean Economy, 2020, "Ocean Finance: Financing the Transition Towards a Sustainable Ocean Economy," London.

[52] Responsible Investor Research, 2020,

economy towards a bluer/sustainable ocean status, whilst protecting local marine ecosystems. Funding committed for the circular economy and climate finance, may also be able to enhance ecosystem restoration and resilience, whilst aiding the blue economy. From sea level rise to biodiversity loss, species migration and extinction and a projected increase in the duration, frequency and intensity in climate related natural disasters; climate change increasingly presents the greatest uncertain future threat to oceans, interdependent supply chains, marine ecosystem resources and vulnerable communities across the Caribbean, Commonwealth and world. Among the foremost barriers preventing radical systematic transformation is the access to climate finance. Since the 2015 Paris Agreement on Climate Change, many nations and stakeholders including the Commonwealth via its Climate Finance Access Hub have pledged to mobilise resources including finance to assist in the transition towards a maximum of 2 degrees Celsius temperature increase and retain a climate-proofed, "business as usual" future, based on Intergovernmental Panel Climate Change Projections. However, countries most in need, such as Small Island Developing States, have experienced significant constraints in accessing resources; including the need for a climate funding implementation plan, funding proposal advice, adequate training and awareness that is sufficiently user-friendly and inclusive of stakeholder consultation and mindful of scarce time, labour, experience and other resource constraints including opportunity costs.

Climate finance increased from $342 billion in 2013 to $624 billion in 2019 (44% public sources). However, the Asian Development Bank estimates climate related natural disasters cost between $250 and $300 billion per year at a minimum. Global climate finance needs have been estimated at over $4 trillion in 2018, yet the private sector only contributed $579,000,000. The private sector remains hesitant for many reasons that have been explored in various sections in this report, including that of uncertain information over related public and private sector investment opportunities; an absence of best-case study successes and failures; the lack of certainty over a carbon market trading scheme; related financial incentives and disincentives (which also applies to blue carbon, the oceans and the circular economy). In the Caribbean, existing institutional capacity would need a centralising agent or National Ocean Coordinating Committee equivalent to work with investors to overcome regulatory and investment incentive gaps, mobilise political, community and other social will and support. Stakeholders also lack clarity over screening selection criteria, impact indicators and other metrics to determine performance. Local markets, entrepreneurs and businesses remain unfamiliar as to how they can precisely access markets. Global pledges towards climate change mitigation, adaptation and investment included funding aims of $100 billion by 2020, but current projections are far closer to $67 billion (versus $62 billion in 2014) and may be even more reduced due to the COVID19 epidemic. Yet Lord Professor Nicholas Stern in the Stern Review reported the need for at least $90 trillion. Comparatively limited attention has been globally dedicated as to how to aid stakeholders in overcoming many of the stringent eligibility criteria set by the Global Environmental Facility; Conservation Finance Alliance; Green Climate Fund; Special Climate Change Fund; Least Developed Countries Development Fund; World Bank; individual governments and businesses.

Many sources focus merely on the public sector, multilateral banks and organisations without considering the possibilities of private sector initiatives such as the Global Investor Group for Climate Change; venture capital, crowdsourcing and entrepreneurs such as the Global Climate Finance Lab initiative, nor how to access them. The Commonwealth Secretariat, its Climate Finance Access Hub, dedicated National Climate Finance Advisors and others are among a few stakeholders seeking to directly overcome this core impediment to a climate-proofed and resilient future identified by the Commonwealth in 2013. It recognised challenges including highly complex processes, few resources and access guides, minimal support for formal training, a lack of expertise, high transaction and preparation costs. For example, the Green Climate Fund is worth over $10.3 billion but requires a lengthy 2-3-year accreditation process and channels funding only through these entities. In response, the Commonwealth published a tender for consultants to create a Climate Finance Manual, especially focusing on member countries such as Fiji, the Solomon

Islands and Vanuatu that could also be practically, subsequently disseminated as coursework materials which could possibly be of assistance to and relevant for the three countries in this report.

In 2020 more institutions and nations globally are pledging billions towards climate finance from £5.8 billion in the UK to $2.85 billion in Canada, over €5 billion in France and 1.3 trillion Yen in Japan. Spain is targeting €900 million euros and the US over $800,000,000. New Zealand pledged an increase from $100,000,000 to over $300,000,000 each year. Evidence has yet to emerge as to how this will be subsequently influenced by the COVID 19 pandemic. The African Development Bank aims to dedicate $5 billion, Asian Development Bank $6 billion, European Investment Bank $20 billion, $29 billion by the World Bank and $1.01 billion for the Green Climate Fund. In Latin America, 470 projects received over $4 billion dominated by Brazil and Mexico, followed by Chile, Columbia along with Argentina and 81% financed by the Green Climate Fund. The Amazon Fund is also present in the Latin American region in addition to many of the ones above. It focuses on forestry, biodiversity and energy efficiency. From 2010 to 2015 the Caribbean received $1,477,000,000 in climate finance with 48% for mitigation and 32% for adaptation. It therefore becomes increasingly critical to re-orientate and motivate finance away from hazards created. However, to progress, stakeholders will need to overcome not just a scarcity of financial sources and risk-averse behaviour, but also asymmetrical information over the fluctuating conditions of resources, accurate economic, social and ecological valuations of natural resources and which projects to prioritise.

Whilst the World Ocean Council represents the emerging interest and transition towards sustainable ocean finance and the blue economy, several organisations including Climate Action 100+, the Institutional Investors Group on Climate Change, Investor Group on Climate Change, the Asia Investor Group on Climate Change, Ceres and the Principles of Responsible Investment are all prioritising climate finance and mobilising the private sector. For example, Climate Action 100+ aims to recruit and identify 200 of the top related sustainable financing and investment sources simultaneously to catalyse capital. Ceres in the USA similarly established a committed climate finance, investor and related stakeholder network aiming for greater sustainability. In October 2019 it created the Ceres Accelerator for Sustainable Capital Markets to provide information, lobby and facilitate capital flows towards low carbon technologies and innovation.

Australia's Investor Group on Climate Change is also committed to rallying decarbonisation funding in a model of private sector cooperation that would be advantageous for the blue economy to emulate, i.e., through the UNEPFI Sustainable Blue Economy Finance Initiative and World Ocean Council Blue Economy Investor Network, with $1 trillion in current assets and 52 members including New Zealand. The Institutional Investor's Group on Climate Change has similarly connected 90+ members with over €7.5 trillion searching for viable opportunities. The USA centred Investor Network on Climate Risk exceeds 100 members with $13 trillion of assets. There is also the Asian Group of Investors on Climate Change. The Global Investor Statement on Climate Change and the subsequent global commitments following the 2015 Paris Climate Change Agreement have pledged over 450 investors worth over $US 40 trillion to utilize more of their finance, sustainably and with long term planetary implications. The Investor Agenda similarly echoes this by orienting resources to investment, corporate engagement, disclosure and policy advocacy, as does Business for Social Responsibility and Principles for Responsible Investment, to focus beyond the economic dimensions to the socio-environmental and governance aspects. The Investor Statement lead for private sector calls for a global binding convention equivalent to the later, subsequent Paris Agreement on Climate Change. It argued for "appropriate incentives to invest, be of adequate duration to improve certainty to investors in long-term infrastructure investments and avoid retroactive impact on existing investments," Governments were asked to commit to the following. They may seem less directly relevant to the blue economy but need to be incorporated in considerations for a related

funding framework and investment mechanism; as all blue economy funders are subsequently under consumer, regulator and their own member's pressure to ensure compatibility with decarbonisation and climate change resilience or adaptation being factored into decision making simultaneously.

- Provide stable, reliable and economically meaningful carbon pricing that helps redirect investment commensurate with the scale of the climate change challenge.
- Strengthen regulatory support for energy efficiency and renewable energy, where this is needed to facilitate deployment.
- Support innovation in, and deployment of, low carbon technologies, including financing clean energy research and development.
- Develop plans to phase out subsidies for fossil fuels.
- Ensure that national adaptation strategies are structured to deliver investment.
- Consider the effect of unintended constraints from financial regulations on investments in low carbon technologies and in climate resilience.

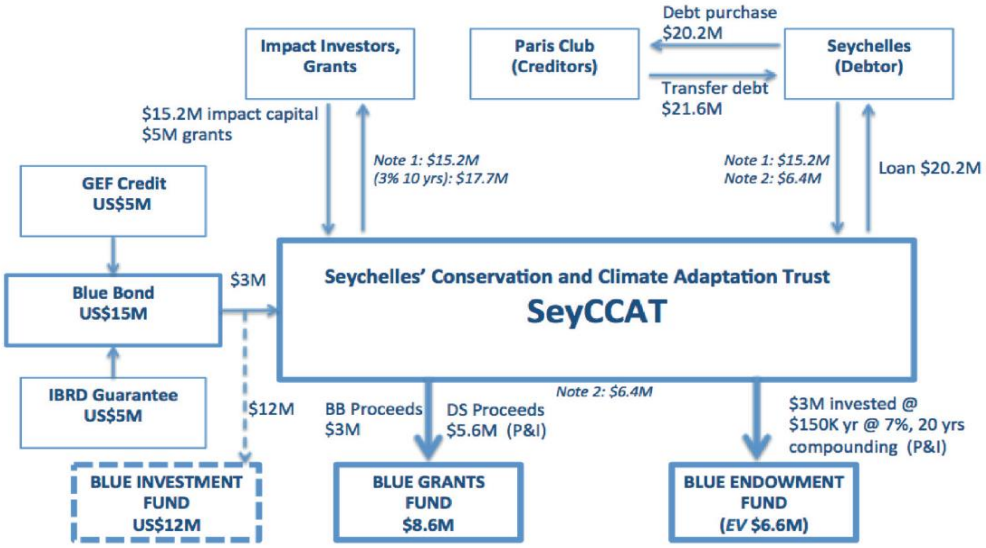
Many companies and investors may have committed in principle to notions of corporate social responsibility, responsible investment and action on climate change, including emissions offset and finance, but it often equates to "corporate greenwashing." Subsequent detailed analysis often fails to provide quantifiable impacts or evidence of any actual substantial commitments to these actions beyond appointing PR campaigns, a few token gestures, lobbyists and often ill informed, under-prepared or resourced, or over/under-committed officials. Technology and services such as Carbon Tracker have, however, made it simpler to measure carbon emissions footprints, achieve scalable commercial renewable energy, water conservation and circular economy waste minimization or natural capital valuation. These could be also reconfigured as tools in time to measure our impact on the oceans, our contributions to offsetting carbon, marine pollution and other applications or Caribbean threats. It therefore becomes increasingly critical to re-orient and motivate finance away from just responding to hazards when they occur but to be proactive in mitigation through blue economy solutions that consider nature based and other marine conservation solutions. However, to progress, stakeholders will need to overcome not just a scarcity of financial sources and risk-averse behaviour but asymmetrical information over the fluctuating conditions of resources; accurate economic, social and ecological valuations of natural resources and project prioritisation.

2.4.1: Overview of Blue/Climate/Sustainable Economy Related Funding Sources, Criteria and Mechanisms - Government

The Seychelles investigated the feasibility of several options to encourage sustainable fisheries and finance marine conservation, aside from forming an actual blue bond. It could have alternatively investigated direct tax credits or subsidies; indirect support or a long-term commitment as guarantor to underwrite and share risk. Several motivations, including a limited tax base and high costs, lack of possible investor confidence and the challenges of determining the most effective form of taxes, were provided as to why it favoured neither of the other two options and focused on a debt for nature swap. It launched the world's first government blue bond on 29th October 2018, partially guaranteed and structured through the World Bank for US$ 15,000,000 utilising the three investors: Calvert Impact Capital, Nuveen, and U.S. Headquartered Prudential Financial Incorporated. The Commonwealth Secretariat provides the Seychelles blue bond experience as a successful example, as the implementing partner the Seychelles' Conservation and Climate Adaptation Trust, or SeyCCAT, undertook 5 successful projects and 4 rounds of funding related grants and loan

applications up to 2021.[53] As the world's first blue bond, it is well worth illustrating in Figure 2.4.1 as to how diverse stakeholders can be actually supported and mobilised, and it can serve as a template for how others can be structured based on a coordinated ocean governance and investment framework mechanism. It is aided through the formation of a Blue Economy Roadmap and Strategic Plan focusing on creating sustainable wealth, sharing prosperity and securing healthy and prosperous oceans.[54] This includes measuring success through ecosystem based accounting and marine spatial planning; protecting marine and coastal assets and mitigation/resilience against climate change.

Figure 2.4.1: The Structure of the Seychelles or World's First Government "Blue Bond"



Source: SeyCCAT 2021

These Seychelles stakeholders targeted specific impacts or outcomes to invest in marine protected areas, to aid the nation to accomplish exceeding 30% of its Exclusive Economic Zone protected with its marine spatial plan, sustainable fisheries (the Mahe Plateau Demersal Fisheries Management) and SWIOFish 3 project and other blue economy activities. It was structured around a series of grants and loans to be provided through the Blue Grants Fund and Blue Investment Fund, managed respectively by (SeyCCAT) and the Development Bank of Seychelles, via Blue Grants Fund and a Blue Investment Fund (DBS). It was heavily over-subscribed as impact investors were attracted by the sustainability environmental, social and governance credentials, the novelty and the low country risk. The bond itself is partially guaranteed by a US$5,000,000 guarantee from the World Bank (IBRD) and further supported by a US$5,000,000 concessional loan from the GEF, which will partially cover interest payments for the bond.[55] An Adaptation and Resilience Group of experts has been formed to develop suitable aquaculture and fishery specific investor guidelines, which are still a work in progress. Specific outcomes aim to manage 400,000 km^2 of Indian Ocean, via following marine spatial planning within 5 years, endorsing projects that contribute to ecosystem and community climate change resilience and restoring wild fisheries. Its shared experience indicated that application processes for funding needed to be greatly simplified to aid recipients. It was translated into local Creole to remove local community

[53] Commonwealth Blue Charter, 2021, "Innovative Financing - Debt for Conservation Swap, Seychelles' Conservation and Climate Adaptation Trust and the Blue Bonds Plan, Seychelles." London.
[54] Marguerite T, 2018, "Investing in Seychelles Climate Smart Blue Economy," Ministry of Environment, Energy and Climate Change, Port Victoria.
[55] Climate Bonds Initiative, 2018, "Green Bonds Fact Sheet Seychelles," viewed 7 July 2021, Port Victoria.

and language barriers. Not only were stakeholders consulted but they were offered workshops to improve project and budget writing skills, project management, and monitoring and evaluation skills.

Similarly, there is a surge of interest in Oceania in developing ocean or blue bonds among governments as solutions for traditional small-island or large ocean developing states. The Office of the Pacific Ocean Commissioner (OPOC), local governments and regional organisations such as SPREP, SPC and others, have been especially active in undertaking various research and initiatives. In particular, Fiji is vying to be the first Pacific nation to offer a specific government endorsed blue/ocean bond based on the Seychelles predecessor example. In recognition of their limited human resource capacity to undertake such a specific initiative, the region has focused on establishing 9-month fellowships to at least 1 person from each of the 14 main nations.[56] The Pacific Ocean Finance Fellowship Program includes the support of OPOC, the Pacific Island Fisheries Forum Agency and funding from the World Bank and the Global Environment Facility under the Pacific Regional Oceanscape Program. This defines the goal of ocean finance as generating, investing, aligning, and accounting for financial capital to achieve sustained ocean health and governance: 1) Generate public and private financial capital through traditional and innovative finance mechanisms to create a diversified portfolio of revenue that supports ocean health, 2) Invest financial capital effectively, efficiently, and strategically to achieve measurable ocean outcomes and sustained ocean governance, 3) Align public and private economic incentives with long-term ocean health, and 4) Account for how financial capital is deployed against performance benchmarks, and account for values of marine ecosystem services through time. This training focused on workshops and related curricula material to identify and improve access to ocean finance sources; identify and increase market commercialisation and entrepreneurial activities and policies/best practices/guidelines along with legal implications.

An initial ocean finance landscape assessment and consultancy was funded under the Fisheries Forum Agency for Tonga in 2020, as a Pacific region prototype concentrating on the principles underlying access and management, awareness and institutional capacity building via workshops and other outreach activities.[57] From 11-15 November 2019, a specific Pacific Ocean Finance Conference was held in Fiji.[58] From there, the consensus indicated that mechanisms had to be generated from a variety of origins, allocated funding had to be prudently invested and aligned to eventual ocean health, with appropriate incentives devised to entice these capital inflows and technical support. Empowerment of the recipients and their direct/indirect beneficiaries would have immense repercussions in enabling the projects to reach their targets and avoid wasting funds irresponsibly or corruptly. Participants were swift to point out the need for youth and gender mainstreaming as a determinant of the funding. They were clearly in favour in regards to the Polluter Pays Principle and strict liability/accountability.

The initial assessment of the components needed to develop the first Pacific Ocean Bond developed guidance notes, given some stakeholders in the traditional financial sector are less familiar with the blue economy's direct implications, risks, opportunities and characteristics. Asia Research and Engagement a specific Pacific Ocean Bond ESG Guide and three divergent bond types[59] Moving forward it advised developing significant stakeholder awareness and engagement, given the novelty of the area, extending the concept to insurance, and working to develop local

[56] Arumae J, 2020, "Pacific Ocean Finance Fellowship Programme 2019-2020," Office of the Pacific Ocean Commissioner, Suva.
[57] Fisheries Forum Agency, 2020, "Request for Expressions of Interest Tonga Ocean Finance Profile, Fisheries Forum Agency, Honiara.
[58] Vertigo Lab and Sapere Research Group, 2019, "Analysis of Taxes and Subsidies Relevant to Pacific Ocean Health," Office of the Pacific Ocean Commissioner, Suva.
[59] Asia Research and Engagement, 2021, "Analysis and Development of a Pacific Ocean Bond," Office of the Pacific Ocean Commissioner, Suva.

institutional capacity, training and performance based outcomes directly related to the blue economy, improvements in ocean ecosystem health, resilience, reduced vulnerability/exposure and progress towards the SDGs. The first is the Pacific Ocean Impact Bond, which fundamentally depends on tools such as marine spatial planning, the Ocean Health Index, stakeholder consultation or pre-existing sources to provide direct "impact investment or finance", looking for an ecologically, economically, and socially productive consequence. It can be issued and repayments partly or completely guaranteed by governments or multilaterals (such as the World Bank for the Seychelles) to interest NGOs and private sector stakeholders looking to directly finance marine conservation; sustainable fisheries or other direct activities. It is therefore critical to ascertain specific projects which can convince these target investors of their worth as well as means of proving performance. It relies significantly on establishing monitoring data, but also on ensuring multiple stakeholder cooperation, to avoid any excess pressures or threats that jeopardise investor's willingness to commit. The source suggests it is especially suitable for 5-25 year bonds from US $20-50,000,000.

The second is the Pacific Ocean Resilience Bond concept as an alternative structure for the three countries within this study. This differs in supporting sustainable finance in infrastructure or ecosystem-based project solutions, i.e., blue carbon, that aim to enhance the direct ocean heath/resilience of marine processes to external disruption risk events. It could also extend to financing water and wastewater infrastructure or ocean renewable energy. Impact can be measured not just in direct contribution to an activity but indirectly through the resilience/opportunity cost of a potential event it reduces. Aside from sovereign governments, the main source would be more likely to be multilateral organisations and development finance or banking sector institutions such as the World Bank, Asian Development Bank, European Investment Bank, Caribbean Development Bank and Inter-American Development Bank. As these entities generally have their own stringent ESG frameworks to monitor, select and evaluate, investors are more reassured, seeing less political or investment risk then Pacific Ocean Impact Bonds. This is more suitable for investments from 5-25 years and US$100-250,000,000.

The third blue bond type is the Pacific Ocean Mitigation Bond, which differs in financing activities, businesses and projects that aim to pre-empt or mitigate against climate change, marine pollution and other threats; alongside opportunities such as ocean energy and green shipping. The target recipient is therefore more likely to be a sustainability-orientated commercial enterprise or government seeking to commit to decarbonisation/circular economy. The target investor is similarly more likely to focus on profit as a core criteria or concern for attractiveness. ESG impacts become more of a concern, however, as this sector has comparatively fewer examples of projects that have proven themselves to be both truly commercially viable long term and more ocean/ecologically sustainable or contribute socially. In undertaking the bond assessment, the source identified investors are primarily motivated not just by profit but by signs of impact investing - that it will genuinely contribute to the blue/oceans economy and sustainable ecosystems/fisheries/conservation, add/or social outcomes. They are also motivated by the quality of the issuer, the financial, credit or transaction risks employed; the sector risk, quality of cash flow, and extent of risk measures/insurance/precautions undertaken by the actual issuer or those resources, enterprises and people on whom the bond performance depends. Identifying suitable projects and guarantor support of potential banking risks is imperative. For these measures to succeed it is critical to conduct updated natural ocean and marine ecosystems capital valuation which acknowledges changing risks, resilience and vulnerability over time. The higher the returns, the less volatile the risks involved and the shorter the payback timeframe; the more potentially attractive the investment. There is an increasingly high market demand for these blue bonds as these are increasingly perceived as relatively safe; offering reasonable interest rates/rates of return.

Aside from blue bonds, governments also have the opportunity to utilise more traditional mechanisms such as fines, taxes and subsidies as mechanisms to try and shift investment, production, trade, consumption and personal behaviour. An analysis of Pacific Ocean health related financial instruments recognised the challenges of relying on the comparatively small traditional business and personal tax bases of island states.[60] It therefore suggested shifting the incurrence of taxes onto tourists, foreign companies including overseas fishing fleets/petroleum corporations and others, wherever possible. Challenges also remain in aiming to specifically support blue economy facilitation and ocean/coastal protection activities; whilst exerting sufficient penalties and fines against potential threats. Tax systems may need to become more efficient by penalising pollution, carbon emissions and fossil fuels more stringently, and curbing subsidies that promote overfishing. Specifically, the assessment looked at re-evaluating fuel subsidies to promote maritime decarbonisation and seek alternative fuel sources. It considered imposing bans on single use plastics and incentives to promote recycling/price waste levies subject to dumping. It also looked at reviewing tax incentives for philanthropists/aid agencies and other sources and providing basic subsidies to encourage the voluntary collection of abandoned, lost and discarded fishing gear. To encourage investors to favour blue, ocean, green and climate bonds it favoured providing tax credits or exempting interest. Alternatively, investors could obtain bond cash rebates or avoid any income tax incurred on interest. Other examples of possible tools that could be converted to aid government ocean/blue economy financing of activities include renewable energy subsidies; import duties; skilled labour migration concessions or subsidies; bycatch reduction subsidies; prospecting tax penalties; requiring higher licensing fees; per capita user fees and subsidies for raw resources and financial tax credits for recycling waste.[61]

Fiji's launch of its first green bond in 2017 is another example of how governments, the banking sector and others can apply similar experiences in selecting the most appropriate blue/marine funding sources, criteria, mechanisms and tools. It publishes an annual impact report as part of its monitoring and evaluation process to ascertain if sustainable performance targets are met.[62] It offered a 4% interest rate for a 5 year bond and 6.5% rate for a 13 year bond. These sources had to be specifically invested in projects that would contribute towards attaining the Sustainable Development Goals. It also received significant political support, marketing and administrative support to entice investors further. Therefore Fiji has announced an aim to develop a blue/ocean bond by mid-2022, once it has designed the bond with monitoring and impact assessment process; formed the relationships necessary with the related market institutional investors, established suitable investment projects exist and stakeholder support politically, economically and within the community.[63] To be of any use to the private sector, communities or other recipients, the government also needs to simplify access to finance primarily through reducing any regulatory and bureaucratic barriers, converting to electronic application processes, promoting awareness of such opportunities and related fiscal incentives, whilst striving to work with the private sector to encourage interest and uptake It has established National Sustainable Development Bond Steering Committees, Working Groups and expressed interest at leveraging the COP26 event to market its blue bond prospects.

[60] Vertigo Lab and Sapere Research Group, 2019, "Analysis of Taxes and Subsidies Relevant to Pacific Ocean Health," Office of the Pacific Ocean Commissioner, Suva.
[61] Abeta R, 2020, "Pacific Ocean Finance," Office of the Pacific Ocean Commissioner Presentation, Suva.
[62] Fiji Government, 2019, "Fiji Green Bond Impact Report," Fiji Government Report, Suva.
[63] Narayan V, 2021, "Sustainability Linked Bonds: Fiji's Perspective," Suva

2.4.2: Overview of Blue Economy Related Funding Sources, Criteria and Mechanisms/Tools – Multilateral and Regional Organisations

As early as 2012, the Global Environment Facility and UNDP were investigating ocean finance as a concept.[64] It favoured the use of three specific tools which could help establish the status of ocean health, resilience, potential profitability and provide the basis for establishing any marine protected area or subsequent investment. These three tools were conducting a Transboundary Diagnostic Analysis/Strategic Action Programme (TDA/SAP); Integrated Coastal Management (ICM)/Framework for Sustainable Development of Coastal Areas (SDCA); and third to develop suitable policies, whilst adhering to global or regional ocean legal frameworks. A TDA/SAP approach works to determine institutional constraints, resources and policy alternations required regionally, across risks and users. Integrated Coastal Zone Management (ICZM) applies centralised/government-based policies, scientific management and other factors. This would apply the principles of a robust, scientific and ecosystem-based management approach to provide more convincing evidence, upon which governments, investors, NGOs and communities could determine their decisions. It strongly advised that any specific risk or intervention would only prove to be effective, if it determined suitable responses to the most significant threats to that ocean such as alien and invasive species, ocean acidification, hypoxia, pollution, IUU fisheries and climate change. The source estimated efforts to contain impact costs related to the deterioration of coastal and ocean resources would require an initial public investment of about $5 billion over the next 10-20 years.

The second volume provides 3 TDA case studies including the Danube/Black Sea Basin, Yellow Sea Large Marine Ecosystem and Rio de la Plata and Maritime Front.[65] For ICZM it offers the Partnerships in Environmental Management for the Seas of East Asia or PEMSEA case study and for reviewing and modifying a policy-governance approach, it offers West/Central Pacific Ocean Fisheries and Global Ballast Water Programme (GloBallast) examples. These all have similar tools of trying to apply a scientific management approach that considers marine species and their biological factors in relation to quantifying the value of marine ecosystem species for blue economy investments; their short, medium and long-term sustainability/degree of vulnerability; includes stakeholder participation and adaptive, flexible management (governance). It also provides a series of indicators directly aligned to ascertaining ecosystem health via monitoring pollution, eutrophication, biotoxin, Ocean Health Indices, various marine, climate and species health or mortality along with checking various emerging diseases. The United Nations Environmental Programme also identifies the need to diversify into innovate financing instruments and initiatives facilitating sustainable blue economy transition as part of its 2020 revised Marine and Coastal Strategy.[66] This includes confirming the need for effective ecosystem-based valuation data processes to influence decision making, the connection to SDGs, possible alignment to ICZM, marine spatial planning and the circular economy. It specifically undertook the previously stated UNEPFI Sustainable Blue Economy Finance Principles and Global Coral Reef Fund. UNEPFI identified a range of stakeholders who have publicly pledged to supporting blue economy finance including the IUCN Blue Natural Capital Financing Facility, the Ocean Risk Recovery Alliance, the Coalition for Private Investment in Conservation, the High Seas Alliance and various entities politically/networking with influential entities. Examples include the Ocean Accounts Partnership, the High Level

[64] UNDP, 2012 (a), "Catalysing Ocean Finance Volume I: "Transforming Markets to Restore and Protect the Global Ocean," viewed 9 September 2021, https://www.undp.org.

[65] UNDP, 2012 (b), "Catalysing Ocean Finance Volume II: "Methodologies and Case Studies," viewed 9 September 2021, https://www.undp.org.

[66] UNEP, 2020, "Update on the Implementation of UNEP's 2020 to 2030 Marine and Coastal Strategy," viewed 7 September 2021, https://www.unep.org.

Panel for a Sustainable Ocean Economy, the Friends of Ocean Action, World Resource Institute, Carbon Tracker and the UN Global Compact Sustainable Oceans Business Platform.[67]

The UN Global Compact Sustainable Oceans Business Platform is composed of a voluntary association of private sector entities interested in mainstreaming ecological, social and related economic decisions into their operations. It has advised that any bond, loan or investment issuer's business model and strategy is legitimate and consistent with undertaking the SDGs; they have ratified and committed to the 10 Principles of the United Nations Global Compact, the 9 Sustainable Ocean Principles and the International Capital Market Association's Green and Social Bonds Principles.[68] It claims the need for impact criteria that are measurable, auditable and significant in its key performance indicators, with a clear corporate plan is necessary, to be convincing as sincere signatories. The 9 Sustainable Ocean Principles are outlined below. These clearly link to the Sustainable Development Goals through specific Key Performance Indicators, which are not clearly defined in the source, but the actual areas that will be examined for future investment decisions and ocean tipping points are specified in Figure 2.4.2, below. In issuing a blue bond, it confirms the importance of choosing effective blue baselines and measurable Key Performance Indicators, within the issuer's capacity to deliver.[69] Moving forward onto a stock exchange, to be issued the blue bond or financeable investment needs to investigate the market potential/local community support and awareness of the product. It requires structuring to also determine the appropriate size, yield and liquidity. Partnerships or consultation with government could aim for possible financial incentives, support in legal issuance and conducive policy frameworks. It needs prioritisation and commitment from multilateral development banks and serial investors; along with effective reporting and compliance standards with systems. The generating of sufficient demand can be attained in part by tapping into the publicity, profit seeking, altruistic or other desire to move beyond just immediate financial profits as investment returns.

OCEAN HEALTH AND PRODUCTIVITY

Principle 1: Assess the short- and long-term impact of their activities on ocean health and incorporate such impacts into their strategy and policies.
Principle 2: Consider sustainable business opportunities that promote or contribute to restoring, protecting or maintaining ocean health and productivity and livelihoods dependent on the ocean.
Principle 3: Take action to prevent pollution affecting the ocean, reduce greenhouse gas emissions in their operations to prevent ocean warming and acidification, and work towards a circular economy.
Principle 4: Plan and manage their use of and impact on marine resources and space in a manner that ensures long-term sustainability and take precautionary measures where their activities may impact vulnerable marine and coastal areas and the communities that are dependent upon them.

GOVERNANCE AND ENGAGEMENT

Principle 5: Engage responsibly with relevant regulatory or enforcement bodies on ocean-related laws, regulations and other frameworks.
Principle 6: Follow and support the development of standards and best practices that are recognized in the relevant sector or market contributing to a healthy and productive ocean and secure livelihoods.

[67] UNEP, 2021 (a), "Turning the Tide: How to Finance a Sustainable Ocean Recovery. A Practical Guide for Financial Institutions," viewed 6 September 2021, https://www.unep.org.
Sustainable Ocean Business Platform, 2020 (a), "Practical Guidance to Issue a Blue Bond," UN Global Compact, New York.

[68] Sustainable Ocean Business Platform, 2020 (b), "Reference Paper for Investments: Accelerating Sustainable Ocean Business," UN Global Compact, New York.

[69] Sustainable Ocean Business Platform, 2020 (a), "Practical Guidance to Issue a Blue Bond," UN Global Compact, New York.

Principle 7: Respect human-, labour- and indigenous peoples' rights in the company's ocean related activities, including exercise appropriate due diligence in their supply-chain, consult and engage with relevant stakeholders and communities in a timely, transparent and inclusive manner, and address identified impacts.

DATA AND TRANSPARENCY

Principle 8: Where appropriate, share relevant scientific data to support research on and mapping of relevance to the ocean.
Principle 9: Be transparent about their ocean-related activities, impacts and dependencies in line with relevant reporting frameworks.

Figure 2.4.2.: United Nations Global Compact 5 Tipping Points, Related KPI/SDG Target Information

TIPPING POINT	WHY	DETAILS EXEMPLIFYING KPI AREAS	SDGs	SDG TARGETS (EXAMPLES)
SUSTAINABLE AND FULLY TRACEABLE SEAFOOD	More sustainable and nutritious food is key to end hunger and poverty, improve health and communities.	▪ Fisheries: All operations Marine Stewardship Council certified ▪ Aquaculture: All operations Aquaculture Stewardship Council certified ▪ All produce traceable to origin	8 14 13 12 2	2.1 2.2 8.2 14.1 14.2
SET SAIL FOR ZERO	Sustainable transport is key to future trade and growth and driver of the 17 SDGs.	▪ Reducing greenhouse gas emissions below International Maritime Organization trajectory ▪ Improvement of ocean habitat	13 14 7 2 12	7.3 12.6 14.3
HARNESSING OCEAN ENERGY	More renewable energy must be made available and affordable world wide.	▪ Significant increase of ocean-based renewable power production ▪ Develop new renewable energy production from sun, wave and tidal energy	7 8 12 13 14	7.1 7.2
MAPPING THE OCEAN	More insight on ocean, biodiversity, and resources is needed to make qualified decisions and solutions.	▪ Technical solutions, data centres, mapping seabed and resources ▪ Mapping biodiversity, fish resources	16 17 14	17.10 17.16 16.6 14A
END WASTE ENTERING THE OCEAN	Healthy oceans are key to a prosperous future for food and communities.	▪ Reduction of plastic waste ▪ Reduce run-off from agriculture and cities ▪ Sustainable alternative solutions to plastic	12 14 3	14.1 14C 3.9 12.2 12.5

Source: Sustainable Ocean Business Platform 2020b

The Friends of Ocean Action released their own 2020 ocean financing handbook guide.[70] This not only endorses the business case for investment in the blue economy across a range of activities, sectors, potential projects and resilience against risks, it also identifies multiple funding sources for stakeholders to consider. These sources include but are not limited to government funding including loans, grants, taxes, subsidies and exemptions, official development and philanthropic grants; other loans, grants, public equity and equity investment, sovereign wealth, pensions and insurance funds, international financial institutions and multilateral agencies. Private financiers include equity, impact investors and venture capitalists, speculative crowd funding, research grants/scholarships and the commercial banking sector. In structuring ocean finance, not only is the choice of instrument, financial source; selection criteria for the

[70] Friends of Ocean Action, 2019, "The Ocean Financing Handbook," World Resources Institute, London.

project and its monitoring impact indicators, critical but also attention to any possible legal implications including insurance, liquidity, collateral and cash flows. All stakeholders would further benefit from both financial/business literacy but also ocean/climate literacy to be sufficiently aware of the potential risks, necessity, potential impacts, opportunities and how to ensure the implementers are actually likely to lead to those outcomes. It states the need to form strategic relationships with local businesses and communities, to safeguard these investments and ensure adequate, responsible data collection and management. Potential investments are screened on the basis of project scalability, perceived risk, impact potential and contributions towards certain output or key performance indicators. Unlike many of the sources in this report, which primarily focus on some variant of a blue bond model, it identifies other potential blue investment models including impact-only models, grants, debt models, microfinance loans, revolving loan funds, bank loans, conservation impact, project and sovereign bonds. Others include debt swaps, carbon and biodiversity offset and credit schemes, hybrid models, bequests and endowment funds and seed financing. Simultaneously, developments in the insurance sector would provide greater reassurance and related confidence/interest to investors against climate change, natural disasters and other dependent risks.

In reviewing specific commitments made by multilateral development institutions, vertical funds and the related international financial sector, the African Development Bank has not formally financed the blue economy as an investment strategy with criteria, but has investigated the opportunities from various sectors such as fisheries, aquaculture, tourism, seabed mining, marine renewable energy and blue biotechnology through a series of consultancies from April to August 2021. The Asian Development Bank has launched its 2020 to 2024 Action Plan for Healthy Oceans and a Sustainable Blue Economy, which specifically commits $5,000,000,000 in regional investment to the Ocean Financing Initiative under the blue economy, ecosystem management, pollution control and sustainable infrastructure.[71] This Ocean Financing Initiative includes a consortium of partners including the ASEAN Catalytic Green Finance Facility (under the ASEAN Infrastructure Fund), the Republic of Korean government, and World Wide Fund for Nature.[72] It focuses on the blue economy; ecosystem management, pollution control and the development of sustainable infrastructure. Its approach includes tools such as blue finance frameworks with detailed principles, criteria, and indicators for selecting projects and measuring impacts. It also includes developing a pipeline of actual, market and investment ready, ocean protecting, bankable projects, ensuring simplified access to funds and any innovative instruments necessary. Examples include blue bonds, blue credits for avoided cost, and first loss guarantees. The Caribbean can also be inspired by the 10th September 2021, fresh initial issuance of the Asian Development Bank's first two blue bonds for US$ 302,000,000, each of $151,000,000. These 15 and 10 year bonds were acquired by the Dai-chi Life Insurance Company (via Citigroup Global Markets Limited) and Meiji Yasuda Life Insurance Company (via Credit Agricole CIB) respectively. To establish that these bonds were truly "blue" or contributed to sustainable ocean activities and health, the processes needed independent verification.

In the next 4 years €2,500,000,000 is pledged in lending credit to develop the blue economy by the European Investment Bank under the Clean Oceans Initiative/Blue Sustainable Oceans Strategy. This Strategy is open to myriad stakeholder types across Europe and oversea territories.[73] It specifically focuses on projects designed for sustainable coastal development; sustainable seafood production (via Maritime Stewardship Council certification), green shipping/maritime decarbonisation and marine biotechnology. Aside from this, the OECD has in principle, committed to supporting the blue economy under the 'Sustainable Ocean for All' initiative. The Inter-American Development Bank is supporting blue growth and innovation entrepreneurs through the Compete Caribbean Challenge which operates as

[71] Asian Development Bank, 2019 (a), "Action Plan for Healthy Oceans and a Sustainable Blue Economy," Asian Development Bank, Manilla.
[72] Asian Development Bank, 2019 (b), "Oceans Financing Initiative," Asian Development Bank, Manilla
[73] European Investment Bank, 2020, "Blue Sustainable Ocean Strategy," European Investment Bank Report, Luxembourg.

an incubator and accelerator programme to mentor potential entrepreneurs, providing them with seed training, capital funding and other support. as detailed in section 2.2.3 above, and as stated more specifically in the interview transcripts of Section 3,

Among the most transparent and significant investment efforts towards the blue economy is the World Bank's PRO-BLUE, currently committing $5.6 billion by March 2020, up from $150,000,000 in 2018. Pledged future investments include a further $1.6 billion. It targets marine pollution; sustainable fisheries and aquaculture; other blue economy activities and ecosystems/ocean governance and marine conservation; along with blueing ocean sectors and integrated seascapes. Examples include a scheme to provide Caribbean community fisheries and value chain insurance or COAST (Caribbean Oceans and Aquaculture Sustainability Facility), pioneered in St Lucia and Grenada. In its published annual report for 2019, in the PRO-BLUE programme donors pledged $51,140,736 but it received only $28,490,094. It devoted US$ 1,370,000,000 to finance aquaculture and fisheries; $4,950,000 for plastics and other marine pollution; $500,000 to ports and shipping; $800,000 to offshore wind energy, $400,000 to coastal tourism, $500,000 to desalination and $1,210,000 towards blue economy policy frameworks, ecosystems, technology and finance. Specific project examples include investigating harmful fisheries subsidies, a Fisheries Status Assessment Toolkit, a blue finance facility proposal, blue natural capital stock assessments and plastic solutions. It is also contributing indirectly to Mozambique's PRO-AZUL Fund, SWIOFISH and blue economy framework and the Organisation of Eastern Caribbean State's blue economy roadmaps and strategies for Grenada, Antigua and Barbuda, Dominica, the Dominican Republic, St Lucia, St Vincent and the Grenadines.

The European Union is also developing interest in the blue economy, in terms of restructuring its aid and investment for the South Pacific/Caribbean; in the growth of specific government and private equity investment sources and development of the European Commission Blue Economy Investment Platform, which unites over 500 small and medium enterprises in need of specific funding and support.[74] This was designed to help assist small and medium enterprises, who faced a €70,000,000,000 gap in 2018. However, to be included these investments had to satisfy the specific criteria in Table 2.4.2, specifically related to financial, social and environmental impact performance. The very vagueness of the criteria and the subjectivity/lack of baseline investment indicators precisely characterises certain problems inherent in relying upon current investment guidelines, which this consultancy needs to advise on through a specific framework and method with tangible impact indicators, as in Sections 3 and 4. The Oceans Assets Institute identified several blue finance sources including investment fund managers, multilateral and commercial banks, crowdfunding, the investment platform; accelerators for entrepreneurs and other financial mechanisms such as aid or research grants. The centralised investment platform also helps stakeholders to identify criteria, blended finance and other successful case studies and investment ready projects. This model could be extended to other areas such as the Caribbean and the South Pacific, where specific sectors can be united and partnered with suitable investors i.e., the Meloy, Pescador and Sustainable Ocean Funds for fisheries. These funding mechanisms also need to record and monitor impact to measure sustainable progress; have to establish links with new and future marine protected areas, NGOs, governments and local communities, and their associated challenges. It also has to consider not only risks but principles of good ocean governance and marine spatial planning, respecting existing usages by all species. These platforms offer a chance for blended finance including both private sector capital and public/aid-based funding sources via mechanisms such as concessional arrangements, guarantees, technical assistance, design-stage grants and others.

[74] Adams D, 2019 (a), "Financing the EU and Baltic Blue Economy," Ocean Assets Institute, Geneva.
Adams D, 2019 (b), "Financing Resilient Atolls: Strategies and Tools for Success," Ocean Assets Institute, Geneva;
Adams D, 2019 (c), "Derisking Investments in the Blue Economy," Ocean Assets Institute, Geneva.

Table 2.4.2: European Union Criteria for Blue Economy Investment Platform/Support Inclusion

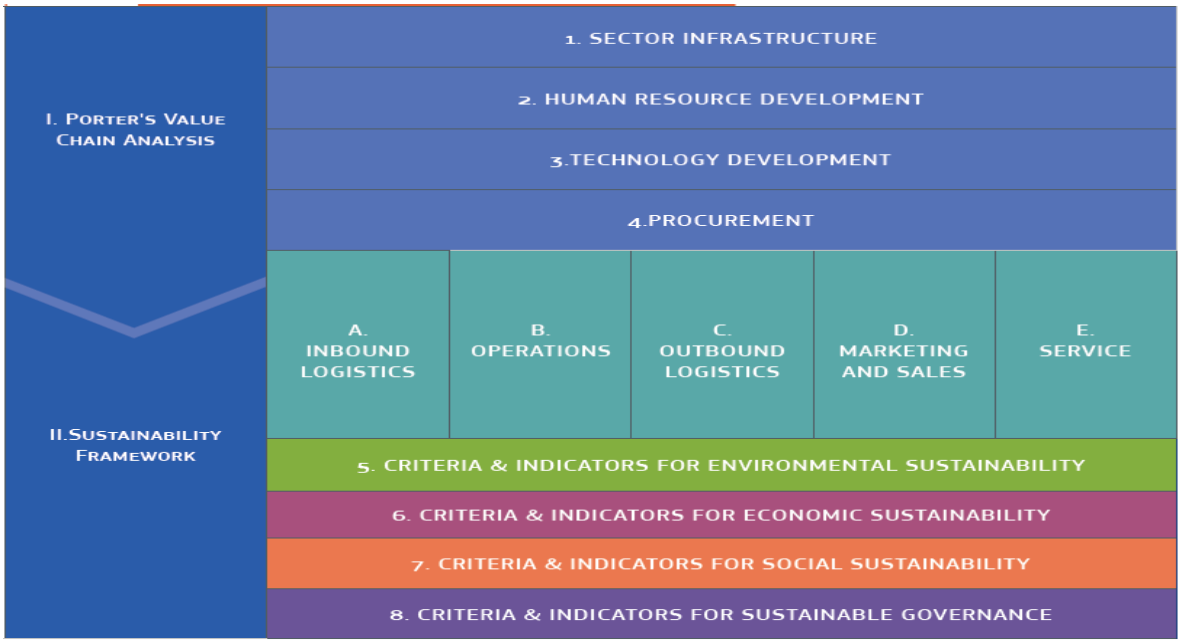
Eligibility Criteria	Quality Criteria
Contribution to the Blue Economy	Partners and Customers?
Sustainable Best Practise	Reliable Supply Chain?
Innovative Product/Approach	Effectiveness or existence of Patents/IP protection
Ready For Business?	Robust Financials?

Source: Adams 2019(a).

The European Commission has proposed its own Blue Economy Sustainability Criteria as part of a Framework (Figure 2.4.2) in relation to various activities, research projects and investments, independent of the above platform.[75] The initial plan was to identify and categorise all associated activities and risks, include links to the relevant SDGs - especially SDG14 - and to form an associated database. However, it is insufficient merely to identify these existing measurements and related data sources or gaps, as these generated over 500 for the EU project alone, without taking specific actions to prioritise and evaluate these indices and then link them directly to associated data collection, monitoring and evaluation performance mechanisms and ensuring adequate awareness or training. Initially, stakeholders need involvement to ensure the indicators and processes are relevant; that they do not omit vital or duplicate superfluous details and other considerations. It is also critical to clarify why certain indices/tools should be favoured over others and to provide clear guidance, if necessary, as to how these are calculated. Such indices need to improve upon previous attempts, through accurate valuation of natural capital and ecosystem services evaluations and allow for various risks and their fluctuations over time periods to be incorporated. The European Commission favours a subsidiary tool called Porter's value chain analysis, which calculates the contributions and interlinkages of various stages and activities throughout the value or supply chain, applying this to the blue economy. This directly aims fuse conventional economic impact assessments with risk, sustainability and environmental economics methodologies. In turn the illustrated framework incorporates individual sustainability criteria, including those related to climate change and the environment such as those identified in Table 2.4.2.1. This does not include the other additional social measures, as well as those that require indication of whether SDGs, fair labour and social practices, or climate change are sufficiently mainstreamed and prioritised into effective decision making and strategy formation. Most of these indicators are not quantified or the importance of being included is not noted, but refer merely to whether nations have/or consider them such as the existence of nature based/climate solutions and education policies related to sustainability and risk management without any further scrutiny as to the extent of their solutions or their effectiveness.

[75] European Union, 2021, "Sustainability Criteria for the Blue Economy EU," Brussels.

Figure 2.4.2.1: European Union Blue Economy Sustainability Framework.



Source: European Union 2021.

The European Commission further affirms that short term monitoring remains insufficient without periodic, long term observation as circumstances, risks, oceans, climates, environments and other factors change, with true costs and benefits over a greater timeframe.[76] In parallel, any unsustainable practises that continue to impose threats must be addressed to remove system stressors or pressures. Equally, new investor sources; trends, technologies, entrepreneurs and blue economy solutions or opportunities may become available. Certain indicators may have insufficient or inappropriate information being supplied. Globally and across Europe, the range of blue economy finance sources has rapidly expanded to embrace many orthodox bases such as traditional investors, equity and investment funds, investors, financial/banking and insurance sector, mutual funds, exchange traded funds, hedge, pension, infrastructure funds, real estate speculators, venture capitalists, entrepreneurs, foundations and aid agencies, businesses with supply chains, impact investing factoring companies and crowd sourcing. The European Union indicated the components of a successful blue economy investment to incorporate a well-designed and enforced policy framework, a concept proven commercially via a market feasibility/value chain analysis for profitability and innovation, public mechanisms such as sustainable behaviour inducing incentives, transparency, accountability and sincere application of sustainability, with clearly monitored and measurable outcomes as criteria for success. It is clearly necessary to investigate true possible impacts for society, local economies and environment.

The following insights into the European blue economy present a number of pathways to which funding can be diverted and structured. Additionally, the European Commission indicated that various blue finance mechanisms were needed to cover every sector and stage of investment. Whilst small and medium enterprises were moderately capable of obtaining some funding up to €2-3,000,000; and larger investors were prepared to commit to realistic propositions

[76] European Commission 2020,"Unsustainable Finance in the Blue Economy: Where Does The Money Come From?", viewed 7 September 2021, https://europeancommission.org.

above 15,000,000; a gap existed in between those.[77] It proposed the need for a related Umbrella Fund that could channel investment and coordinate smaller funds to overcome any gaps and investor hesistancy concerns, including a possible guarantor role for part of the debt/investment. It also proposes not only mapping existing funding and investment sources, but linking it to those cited on Stock Exchanges, calculating successes and failures. The European Union is entrusting 37% of an allocated €672,500,000,000 funds to a green economy via a developed Recovery and Resilience Facility including potentially ocean renewable energy until 2023.[78] It also developed the BlueInvest Fund initiative with the European Investment Fund to try to encourage far more blue economy finance through trying to attract private sector equity and venture capital markets.

Table 2.4.2.1: European Union Blue Economy Framework Sustainability Criteria and Indicators

Criteria	Indicator	Unit
Mitigation	Gross Value or % of revenue invested in environmental causes related to the sector's activities directly e.g. mitigation, restoration or indirectly (offsetting)	m EUR/year or % of revenue/year
Emissions to Air	Emissions of CO2, SOx, NOx, and P.M.	Tonnes of CO_2 equivalent / year Tonnes of SO_2 equivalents / year Tonnes of NO_2 equivalents / year Tonnes of pollutant / year
Impact on Ecosystems	Extent of coastal and marine habitat Positively/negatively impacted Threatened species (IUCN red list) of known Species ▸ % Support given to local entities working on the protection, conservation and management of local biodiversity and landscapes Economic value of blue carbon ecosystems per hectare	Area of positively and negatively impacted habitat in hectares % of turnover dedicated to such support or If in-kind support (such as making manpower or machinery Carbon dynamics (e.g. carbon burial rate - Environmental) Carbon valuation (e.g. carbon price – Economic/Governance) Climate change (mitigation – Governance)
Level of Energy Consumption	Energy consumption Energy Demand Met By Renewable Energy	Tonnes of oil equivalent per year
Energy Efficiency	Measures Taken to Increase Energy Efficiency	Yes/No -Please Specify
Waste/Wastewater Management	Waste generated and recycled Wastewater generated and reused Technology available for solid waste and wastewater treatment	Tons of waste generated per year Million m^3 of wastewater per year Yes/No -If Yes, please specify
Concentration of Business	Existence of clusters	Yes/No
Economic Benefits	Total Revenues generated by local enterprises Local public revenue generated through time Exports	% of total revenues generated by local enterprises M EUR/year
Economic Viability	Gross value added/Size of national/regional sector Sector specific investments in the region Turnover	M EUR/year M EUR/year M EUR/year
Employment	Direct and indirect jobs	No of direct/indirect jobs

[77] European Commission 2019, "Introducing the BlueInvest Fund: Sustainable Financing for the Blue Economy," BlueInvest Presentation, viewed 6 September 2021, https://europeancommission.org.
European Commission DG MARE, 2020, "Study to Support Investment in the Sustainable Blue Economy," EC Study, viewed 6 September 2021, https://europeancommission.org.
[78] European Commission 2021,"The EU Blue Economy Report 2021,", viewed 6 September 2021, https://europeancommission.org.

Financial Viability	Additional streams of finance/revenue generated	M EUR/year
	Financial returns invested in local authorities	% of financial returns invested in local authorities
	Financial self-sufficiency	No of years required to achieve full financial self-sufficiency
Funding	Public/private funding	% of turnover
Costs	Average Personnel Costs	Numerical
	Maintenance Costs	Yes/No -Please specify
Fisheries	Status of stock	Exploitation of fisheries at maximum sustainable yield
	Use of selective fishing technologies	Yes/No
	Production in harvested species -monetary	$
	Production in harvested species weight	Kg/tons

Source European Union 2021.

This Fund complements the existing European Commission Maritime and Fisheries Fund. Progress Consulting Srl and Living Prospects Ltd (2016) which focuses more on being able to quantify and determine the contributions of and impacts of specific blue economy activities through first tier indicators, such as Gross Value Added (GVA) employment and directly measurable contributions. Second tier impacts include turnover, revenue, investment, number of enterprises, and average wages per person employed. Third tier indicators move beyond direct indicators to incoporate demographic/social aspects such as employment by sex and age, staff mobility and employment of non-EU citizens, proportion of workforce from other EU countries, and indirect employment. Yet, as subsequent sections and reports will affirm, the most useful indicators can only be incorporated if there is an underlying system of suitable data collection, standardising and management processes to ensure accurate estimates are provided and that these are reliably, continuously updated and accessed, irrespective of the indicator type selected. Each added tier and the inclusion of additional variables can be used as proxies, where methods, data systems and human resource capacity are insufficiently capable of providing the requisite information.

However, devising a suitable blue economy investment process for Barbados, Grenada along with St Vincent and the Grenadines is still complicated by funding challenges related to the number of sources, and uncertainty over the potential rates of return on investment for many blue economy opportunities, including those of innovative solutions from entrepreneurs, academia and established businesses. Private sector participation needs to arise more as a recommendation, if whoever is involved such as an agency executing coordination and finance in this area; can understand stakeholder priorities and concerns, sufficiently, to build trust based relationships and form cooperative partnerships.Whilst desirable, stakeholder consultation and the lack of actual projects that seek funding and mature in markets, indicateowever,there is significant risk aversion by many in the financial sector due to the difficulty in truly ascertaining their actual extent of vulnerability to various risks; including unsustainable blue economy activities. Many local financial institutions within Barbados, Grenada and St Vincent and the Grenadines are not set up to adapt to the blue economy, seeking safer grounds for their proven investments, grants, credit, insurance models and pension schemes. Often, they can provide only limited assistance at averting damage and ensuring true sustainability, unless specifically communicated with and supported. Poor human, data gaps and institutional capacity or experience, further complicates ensuring actual compliance with any targets or key performance indicators. Small island developing states in particular need to look not only at revising their current financial and investment landscape, but also to recognise that most of their investment will need suitable inducements at a national political, legal and administrative level, given limited local capital markets are invariably often risk averse. They are also advised to coordinate and cooperate with each other to share related best practises and information, and potentially pool limited resources - i.e. joint

consultancies. In the 2020 European Commission survey of investors only 21% of impact investors specifically focused on SDG14 as an investment priority and 75% of the total have not assessed the implications of risks to oceans on their investments. The respondents identified that their main concerns in commiting to sustainable blue economy finance were climate change; policy and regulatory changes; ecosystem service loss (e.g. due to biodiversity and/or habitat loss); geopolitical risk; changing public sentiment and preferences; public health risk; illegal activity; commodity shocks and risks of responses or civil society action. These were followed by, the uncertainty over using new technological innovation and the extent of government or NGO support.

The European Investment Bank has its own Blue Sustainable Ocean Strategy, stated to formally commit €2.5-€5,000,000,000 from 2019-2023. It is also committed to the Clean Ocean Initiative, in partnership with the German development bank KfW Group and the Agence Française de Développement (AFD), to commit up to €2,000,000,000 to 23 water, waste and sanitiation projects to curtail major pollution volumes.[79] The Asian Development Bank is also developing its own blue bonds and related investment guidance.[80] It has developed a Blueness Index directly related to ocean health and risk through calculating greenhouse gas emissions as a percentage of sales relating to the blue economy activities being invested. The less blue/carbon friendly, the less investment they would receive. Higher Blueness Index ratings, indicate the project or business is far more ocean/climate resilient. Or governments could equally look at a sliding/proportional tax basis. This would directly link to the overall intention of blue investments, which is to ensure the long term protection of oceans from emerging threats such as climate change. Blueness measures in allocating investments have proven themselves to lead to potentially higher social, environment, climate resilient and financial outcomes for the limited samples to which they have been applied.

The Partnerships in Environmental Management for the Seas of East Asia or PEMSEA commissioned a study into financing East Asia's blue economy which provided the following insights into the perspective by these investors, when considering options of where and how to deploy capital.[81] An investment pre-feasibility analysis, either through a detailed business/financial investigation or through preselected, standardised screening criteria, can allocate scarce resources most effectively, as with any potential investment. Investors often seek clarity over not just impact indicators but cash flow analysis, capital structure, uses of investment proceeds, target and investment terms being sought. It noted that far fewer investors are truly expert enough to realise the complexities of the oceans, their related climate, ecological and economic functions or values, the scale and nature of their risk and resilience exposure. In the context of this report, this has implications for the Oceans Coordinating Committees, or whichever agency works in cooperation with its respective finance/economic planning ministries. There is a need for constant vigilance and active monitoring to ensure that not only those funding, but also those implementing the investments are truly held accountable. This requires special attention to developing localisation-based partnerships, which are also more likely to understand the relative risks and issues concerned and the best solutions related to these. Any developed indicators need to be more than just tokens, they need to encapsulate local realities, socioecological conservation and economic priorities, and actually continuously utilised. Active marketing of any created investment also needs to materialise, so that stakeholders are fully conscious of potential opportunities.

[79] European Investment Bank, 2021, "Clean Oceans and the Blue Economy," European Investment Bank Report, Luxembourg.

[80] Muntaz M and Smith Z, 2021, "The Blueness Index, Investment Choice and Portfolio Allocation," ADBI Institute Report, Manilla.

[81] Whisnant R and Veerlie V, 2019, "Investing in the New Blue Economy: The Changing Role of International Development Organisations in Catalysing Private Sector Investment in Support of Regional Strategic Action Programmes," *Journal of Ocean and Coastal Economics,* viewed 6 September 2021, https://www.researchgate.net.

Within Latin America and the Caribbean, blue economy interest is gradually being directed towards sustainable green, blue and climate finance, although not yet at the level of offering blue bonds and other financial instruments. The region is dominated by practical green bond examples including government and corporate based, loans and certifiable climate bonds that are committed towards significantly reducing greenhouse gas emissions.[82] Mexico has over US$1.8 billion, Brazil US $5.03 billion, Chile US$3.14 billion and Costa Rica, US $500,000,000 worth of investments. Although there is limited mutual agreement as to the precise criteria that should be included to be considered green, other than a demonstrably vague commitment to 95% of assets being "green" or sustainable such as renewable energy, maritime decarbonisation, greener infrastructure and the circular economy for marine pollution or waste reduction. These sources primarily rely upon external verification and the transparency of the partners involved/relationships to add credibility to, and reassure investors but seldom accompany these with physical audits or stringent monitoring and evaluation. Yet development banks can provide certain loan guarantees to offer a measure of additional collateral or security. Nations have to look for other solutions as their options to add further to debt remain extremely inhibited. The Development Bank of Latin America includes Barbados but not Grenada or St Vincent and the Grenadines. Although it does not specifically focus on the blue economy it insists that potential investments outline appropriate social and environmental safeguards as standards, linked to national members, with an appropriate risk and impact cost assessment conducted, identified, evaluated and mitigated against. It also states an overall guiding principle:

> *"In addressing the growing challenges of environmental matters, CAF must promote the conservation of the region's natural resources via initiatives that favour inclusive, productive and sustainable opportunities geared towards improving the protection of biodiversity and forests, soil management, water sources, marine and coastal ecosystems, the revitalisation of ecosystem services and the management of natural disaster risks. Similarly, it must facilitate the transition of Shareholder Countries to a low carbon economy by developing measures of adapting to climatic variability; of mitigating greenhouse gas emissions and of mobilising resources for climate financing."*

The Caribbean Development Bank, under its 2020 to 2024 Strategic Plan as one of the main regional development funding mechanisms, has not alluded to the blue economy as a priority directly, although indirectly alludes to enhancing marine resource management more effectively.[83] It includes all three countries specified under this consultancy. It concedes, however, the challenges of the Caribbean, through recovery costs exceeding $26,000,000,000 from 189 events from 2000 to 2018, high infrastructure deficits and inadequate implementation capacity. It offers general guidance and support for port investments; niche fisheries, aquaculture and tourism projects. If youth entrepreneurship and innovation were encouraged for the blue economy, they might be able to devise solutions towards implementing the SDGs, acquire the training needed in ongoing professional development to overcome currently scarce skills, if made aware of the investment opportunities and instrument types that exist.[84] It indicates the need to ensure these goals align to the Sustainable Development Goals and are effectively utilised, via continuous monitoring and evaluation. In a publication on blue economy finance, the Caribbean Development Bank recommended the need to develop networking partnerships; the need to develop related infrastructure, fiscal and policy incentives, share information in a regional knowledge hub, promote advocacy and stakeholder participatory involvement (Caribbean Development Bank 2018). A funded activity can only truly consider itself to be part of the Caribbean, according to the Bank, if it ultimately contributes to sustainable and inclusive growth and development; it reduces the risk of overexploitation and risky

[82] Climate Bonds Initiative, 2019, "Latin America and the Caribbean: Green Finance and State of the Market," Mexico City.

[83] Caribbean Development Bank, 2019, "Caribbean Development Bank Strategic Plan 2020 to 2024, Caribbean Development Bank Report, Bridgetown.

[84] Frederick R and Elliot W, 2018, "The Blue Economy: Caribbean Youth Employment Opportunity," Caribbean Forum on Population, Youth and Employment, Kingston.

methods of extraction/usage of the ocean's resources, and it enhances community welfare terms of economic opportunities and social protection. It also places importance on insuring country resilience to natural disasters and climate change impacts.

The above stakeholders, national governments and aid agencies are not alone in seeking to develop blended finance, traditional investment, debt for nature or bonds. The Blue Halo partnership in the Caribbean was a private-sector collaboration with Barbuda, Montserrat and Curacao, financed jointly by private investors and domestic tourism revenues.[85] The Inter-American Development Bank (IADB) has also demonstrated keen, concerted interest across Latin America and the Caribbean, given significant market interest to tap into a new series of opportunities for the $128 trillion global bond market.[86] A survey of an undisclosed sample poll number, viewed the ocean economy as investible provided the right projects and criteria were obtainable. The IADB will consciously commit blue bonds and their business model to those which implement SDG 14 as a main focus, and indirectly towards the other goals. It places the onus on issuers to sufficiently persuade investors of the need, desirability and applicability of blue/oceans themed economy areas, as offering necessary and favourable returns, especially around the use and management of proceeds, project evaluation and selection, alongside monitoring and evaluation. It classifies potential projects worth investing as either being geographically situated round rivers/oceans/coasts or by their impact - i.e. the plastics industry and potential risk or scourge of marine pollution and hence possible intervention by the waste/circular economy. It advises the need for standardisation of metrics, taxonomies, criteria, methodologies and approaches for the blue economy. Its cited examples include carbon emissions in shipping fleets, IUU fishing catch, water intensity of production, freshwater table measurements.

In the IADB Bank report related to Barbados's blue economy, received in time for Version 2 of this Deliverable, finance is only briefly mentioned as part of a wider scope related to the broader sectoral analysis with macroeconomic contributions towards water, wastewater, fisheries, tourism, energy and transport. It also provides examples of potential policies and legal/regulatory frameworks that any potential funder or investor might potentially be bound by. Aside from improving actual ocean governance and coordination processes, including a centralised source to encourage investments, the source confirms the need to ensure a pro-business orientated investment climate and a willingness to try and establish mutually beneficial public-private partnerships as a form of financing, information, technical, political or other form of support. Simultaneously, it advises a preferred approach of including various stakeholders in some form of regular consultation or participatory structure. Alternative funding mechanisms for the private sector in Barbados can look at vocational training and skills development, supporting small and medium enterprises and other developments.

The FAO concentrate on fisheries and aquaculture and have been looking at adapting traditional insurance sector requirements towards blue finance. It considers the need to protect many vulnerable users from natural, climate, biological, chemical, technical, social and other hazards that may precipitate business and livelihood disruption. It is therefore working with the financial sector, technical experts and dependent producers/supply chains to form traditional aquaculture farm insurance that protects physical assets; indemnity-based insurance pledged against the harvest value for various hazards/risks; pooled insurance to introduce individual risk exposure and index-based insurance - against specific risks but relies on certain pre-set conditions to pay out, not necessarily the event itself. This can be swifter to access than traditional indemnity-based insurance, encourages greater risk caution and reduces the personal moral hazard incentive to claim if necessary. The FAO has also undertaken blue economy or blended finance guidance notes

[85] Rustomjee C, 2016, "Financing the Blue Economy in Small Island States," CIGI Policy Brief, London.

[86] IDB Invest, 2021, "Accelerating Blue Bond Issuance in Latin America and the Caribbean," Bogota.

considering its application to be necessary in certain scenarios where either government or the private sector alone would be insufficient. Investors can pool risks for various projects, sharing expertise including assessing impact performance and acquiring greater security against project, political, social and investment related risks.[87] Specific blended finance tools include technical assistance to aid with consultants/professional NGOs in monitoring projects for due diligence, providing small scale market incentives for more sustainable behaviour, medium risk project co-financing and technical support, along with far riskier direct credit guarantees and early stage finance.

From November 2017 to February 2019, representatives from the commercial banking sector determined the Poseidon Principles aiming to commit members towards measuring climate risks among shipping stakeholders to determine sustainability. This has been ratified by 27 leading banks, jointly representing approximately USD 185 billion in shipping finance. Members will, on an annual basis, measure the carbon intensity and assess climate alignment via carbon intensity, relative to established decarbonization pathways of their shipping portfolio using the methodology established by the Poseidon Principles. These Principles, along with the UNEPFI Principles on Sustainable Insurance, are often cited in established literature as providing benchmarks of comparison to ascertain true commitments to climate change and sustainability among the financial and insurance sectors. They are therefore included as potentially offering further globally accepted guidelines for shipping and other sectors.

Principle 1: Assessment of Climate Alignment: Signatories will, on an annual basis, measure the carbon intensity and assess climate alignment – carbon intensity relative to established decarbonization pathways – of their shipping portfolio using the methodology established by the Poseidon Principles.
Principle 2: Accountability: Signatories will rely on classification societies or other IMO-recognized organizations, and mandatory standards established by the IMO for the provision of un-biased information used to assess and report on climate alignment.
Principle 3: Enforcement: Standardized covenant clauses will be made contractual in new business activities to ensure access to high-quality data.
Principle 4: Transparency: Portfolio climate alignment scores will be published on an annual basis.

UNEPFI's Principles for Sustainable Insurance focus on:

> *"We will embed in our decision-making environmental, social and governance issues relevant to our insurance business."*

Possible actions:

- Establish a company strategy at the Board and executive management levels to identify, assess, manage and monitor ESG issues in business operations
- Dialogue with company owners on the relevance of ESG issues to company strategy
- Integrate ESG issues into recruitment, training and employee engagement programmes
- Risk management and underwriting
- Establish processes to identify and assess ESG issues inherent in the portfolio and be aware of potential ESG-related consequences of the company's transactions
- Integrate ESG issues into risk management, underwriting and capital adequacy decision‑making processes, including research, models, analytics, tools and metrics

Product and service development:

- Develop products and services which reduce risk, have a positive impact on ESG issues and encourage better risk management

[87] Food and Agricultural Organisation (FAO), 2020, "Blue Finance Guidance Notes," Rome.

- Develop or support literacy programmes on risk, insurance and ESG issues

Claims management:

- Respond to clients quickly, fairly, sensitively and transparently at all times and make sure claims processes are clearly explained and understood
- Integrate ESG issues into repairs, replacements and other claims services

Sales and marketing:

- Educate sales and marketing staff on ESG issues relevant to products and services and integrate key messages responsibly into strategies and campaigns
- Make sure product and service coverage, benefits and costs are relevant and clearly explained and understood

Investment management:

- Integrate ESG issues into investment decision-making and ownership practices (e.g. by implementing the Principles for Responsible Investment)
- We will work together with our clients and business partners to raise awareness of environmental, social and governance issues, manage risk and develop solutions.

Clients and suppliers:

- Dialogue with clients and suppliers on the benefits of managing ESG issues and the company's expectations and requirements on ESG issues
- Provide clients and suppliers with information and tools that may help them manage ESG issues
- Integrate ESG issues into tender and selection processes for suppliers
- Encourage clients and suppliers to disclose ESG issues and to use relevant disclosure or reporting framework

Insurers, reinsurers and intermediaries:

- Promote the adoption of the Principles
- Support the inclusion of ESG issues in professional education and ethical standards in the insurance industry
- We will work together with governments, regulators and other key stakeholders to promote widespread action across society on environmental, social and governance issues.

Governments, regulators and other policymakers:

- Support prudential policy, regulatory and legal frameworks that enable risk reduction, innovation and better management of ESG issues
- Dialogue with governments and regulators to develop integrated risk management approaches and risk transfer solutions.

Other key stakeholders:

- Dialogue with intergovernmental and non-governmental organisations to support sustainable development by providing risk management and risk transfer expertise
- Dialogue with business and industry associations to better understand and manage ESG issues across industries and geographies
- Dialogue with academia and the scientific community to foster research and educational programmes on ESG issues in the context of the insurance business
- Dialogue with media to promote public awareness of ESG issues and good risk management

Principle 4: Accountability and Transparency:

- We will demonstrate accountability and transparency in regularly disclosing publicly our progress in implementing the Principles.
- Assess, measure and monitor the company's progress in managing ESG issues and proactively and regularly disclose this information publicly
- Participate in relevant disclosure or reporting frameworks
- Dialogue with clients, regulators, rating agencies and other stakeholders to gain mutual understanding on the value of disclosure through the Principles.

UNEPFI published Sustainable Blue Economy Finance Principles, and a blue economy investment guide.[88] It focuses on seafood, fisheries and aquaculture, ports, maritime transportation; marine renewable energy plus coastal, marine and cruise tourism. Other goals which it alludes to, but does not specify indicators for, include calibrating the changes in marine biodiversity including loss of endangered, threatened and protected species; the extent of variations in coastal and marine habitat degradation; ecosystem resilience and provision of associated services and animal welfare. It advocates that any blue finance process is well advised to consider a standardised risk assessment that adequately incorporates physical, market, regulatory, operational and reputational risks. It also identifies traditional financing sources for the 5 sectors. Seafood fisheries and aquaculture depends mostly on working capital loans, project bonds or financing, Green/Blue labelled bonds and corporate financing. The true extent of developing sustainable financing mechanisms for the fisheries and aquaculture sector remains extremely complicated to determine unless risks such as the extent of IUU fisheries, marine pollution, changing climates, environment and population/resource pressures with possible species migration is accounted for. Inefficiency could be indirectly conveyed by the proportion of bycatch loss versus sold commercial product. Shipping/maritime transportation finance utilises commercial loans, private equity funds, debt private placements, sale-leasebacks and bonds, whereas ports mainly rely upon governments, private sector and multilateral infrastructure and development funders for investments. Overall, the main investment advice is to avoid the worst scenarios, challenge areas for improvement or seek out best practice. The source also advised the need for a more coherent and coordinated approach unifying stakeholders through comprehensive frameworks addressing risks and opportunities, standardising data methods, tools and indicators.

Blue economy finance interest includes the World Bank under the PROBLUE framework, the Caribbean Development Bank and the Inter-American Development Bank which have started various related initiatives such as Compete Caribbean and various consultancies. In 2018 Grenada worked with the World Bank to develop the First Fiscal Resilience and Blue Growth Development Policy Credit for US $30,000,000. In exchange for ensuring macroeconomic criteria such as restriction government wage and expenditure growth, these credits would be directly linked to financing activities that would aim to support Grenada's transition to a Blue Economy by strengthening marine and coastal management, marine ecosystem health, and climate resilience. The project was viewed as high risk, given that its initial screening criteria for this and other investments are contingent upon a climate change and natural disaster risk-vulnerability exposure and potential impact assessment. The World Bank employs a screening investment tool known as the Systematic Operations Risk Rating Tool (SORT). This assesses political and governance risks; underlying macroeconomic risks, sector strategies and policies, the technical design of the project or programme, the institutional capacity for implementation and sustainability, the fiduciary system, environment, social, individual stakeholders involved and others. The World Bank also proposes the need to review available and needed human, technical, infrastructure and other resources necessary, with a centralised information system necessary to make freely and publicly available data for decision making.[89] To develop the blue economy it specifically looked at government indicators such as increasing the protection of coastal and marine biodiversity as measured by the percentage of marine protected area. This aimed to increase from a baseline of 3% in 2016 to 20% in 2020. Another indicator included a total ban on single use plastic items and Styrofoam containers. It also looked at the percentage of annual PSIP infrastructure projects that were compliant with and had been screened with an online Climate Change Risk Screening Tool. St Lucia became a potential beneficiary through a 2020 Nature Conservancy brokered potential blue or marine conservation bond, including $100,000,000 of insurance to back a $235,000,000 debt restructuring into a specific

[88] UNEP, 2021 (a), "Turning the Tide: How to Finance a Sustainable Ocean Recovery. A Practical Guide for Financial Institutions," viewed 6 September 2021, https://www.unep.org.

[89] Aquino A, 2020, "Financing the Transition to the Blue Economy," World Bank Presentation, Manilla.

marine and coastal endowment fund, that would support grants and loans related to sustainable conservation and economic microenterprises.[90]

In 2020 the Barbados government and United States International Development Finance Corporation proposed a US $337,500,000 blue bond for marine conservation in a debt for nature swap.[91] This restructured arrangement would aim to solve at least 0.3% of national debt or $22,000,000. Limited information is however, provided publicly as to how either of these bonds will be structured, on what criteria actual impact will be quantified and how stakeholders will be made accountable for their intentions. The Nature Conservancy proposed a partnership based on its previous expertise of leveraging traditional conservation/marine protected area expertise, aiming to form a plan that would help directly commit to outputs of protecting 4,000,000 km^2 of ocean, save 13% of the world's coral reefs and benefit an estimated 43,000,000 people.[92] For Barbados, this would look at a Blue Investment Fund available for small and medium enterprises, climate resilient housing, waste/sanitation infrastructure and marine conservation/fisheries. As part of its conceptual note the project indicated that in time measures would be developed to conserve the marine environment, conduct accurate environmental and social project risk assessments, uphold fair labour and working conditions and Environmental Health and Safety (EHS) General Guidelines.

Also reflective of increasing international attention towards aiding the Caribbean to access sustainable ocean resources, in 2021 the Global Environment Facility (GEF) announced a partnership with the Caribbean Biodiversity Fund to implement a Caribbean Bluefin (Blue Economy Financing) Project.[93] This would require them to provide US $6,000,000 and their partners Bahamas, Dominican Republic, Grenada, St. Lucia and St. Vincent and Grenadines $43,427,990 in co-funding. Although still in its formulation phase, it has indicated a number of critical outputs which it will measure success by including:

> "*By the project end, at least 3 regional Ocean FMs generating a total of at least $300,000 to 600,000 per year for large-scale, long-term and reliable funding that prioritizes marine and sustainable use of coastal biodiversity and other ocean resources, including transboundary resources, through the deployment of innovative financial instruments"*.

As with other projects its main tools include marine spatial planning, developing carbon offsets and payment market themed mechanisms, bolstered by insurance, corporate social responsibility marketing campaigns and direct conservation. Supporting marine protected areas will be based on scientific conservation finance principles including ecosystems-based approaches and marine spatial planning. The source proposed developing green/blue credit cards with regional banks, similar to South Africa's Nedbank Green Affinity programme, which allocates a proportion of funding to conservation causes/investments and encourages donations. GEF also propose allocating $3,643,000,000 to aid businesses and other stakeholders through a centralised Blue Economy Business Hub, $19,343,330 to encouraging businesses with credit and incentives to invest directly and $3,900,000 to promoting awareness, communication and outreach initiatives. The remaining co-funding is derived from aid agencies and their donors including Germany's Kreditanstalt für Wiederaufbau (Credit Institute for Reconstruction) or KFW and Deutsche

[90] US International Development Finance Corporation, 2020, Public Information Summary - Blue Bond for Marine Conservation – Saint Lucia," IDFC Paper, Castries.

[91] US International Development Finance Corporation, 2020, Public Information Summary - Blue Bond for Marine Conservation – Barbados," IDFC Paper, Bridgetown.

[92] The Nature Conservancy, 2019, "Blue Bond for Marine Conservation Barbados," TNC Bridgetown.

[93] Global Environmental Facility, 2021, "Caribbean Bluefin (Blue Economy Financing) Project, GEF Concept Note, viewed 7 September 2021, https://www.gef.org.

Gesellschaft für Internationale Zusammennarbeit (GIZ), and France's Agence Française de Développement (AFD) and Fonds Français pour l'Environnement Mondial or FFEM.

2.4.3: Blue Economy Related Funding Sources, Criteria and Mechanisms/Tools - Aid Agencies/NGOs

Another increasing area of funding and support is that from NGOs and aid agencies or donors, who primarily targeted land and marine conservation activities. Historically these focused especially on establishing and retaining protected areas and securing community diversified livelihoods in fisheries and tourism activities. Many such as World Wildlife Fund, the Oak Foundation, David and Lucille Packard Foundation, Oceana, Ocean Conservancy, various government aid agencies such as USAID and UK Department of International Development were philanthropically minded, with less consideration provided in terms of screening tools, criteria and mechanisms to implement these areas. Others include the Save Our Oceans Foundation, Conservation International, Coral Restoration Foundation and various agencies. It is only comparatively recently that a shift towards establishing more long term, commercialisable outcomes to entice and incentivise investments, has been observed. In the South Pacific a review on financing large scale marine protected areas (MPAs) identified various tools including direct aid, private and philanthropic grants, a debt for nature swap, bequests and conservation trust funds; forms of insurance, user fees and levies for entry and various forms of green/blue themed taxes to penalise less sustainable activities, whilst providing investment, infrastructure and other incentives to convert towards more sustainable, nature based, marine and blue economy solutions.[94] The source also refers to environmental, resilience and social impact bonds, although these are not specifically ocean themed. Customers and investors can also commit to biodiversity and carbon offsets, alongside offering market compensation for suitable ecosystem services. The challenge with this approach, however, remains in aligning it to the current financial sector and related activities, ensuring adequate awareness and market interest. There is also a need to effectively produce independent oversight, to ascertain effective monitoring and evaluation. To establish these marine protected areas not only requires investments but other factors such as access to land/oceans; suitably conducive local, government and investor relationships; surveillance capacity, adequate human resources, information systems and a source of continuously sustainable finance.

For smaller, localised community marine management areas, the South Pacific offers several templates to ensure these are suitably financed, ensuring adequate risk mitigation, conservation protection, resilience and a renewable income stream.[95] Many of these mechanisms can be far more cost-effective and simpler to implement then various forms of bonds. Gigov et al (2021) interviewed over 100 stakeholders in Fiji, the Solomon Islands and Tonga. These confirmed that one option was a form of natural capital partnership, where tourism operators/other businesses work via formal agreement to directly support conservation activities. The second includes establishing blended finance for community based organisations. The third model extends the actual conservation funding being allocated to a decentralised governance approach via a provincial or island based approach that bypasses a centralised agency, ideally through a Ridge to Reef or an Ecosystem Based Management approach, from government, commercial or alternative funding sources. Within these forms of funding and management, are specific tools that can be utilised such as market related payments for biodiversity offsets, blue carbon and other financing bonds, green and community extension of microfinance, credit and loans. Debt can be restructured, or other user fee payment instruments created

[94] Conservation International, Starling Resources and Big Ocean, 2020, "Funding Marine Protection At Scale: The Current Status and Future Development of Financing For Large Scale Marine Protected Areas," viewed 9 September 2021, https://www.conservationinternational.org.

[95] Gigov A, Tabunakawai K, Thomas J, Areki F, Govan H and Tawake A, 2021, "Final Report Analysis and Development of a Replicable Community Managed Marine Area Finance Mechanism," Office of the Pacific Ocean Commissioner, Suva.

such as tourism, diving, fishing permits, filming and mooring permits, renewable energy and offshore oil and gas prospecting licenses; can be specified and required. As Section 2.4.5 confirms there is also the potential to support individuals, via entrepreneurship funding. These can lead to tangible outputs such as income and employment improvement or poverty reduction.

A 2017 needs analysis conducted by several NGOs in relation to the challenges of securing sustainable finance for Caribbean marine protected areas was undertaken for Antigua and Barbuda, the Dominican Republic, St Lucia, St Vincent and the Grenadines.[96] This aimed to calculate the specific costs involved in establishing, operating and monitoring these reserves; as a basis for determining the scale and quantities of finance and other resources required, along with ascertaining concerned stakeholder priorities. It even extended to calculating the recurrent cost per square kilometre to achieve total marine conservation goals of 20% by 2020. St Vincent and the Grenadines needed $14,900,000. It proposed that most of the shortfall would once more be contingent upon tourists as net direct users and beneficiaries via levies, user fees and taxes, given limited local resources. The tool of an ecological footprint study was proposed to consider where investments would make the most strategic sense, given natural and biodiversity requirements. Specific examples of tools include certification schemes to ensure funding is truly sustainable, based on pre-set criteria, nature fees in Bonaire and biodiversity and carbon emissions damage offsets in the Dominican Republic and direct payments or compensation for ecosystem services. In proposing sustainable financing mechanisms for conservation in EU Overseas Territories, which concentrated on the Caribbean, certain principles were proposed, which could be adapted to the blue economy via an Eco2Fin: An Ecosystem Services Framework for Sustainable Finance.[97] This calculates natural capital valuation and associated implementation costs, as a basis for determining user fees, fines, levies and other costs. This would encourage long term, continuous growth and the following necessities:

1. Beneficiaries truly receive the ecosystem services provided by the ecosystem.
2. Beneficiaries of ecosystem services pay for the benefits they obtain.
3. These payments are received by those charged with ecosystem management and stewardship.
4. Managers/stewards have the capacity to address threats posed to ecosystems.
5. And beneficiaries receive appropriate rewards for behavioural changes that reduce ecosystem threats.

The NGO/private sector Blue Prosperity Coalition, under the Waitt Institute, Oceans 5, UCLA and others, forms a private sector, blue economy finance initiative committed to generating further ocean sanctuaries, marine protected areas and other conservation initiatives, to directly contribute towards the global target of 30% by 2030. This encapsulates marine spatial planning, ocean governance and technical support by a variety of global stakeholders. As part of its investment selection and implementation process it conducts marine ecological and fisheries/ocean use assessments, community engagement, developing finance and support processes, monitoring and enforcement prior to the marine spatial plan and area development. From 2020-2030 it aims to provide $150,000,000 to conserve 1,540,000 Km^2 of ocean territory. Specific project achievements include 33% of Barbuda's Exclusive Economic Zone in 2014, Curacao, Montserrat, Tonga, the Azores, Bermuda, Federated States of Micronesia and Maldives. In May 2019, the Federated States of Micronesia committed to 897,000 Km^2. The Maldives committed to around 385,000 Km^2. In June 2019 Bermuda pledged to avoid fishing and other unsustainable activities in 20% or 90,000 Km^2. This further extends upon its existing 29 marine protected areas and 2010 valuation of its annual coral reef value over

[96] Cantin E, 2017, "Marine Protected Areas Sustainable Finance Needs Analysis Results, viewed 9 September 2021, https://www.researchgate.net

[97] Hagedoorn L, Dijkstra H, van Beukering P, Gallegos L and Smith M, 2017, "Sustainable Financing in EU Overseas Territories; An Assessment of Sustainable Finance Mechanisms in the Caribbean Region," JNCC Report, Peterborough.

$722,000,000 per year. The Azores also aim to protect 90,000 Km^2 or 15% of its terrain. Currently, and with especial reference for this study, the Institute is developing a Blue Ocean Prosperity Programme and Sustainable Financing Facility Prototype in Bermuda from August 2021. These are directly linked to the countries involved in the study because, not only does the Waitt Institute serve as a major funding source including the Caribbean as confirmed by the subsequent interview, it is also a significant example of direct experience in setting up and enforcing large scale marine protected areas, planning, enforcement, data management systems and policies. Its experience at a blue financing facility could be of direct interest if applied to UNDP as a subsequent consequence of this consultancy.

Conservation Finance Alliance focuses on a variety of partnerships and project incubation accelerator, financing sources that have recently created a section specifically committed to marine and coastal finance, especially fisheries, aquaculture and marine protected areas. They are targeting research and ecosystem centred approaches. In 2020 it received 75 project proposals from over 40 nations, but financed only 5 and are providing mentorship to another 10. These projects include Investment in Coral Reef for Coastal Protection by Barbados Reef Keepers in the Caribbean and Trust Rubber Fund - Halcyon Agri Corp Ltd by the WWF-US. They also extend to an East African Community Reef and Forest Bank by Green-Fi Systems Limited, the "Kenyir For Life – Protecting the Kenyir Watershed through Sustainable Financing Mechanisms," in Rimba Malaysia, along with the US Biodiversity Lending Instruments for Coastal Restoration and Protection by Natrix Inc. Mentored projects include Conservation Capital's Blue Buyout Fund in Africa, Chile's Capital Azul project on coastal communities and biodiversity along with one on international tourism for the Ministry of the Environment. It includes the USA Possible Planet's "Adapting PACE to finance conservation" and Carbon Yield Fund, an Egypt based diving boat sharing market site, and a Mexican ghost fishing gear, recycling enterprise.

The MAVA Foundation focuses on investigating viable conservation funding for marine areas in Western Africa and the Mediterranean.[98] Although it provides few specific examples, it too is examining green, blue and park bonds; seeking carbon and biodiversity offsets; payment compensation for ecosystem services along with Project Finance for Permanence (PFP). There is also specific impact investing, green taxes, direct biodiversity and conservation user fees. User fees are influenced by estimating use and non-use values associated with ecosystems. Green taxes may seem more permanent, with predictable income, but can be politically challenging to introduce and administratively arduous to modify or repeal. Examples may include royalties on possible exploration/prospecting, research and testing and/or sustainable commercial utilisation; fuel taxes, vessel and port green taxes or license registration fees/levies. However, many forms of impact investing and philanthropy do incur significant timespans to access and prepare - often 1-10 years - which can notably delay any potential impact benefits from manifesting, in contrast to the private sector, which can be far swifter to discharge if it can be convinced the returns and effort are so, worth it. Many projects - notably aid agencies -remain far more effective if they have eloquent, passionate advocates publicising their cause, able to evoke interest among the public, funders and possibly stakeholders. When considering blue bonds, however, the MAVA Foundation also considers the following core preconditions and screening criteria prior to issuing these forms of financing:

1. Effective sustainable management (including stock assessment for each target species, quota and company acquisition transparency, minimum percentage of supply, either certified or engaged in Fishery Improvement Projects).
2. Strong investment frameworks with measurable financial return and capacity to gauge asset performance.
3. Robust monitoring and enforcement system.

[98] Mava Foundation, 2018, "Innovating Conservation Finance in West Africa and the Mediterranean," MAVA Foundation, Dakar.

4. Involvement of underwriting and credit rating agencies to enable attractive investments based on more than one product and give investor confidence (e.g., WB, IBRD).
5. Secure tenure for fishers over an area or share of catch to incentivise and empower industry to pursue.
6. Sustainable resource use.

The NGO International Union for the Conservation of Nature or IUCN, and its Blue Natural Capital Financing Facility (BNCFF) with its Positive Impacts Framework, focuses on practical nature based blue carbon and infrastructure/ecosystem restoration solutions.[99] To understand that without properly functioning marine ecosystems, there would be no associated economic activities, it also favours a natural capital stock and services assessment, prior to determining the specific financing mechanism necessary, measuring the impacts, solutions and consequences. It also suggests monitoring potential climate change for any further revisions that may be needed. These must satisfy a minimum of 8 criteria to be effective nature-based solutions as below. It echoes the need for more practical investable projects, standards, awareness and experience as a precursor to enticing more reticent investors to change their minds. Examples of successful collaborative partnerships can aid stakeholders to change their minds, as well as establishing more sources that are simpler to access funding, where projects exist - especially in developing country/SIDS markets.

1. Nature Based Solutions effectively address societal challenges
2. Design of Nature Based Solutions is informed by scale
3. Nature Based Solutions result in net gain to biodiversity and ecosystem integrity
4. Nature Based Solutions are economically viable
5. Nature Based Solutions are based on inclusive, transparent and empowering governance processes
6. Nature Based Solutions equitably balances trade-offs between achievement of its primary goal(s) and the continued provision of multiple benefits
7. Nature Based Solutions are managed adaptively, based on evidence
8. Nature Based Solutions are sustainable and mainstreamed within an appropriate jurisdictional context.

Possible broad blue project categories could include, but are not limited to, sustainable blue economy activities that:

- Restore, protect and maintain diversity, productivity, resilience, core functions, value and health of marine ecosystems
- Provide sustained livelihood opportunities and strengthen livelihoods and communities dependent on the marine ecosystems
- Investments which strengthen, restore and conserve the blue natural capital for climate mitigation and climate adaptation
- Investments that address coastal resilience and coastal and marine climate adaptation challenges
- Activities and projects that reduce stressors to marine ecosystems, such as sources of pollution which can be from industry, agriculture, retail
- Infrastructure that is using nature-based solutions in the marine and coastal space
- Activities that strengthen coastal and marine governance, science and technology for the benefit of ecosystems
- Potentially, capture fisheries that have been confirmed to achieve the highest standards of sustainability and are benchmarked accordingly.

[99] Blue Natural Capital Financing Facility, 2020, "Blue Infrastructure Finance: A New Approach Integrating Nature Based Solutions for Coastal Resilience," BNCFF Report, viewed 7 September 2021, https://www.bncff.org.

The BNCFF also has a Positive Impacts Framework.[100] It defines impact investment as specifically having a positive, quantifiable and independently verifiable, nonfinancial impact with "intentionality" and "additionality" as specific predetermined indicators of progress. Aside from endorsing the UNEPFI Sustainable Blue Economy Financing Principles, it suggests the financial sector and other participants learn from possible examples such as the IFC Impact Investing Principles, Green Bond and Social Bond Principles, Sustainability Bond Guidelines, Adaptation Fund's Gender Policy, the UN Global Compact Principles and other social/green/environmental sustainability bonds criteria as best practise recommended guidelines. These impact indicators include the conservation and sustainable usage of coastal and marine ecosystems; climate mitigation and adaptation; enhancement of wellbeing and socio-ecological resilience; gender equality and women empowerment; along with inclusion and support of indigenous people. These in turn can look at potentially supporting sustainable marine ecosystem resources being harvested, traded and contributing to economic activity. It further specifies examples of activities in these areas, whilst recommending firm interlinkages to the Aichi Global biodiversity targets, the Paris Agreement on Global Climate Change and in implementing the SDGs. However, protecting certain areas may lead to causing increased unknown risks and pressures in other areas, whether adjacent or nearby - the transboundary/spill-over and opportunity costs of any potential investment intervention need to be heeded.

The Global Coral Reef Fund aims to partially overcome the significant gap in funding between the $1,900,000,000 currently committed across the world, and the $375,000,000,000 at a minimum actually needed for conserving these habitats.[101] (Global Coral Reef Fund 2019). It also aims to consult and spur the private sector to act via donations and partnerships the private sector in seeking to raise another $500,000,000 by 2030. It directly funds Caribbean nations including Barbados with Grenada and St Vincent and the Grenadines Its approach is a "protect-recover-transformation" process including leading to physical reef recovery and coral-reliant communities having tangible changes to their dependency, via more responsibly sourced income streams. This aims to pre-empt risk through updated research, utilising innovative technology to identify pioneering solutions and especially vulnerable sites that can serve as pilot projects. It aims to measure output through the formation of specific community projects, women empowered, jobs generated and physical areas saved. To fund marine protected areas, interest the private sector, governments and other stakeholders it is also calling for the development of convincing business models, mandatory global tourism levies, reef insurance and taxes. It, too, favours actual reef centred approaches to traditional corporate ESG frameworks using equity, bonds, loans, debt for nature conservation, start-up projects or small and medium enterprises. These areas could be self-sustaining and ultimately profitable through increased ecotourism and levies, fisheries yield, associated tax revenue, blue carbon and biodiversity credit offsets, fines, licencing and user fees.

To actually determine impact the Global Coral Fund has a number of core indicators related to the SDGs and marine productivity/ecological sustainability, which are highly recommended for this consultancy's purpose of identifying blue economy investment best practices.[102] . The most crucial environmental ones are species richness and overall biomass found in coral reef and associated ecosystems; the percentage of live coral cover in priority coral reef sites; the percentage of priority coral reef sites under effective protection and management and the ratio of grants vs. investment for coral reef conservation activities. The most critical threats or risks to monitor include bleaching event frequency and severity; pH of ocean water at coral reef sites; water quality in terms of nutrient overloading (i.e., nitrogen, phosphorus),

[100] Blue Natural Capital Financing Facility, 2019 (a), "Blue Natural Capital Positive Impacts Framework BNCFF Report, viewed 6 September 2021, https://www.bncff.org.

[101] Global Coral Reef Fund, 2019, "Leveraging New Finance to Protect and Restore the World's Coral Reefs: Call For Action and Engagement," viewed 7 September 2021, https://www.globalcoralreeffund.org.

[102] Bardoux-Chesneau P, 2020, "TOR Terms of Reference 2020 to 2030 Global Coral Reef Fund," viewed 7 September 2021, https://www.gcrf.org.

pollutants and turbidity due to suspended sediment, marine debris (e.g., plastics, derelict fishing gear) and impact and occurrence of natural disasters at coral reef sites (e.g., tropical cyclones and large storms). These measures are based on well-established guidelines for implementing, supporting and undertaking marine protected areas.

Table 2.4.3: Global Coral Reef Fund Indicators of Progress on Impact Investing and Intervention

Indicator	
1.1 Area (ha) of new climate refugia and priority sites designated as MPAs or LMMAs for coral reef and associated ecosystems (i.e., mangroves and seagrasses) protection	1.2 Annual capital expenditures (US$/yr) for strengthened management and enforcement capacities of MPA and LMMA networks
1.3 Species richness (# of species/ha) and fish density (# of fish/ha) in protection areas compared to previous levels	1.4 Integrated local threat index40 is decreased from high and very high levels (3,4,5 on the index) to low and medium levels (0,1,2 on the index)
1.5 Number of coral reef protection resolutions, declarations and laws passed for governing bodies. Including allocated national budget to implement coral reef protected area management and enforcement.	1.6 Ratio of protected area costs covered by the private sector vs. the public sector or grants((e.g. costs for management, monitoring and enforcement)
1.7 $MtCO_2e$ per year sequestered through protection and/or restoration of threated mangrove and seagrass ecosystems	2.1 Number of coral species resilient to climate change identified or created through breeding and genetic modification
2.2 Success rate (%), speed and efficiency (e.g., m2/year) of coral reef restoration efforts (use past restoration efforts in the same region as a baseline)	2.3 Coral cover (%) that survives bleaching events after restoration efforts compared to past bleaching events of similar severity and location
2.4 Government and private sector investments (US$) into coral reef restoration efforts and coral reef restoration businesses	3.1 Fisher income (US$/year) from sustainable fishery job vs. fisher income (US$/year) from non-sustainable fishery job. Additionally, ratio of fishers employed in sustainable fisheries vs non-sustainable fisheries
3.2 Mean standard length of caught fish (cm/fish) vs. baseline measurement at starting time of project (t=0)	3.3 Number of local entrepreneurs (total # of individuals) and women managing (# of women) businesses with a direct or indirect positive impact on coral reef and associated ecosystems vs. baseline (t=0)
3.4: Number of locals (total # of individuals) and women (# of women) employed in businesses with a direct or indirect positive impact on coral reefs and associated ecosystems vs. baseline (t=0)	3.5 ROI (%) of alternative livelihood initiatives supported by the GFCR
3.6 Carbon footprint of private sector (tons of CO2/business/year) vs. baseline (t=0)	3.7 Number of waste management and water quality initiatives implemented by the reef-linked business vs baseline (t=0)
4.1 Number of crisis plans incorporated into reef-linked businesses and initiatives to mitigate and be more resilient to impacts of large shocks such as intense storms, disease outbreaks, severe bleaching events, etc. vs baseline (t=0)	4.2 Proportion (%) of crisis conscience loan terms and deferment plans incorporated into loan agreements for businesses and initiatives at GFCR sites vs. baseline (t=0)
4.3 Number of parametric reef insurance schemes put in place vs. baseline (t=0)	4.4 Proportion of workforce (%) retained in GFCR- linked initiatives and businesses during major shocks compared to non-GFCR linked businesses in similar sectors and geographies

Source: Bardoux-Chesneau 2020.

The Caribbean Biodiversity Fund, with its endowment fund formed in 2012, focuses primarily on providing loans, grants, credit and financial support, mainly related to marine conservation, biodiversity and nature-based solutions, including those with marine/coastal applications, sustainable tourism and fisheries. It has resources up to US $125,000,000 in 2020, primarily from government and philanthropic sources. Funding is conditional upon realistic proposals, which not only have to be measurably protecting or improving the marine environment, but also capable of independently generating matched funding and self-generating revenue to ensure participants have a direct incentive towards committing.[103] In 2020 the Caribbean Biodiversity Fund hosted an event with the Caribbean Challenge Initiative and partnering with 10 Caribbean national conservation trust funds to publicise its financing approach and attain a collective presence on this issue. The Fund includes previously successful applicants from the three countries within this report's scope. One of its most significant screening criteria is to investigate whether proposals are based rationally on conserving biodiversity, enhancing resilience against threats, rehabilitate ecosystems and biome survival through an ecosystem-based approach. Both initiatives support initiatives which aspire "to conserve and effectively manage at least 20% of the marine and coastal environment by 2020". The second is the Sustainable Finance Goal: "to put in place fully functioning finance mechanisms that provide long-term, reliable funding to ensure marine and coastal areas are sustainably managed into the future." Through marine and land protected areas these solutions will not only consider traditional grants and donations, but the possibility of bonds, tourism fees, innovative tourism products and profiting from blue carbon. Impact investors, governments, aid agencies and multilateral organisations may also provide blended financing for various implementation and capital costs. To be eligible, applicants need to be within the member Caribbean nations, be legally and officially registered with appropriate information, management, skilled human, financial and technical capacity.

A 2016 study in marine conservation financing identified that, outside of direct government Marine Protected Area support, 73% of all funding arose from only 20 donors (illustrated in Figure 2.4.3.1) from 2010 to 2016, being heavily concentrated.[104] 45% came from the David and Lucille Packard Foundation, the Gordon and Betty Moore Foundation, Walton Family Foundation, Marisla and Oak Foundation. However, since then the Waitt Foundation has been especially effective in maximising their impact across multiple marine areas. Many of their recipients are similarly concentrated, dominated by US based organisations. In 2015 to 2016 alone, Monterey Bay Aquarium Research Institute (17% of funding among top 20 recipients), Oceana (10%), the Nature Conservancy (7%), Woods Hole Oceanographic Institute (7%), and World Wildlife Fund (6%) received 50% of the allocated funding.

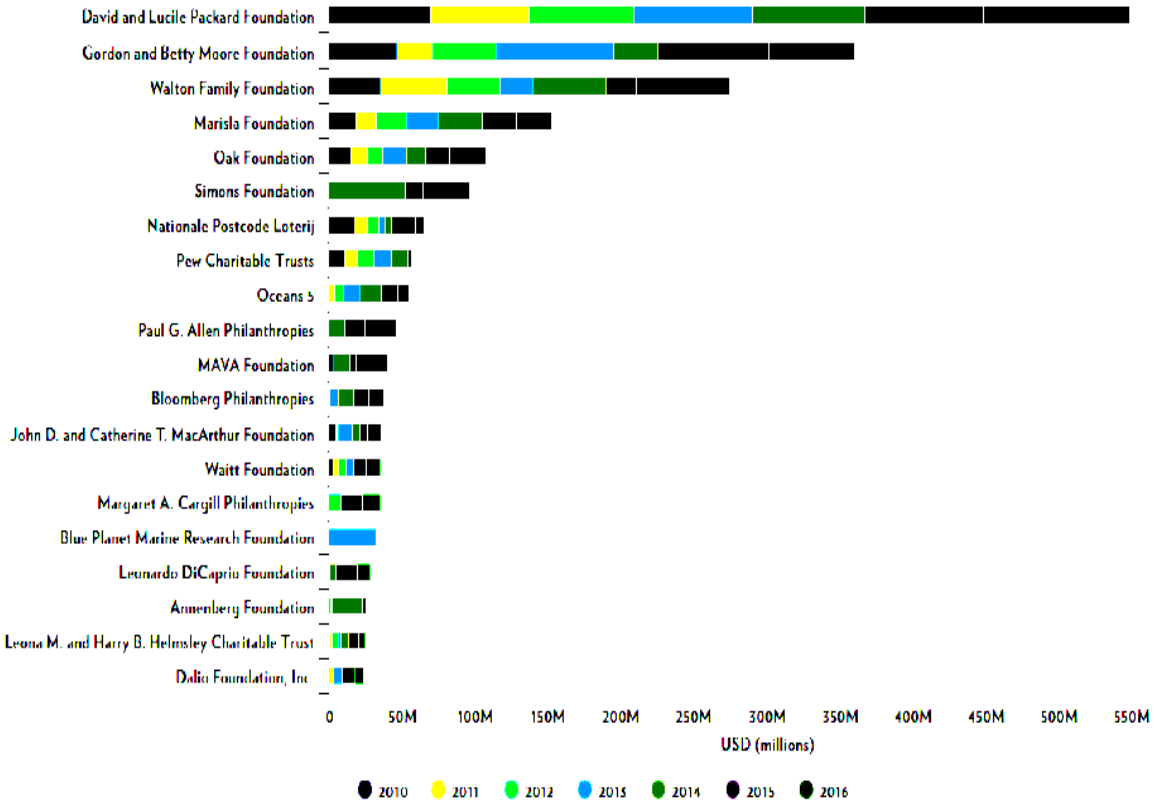
More recently, on 24th June 2021, Belize received the example of a 132,000 hectare sustainable marine reserve or Turneffe Atoll being financed through a hybrid bond and conservation grant arrangement of US $ 1,200,000 through blended financing. This encourages the local community to consider more sustainable fisheries practises and ecotourism opportunities. It was formed in partnership between the investment firm Mirova's Althelia Ecosphere Fund, in partnership with IUCN (International Union for the Conservation of Nature) and the Turneffe Atoll Sustainability Association (TASA) in partnership with Belize's government. Aside from these opportunities, it further proves the commercially viable prospect and interest of issuing blue carbon credits that can either be exchanged in a debt for nature/conservation/aid swap or to sell commercially to investors and companies seeking returns on rewilding and offsetting carbon and other greenhouse gas emissions. Therefore, it provides examples of measuring profitable yields as rates of return on investment; in tangible output such as species growth/biodiversity, carbon emissions sequestered, employment and income generated for communities. Subsequently, in September 2021, The Nature Conservancy

[103] Jan K, 2017, "Caribbean Biodiversity Fund Overview, Kingston.

[104] CEA Consulting, 2019, "Our Shared Seas: Global Ocean Data and Trends for Informed Action and Decision Making," CEA Consulting, Los Angeles.

(TNC) is assisting the Belize government to restructure its debt into blue ocean bonds maturing in 2034. As part of this effort, the government will specifically commit $23,400,000 to enact "durable marine conservation efforts and sustainable marine-based economic activity". This provides a restructuring of its traditional dollar denominated superbond - which will be cancelled and, subsequently, investors offered a change to convert or invest. The Nature Conservancy is favouring this process of incentivising marine conservation areas through profitable blue bonds, initially assisting the Seychelles but now investigating over 20 other nations, including dedicating its own Naturevest team to this area.

Figure 2.4.3.1: Top 20 Philanthropy Sources of Marine Conservation Finance 2010 to 2016



Source: CEA Consulting 2019

2.4.4: Blue Economy Related Funding/Insurance Sources, Criteria and Mechanisms/Tools - Private Sector

Gradually a number of private sector stakeholders and investors are committing to the UNEPFI Blue Economy Principles or otherwise prepared to structure or support related investments specifically in these sectors. Examples of these, identified through internet searches and multiple sources, are summarised in Table 2.4.4. Those that have expressed interest investing in the Caribbean region include Mirova-Althelia's Sustainable Ocean Fund, Eco Enterprises, Encourage Capital, Insure-resilience Fund, the Caribbean Renewable Energy Forum Fund, Cuna del Mar and CI Ventures. Beyond the rhetoric however, the sector is still quite opaque regarding the exact nature of their actual investments, or intended plans related to sustainable ocean finance. There is limited information publicly available on the scope of investments, the scale of their impacts; the screening processes, tools and criteria utilised in determining

decisions or comparative mapping and effectiveness analysis of stakeholders against performance criteria. This can complicate an assignment such as this one by noting many significant information gaps.

Table 2.4.4: Potential Blue Economy Investment Sources

Ocean 5	Alimentos Ventures,
Ocean 14 Capital	Blue Bio Value
Blue Natural Capital Financing Facility	Blue Economy Zone Industrial Fund
Althelia Funds	Aloe Private Equity/Energy
Mirova Sustainable Ocean Fund	Katapult Ocean
Blue Carbon Initiative	Bonafide Ltd.
Blue Solutions. Blue Area Fund	Fishing Accelerator
International Partnership on Blue Carbon (IPBC)	Greenbackers Investment Capital
The Meloy Fund	International Capital Market Association
Pro-Azul	Investas – Association luxembourgeoise des investisseurs privés
Ocean Exchange,	Mermaid Investments,
Ocean Hub Africa	Ocean Assets Institute,
SWIOFISH 1 Mozambique, Mozambique Pro-Azul	Boston Common Assets Management
Blue Oceans Partners	Rockefeller Asset Management,
Alpha Blue Oceans	Invest in Vibrant Oceans
Sea-Ahead	Encourage Capital
Aqua Spark	8F Asset Management,
Circulate Capital,	Deliberate Capital,
Posaidon Capital	Rockefeller Asset Management,
Bloomberg Philanthropies	Caribbean Renewable Energy Forum Fund
BNP Paribus	Purus Marine
Indico Capital Partners	Climate Bonds Initiative
Republic Financial Holdings	Marine Change
Investable Oceans	Fynd Ocean Ventures
Ocean Risk and Recovery Alliance	Blue Finance
Credit Agricole, Bank of China	Resources Legacy Fund
Finance Earth's Blue Impact Fund	DLA Piper
Dalio Philanthropies	Ocean and Aquaculture Investor Consortium at CREO Syndicate
CI Ventures	Cuna del Mar
Eco Enterprises	Insureresilience Fund,
Commonwealth Secretariat - Commonwealth Marine Economies Programme	Caribbean Development Bank
European Investment Bank	Sea-Ahead,
Horizon 2020 -Europe centred	SKY – Ocean Rescue Fund
Blue Prosperity Coalition	Conservation Finance Alliance
The Nature Conservancy's Blue Nature Alliance	Global Blended Blue Investment Platform

Source: Dyer J A; during this consultancy October 2021.

To support blue financing both in the Caribbean and globally, BNP Paribus have indicated both an interest in converting maritime to blue economy finance though insisting shipping and other agencies investigate decarbonisation and more sustainable practises, whilst other projects have to align to certain principles as they have developed an ECPI Global ESG Blue Economy Index.[105] This aims to aid investors to overcome traditional uncertainty as to where to invest in the stock market in 5 ocean cluster areas such as coastal livelihoods; energy and resources; fish and seafood; pollution reduction and shipping. It is published in January and July, targets 15 stocks per sector, with a market capitalisation

[105] Pourjade R, 2021, Ocean Sustainable Investing Within the Blue Economy Thematic," BNP Paribus, Paris.

value exceeding €500,000,000. It identifies and penalises businesses encouraged in contributing to unsustainable practises with lower ESG ratings, and the converse with higher ratings. The index has clearly proven to be profitable with a 19.53% return average over 1 year, 26.21% over 3 years and 39.35% over 5 years. Blue Oceans Partners and Swen Ocean Partners focus on moving on beyond initial start-ups via a range of blue/ocean themed investments and equity, especially areas related to resolving illegal and ensuring more sustainable fisheries, climate change and ocean pollution. Swen Capital Partners and Blue Ocean Partners rely on ESG metrics including carbon footprint reduction as a measure of contributing to decarbonisation or climate change mitigation and net environmental contributions as a basis for comparison about enhancing ecological survival prospects over time. Swen Capital Partners includes the SDGs. Its main priorities include the sustainable management of marine resources, aims to protect and restore marine ecosystem, whilst increasing profits, sharing marine data and information. More aptly for Barbados, Grenada and St Vincent and the Grenadines, it operates cross the Atlantic, Pacific and Indian Oceans and is prepared to consider Caribbean projects and proposals if marketable, scalable, sustainable and impactful. Its specific method is to compose an impact rating on the following:

1: Determine the impact on Ocean Health and a "Do No Significant Harm" Principle.
2: A set of impact KPIs defined with the support of external experts, measured and reported annually.
3: Impact targets calibrated deal by deal.
4: A robust impact governance consisting of 2 bodies:

The Impact Committee, composed of 2-3 independent experts, issues an opinion on the impact rating for every investment.

The Impact Governance Committee, composed of investor representatives, validates the impact KPIs and targets.

The independent shipping business Seaspan also published their own blue bond transition framework as a basis for raising financing and interest in converting their vessels to greater technical eco-efficiency and maritime decarbonisation.[106] This actual Transition Bond Framework is based on the same basic 4 methodology stages as for the previously cited Green Bond Principles, incorporating it in decisions relating to the use of proceeds, the process for project management and selection, the management of proceeds and the process for project evaluation and selection. It established a coordinating group with regular meetings and tracking/reporting processes to cover the finance, legal, technical and sustainability aspects. Over 9 years, records state that over 9,200,000 tons of CO_2 emissions were averted under the SAVER (Seaspan Action for Vessel Energy Reduction) initiative. It raised a Sustainability Loan in 2020 which specifically sought to reassure investors through an indicator measured by the percentage of charters which include credible sustainability-linked mechanisms. This would be independently verified through standards determining if the vessel followed International Maritime Organisation targets. Other measures include calculating and reducing port emissions, reefing the EEDI (Energy Efficiency Design Index) for new vessels and the EEOI (Energy Efficiency Operational Index) for vessels currently in operation. Others include the Vessel Annual Efficiency Ratio (AER) consistent with the Poseidon Principles, the per vessel impact of particulate matter, sulphur oxides (SOx), nitrogen oxides (NOx), and total carbon dioxide equivalents (CO_2e) emissions avoided; and the outstanding amount of net proceeds from the sale of any Blue Transition Bonds yet to be allocated to Eligible Projects at the end of the reporting period. Aiming to reduce the volumes of plastic waste occurring and the frequency of incidents involving oil spills, aim to be other targets that link to reducing threats to the marine environment. The process also requires an independent auditor or performance assessment consultant, to conduct a more impartial review as to whether or not these targets have been addressed.

[106] Atlas Corp, 2021, "Seaspan Blue Bond Transition Framework," Atlas Corp Report, London.

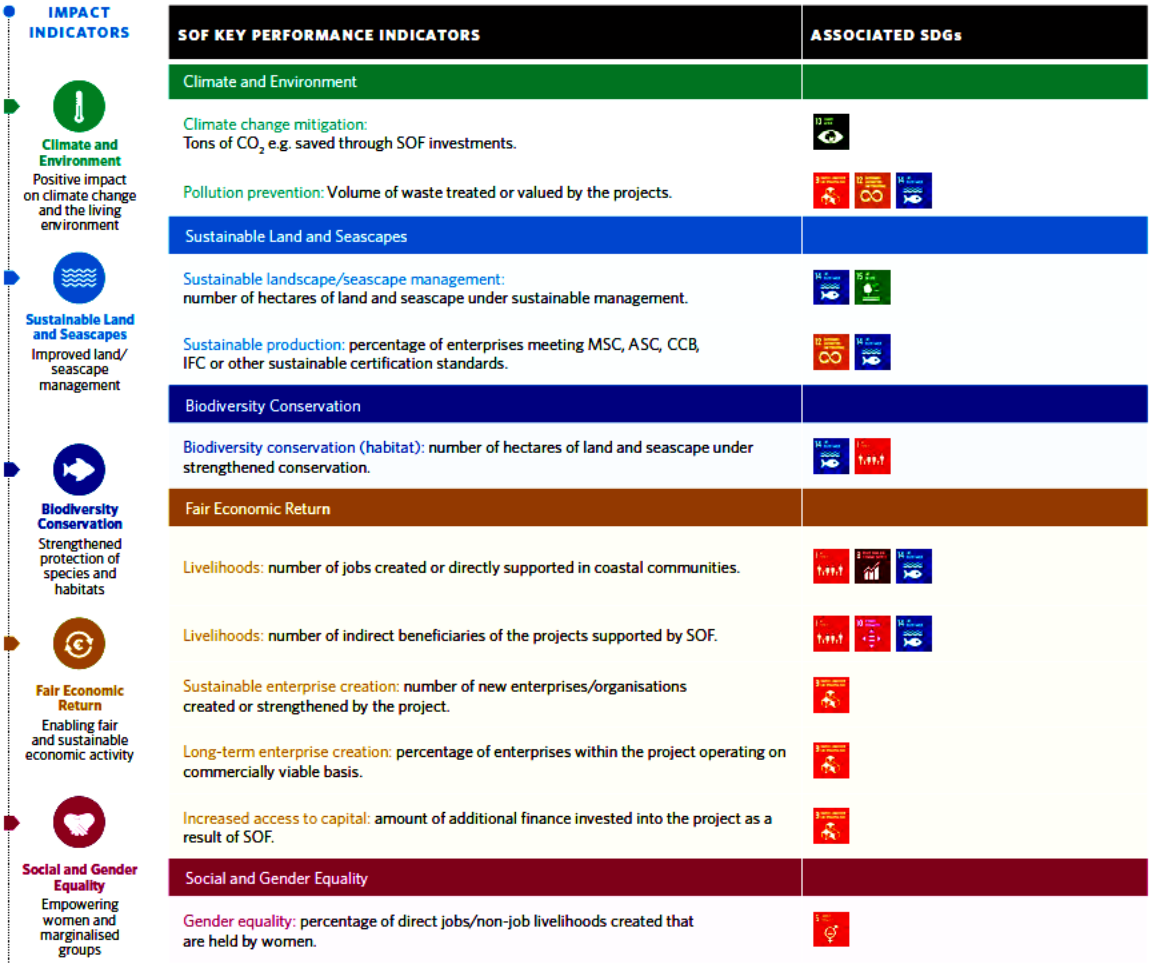
Despite limited transparency for many firms, Mirova via Althelia Ecosphere is one example of impact investors with a dedicated Sustainable Ocean Fund, capitalised with $132,000,000, not just limited to localised investments but open to global projects such as within the Caribbean, despite its base in Paris. Examples of specific impact include a Southern Asian waste collection, franchising business model, investments in recycling technologies and supporting the sustainable marine conservation financing of over 2,000 km^2 of marine Reserve in Dominica.[107] Its three main areas of impact investing are sustainable seafood, the circular economy and marine conservation. In order to qualify, it imposes stringent criteria specifically aligned to the Sustainable Development Goals which focus on conserving and restoring ecosystems, making profitable usage out of carbon emissions sequestration and ensuring climate resilient, sustainable livelihoods with employment prospects, as illustrated in Figure 2.4.4. It performs remarkably well, in contrast to many funds, in transparently pointing to tangible outcomes for its investments. For example, the aquaculture firm Kampachi Worldwide Holdings, within a year of investment increased marine fisheries biomass from 216 to 1,099 tons, and sustainable fish from 0.608 to 224 tons and from 47 to 66 jobs. It also helped to work to secure sustainable aquaculture certification (ASC) standards. Its host firm Mirova claims the need to adhere to a policy of strict, effective ESG frameworks in committing to its sustainable investments, an active stakeholder engagement policy including mainstreaming sustainability.[108] To assess ESG frameworks for investments and businesses it commits measurably to the SDGs, climate stability, healthy oceans and ecosystems. It provides specific examples of physical monitoring indicators e.g. tons of CO_2, emissions induced, emissions avoided number of jobs created, share of women in management positions and level of exposure or how much of the investments or market indices are exposed to certain issues. e.g. a share of investments offering solutions to climate issues.

Aqua Spark and Cuna del Mar are equity investment companies that focus globally on aquaculture related enterprises. Aqua-Spark has targeted 60-80 aquaculture and fisheries firms across species and globally. Its efforts focus on guidance and support across the entire supply chain including marketing and distribution, technology innovation and research and risk monitoring/mitigating. Finance in Motion's Eco Business Fund, has committed to potentially invest around US $350,000,000 in fisheries and aquaculture, especially to MSC stewardship certification standards. The Meloy Fund for Sustainable Coastal Fisheries, launched in July 2017 offering debt, mezzanine debt and equity in Indonesia, the Philippines and throughout Southeast Asia. Regen Noah focus on ocean based renewable energy; floating and off-grid infrastructure solutions including those linked to climate change resilience, blue digital and financial technology along with ocean based farming and blue biotechnology. Aside from impact investing the investment firm Noah with an interest in operating globally including in the Caribbean, although has not yet diversified its portfolio as yet; provides additional services such as professional advisory links to ESG frameworks and an accelerator platform. It is in the process of devising a Blue Climate Investment Ecosystem, which ultimately aspires to linking to a Blue Climate Fund, Fintech (financial technology) and ESG criteria-based carbon credits, a Blue Bank, blue bonds, Blue Stock Exchange and Foundation or Endowment Fund/policy related to marine conservation, ecosystem restoration and social causes. Eventually these can serve as possible next stages for the UNDP and national country blue economy implementing teams to consider.

[107] Althelia Ecosphere and Mirova, 2020, "Sustainable Ocean Fund Impact Report 2020", Paris.

[108] Mirova 2021 (a), "Our Approach to ESG Assessment," Mirova, Paris.
Mirova 2021 (b), "Mirova Engagement Policy," Mirova, Paris.
Mirova 2018, "Acting as a Responsible Investor: 2018 Impact Report," Mirova, Paris.

Figure 2.4.4. Core Althelia Ecosphere and Mirova Performance Indicators for Blue Economy Investments



Source: Althelia Ecosphere and Mirova 2020

Circulate Capital are working with USAID, the Ocean Conservancy and leading industry plastic producers through the Circulate Capital Ocean Fund. Created in 2018 with an initial market capitalisation of US $106,000,000 it focuses on waste management and the circular economy in Southeast Asia, primarily India, Indonesia, the Philippines, Thailand and Indonesia. As a venture capital fund, with average investment exceeding US $2,000,000, it also provides technical guidance and other expertise to overcome local partner's lack of scalability and other expertise. It focuses on collecting, sorting and recycling/processing but unusually has the support of industry. Fynd Ocean Ventures is based in Norway, but focusing on commercial ocean themed impact investing globally. It claims to have screened over 1,300 ocean ventures and committed investment to over 30 ventures. Its three priority areas include smart data drive, sustainable aquaculture; the future of ocean food including lower trophic species, lab grown and vegan along with health; nutraceuticals and beauty via blue biotechnology. As part of its screening criteria it seeks projects that consider climate change and biodiversity loss; and help address food security, social equity and more inclusive, fairer employment. For clear investment decisions it favours 3 priority targets such as commercially investable ventures with a clear exit strategy; venture building on a unique and scalable technology and asset light companies. Indico Capital Partners is based in, and focused on Portugal, and focuses on early-stage investments and start-ups in the blue economy with an

Indico Blue Impact Fund. This offers an initial market capitalisation of €20-50,000,000 aiming to invest €100,000 to €5,000,000 per company for the next 5-10 years, to generate sufficient returns on impact investing. It also has a Venture Capital and an Acceleration Fund for entrepreneurs' pre-seed and accelerator-based funding. It indicates marine conservation is to become an especially crucial concern to embed in all investment decisions.

In contrast, Ocean 14 Capital focuses their investments especially within food security and marine ecosystems. They have indicated to this consultant a generic willingness to consider Barbados, Grenada and St Vincent and the Grenadines if the returns and investment climate were favourable, but declined a formal interview. Ocean 14 Capital focuses on long term ocean health, with financial, environmental and social impact. . Performance outcome and criteria are linked specifically to reducing marine pollution, protecting and restoring marine ecosystems, minimising ocean acidification and CO_2 emissions along with efforts to end overfishing. Additionally, proposals are meant to link to the attainment of United Nations SDGs, especially number 14. They do not provide measurable investment indicators, or details of which investments they may have committed to and do not disclose the performance of these investments, creating limitations for this review in determining best practices for the Blue Economy Finance and Investment Framework. Alpha Blue Ocean screens potential investments on a parametric scoring criteria system and due diligence process for subsequent interaction with the proposed invested company or venture. It also applies its own micro and macroeconomic algorithm. It acquires investments through a PIPE or Private Investment in Public Equity model, with a global scope and now has at least 45 investments. Posaidon Capital also focuses globally, but on nature-based solutions including the ocean sector. It focusses on earth/ocean data to ascertain risks and ecological economics/natural capital-based means to financing such as The Economics of Ecosystems and Biodiversity Services and the Dasgupta Reviews. Finally, Investable Oceans focuses on related blue economy impact investment, founded in the United States and was designed to create a more coherent, central source of information for investors and a platform with which to identify entrepreneur and investment options.

More relevantly for Barbados, Grenada and St Vincent and the Grenadines, Oceans 5 represents an international consortium of investors primarily concentrating on forming marine protected areas and sustainable fisheries management related projects. Its project funding and selection criteria aim to maximise the size and effectiveness of a protected area, acknowledging the importance of protecting biodiversity and ecological function. For fisheries projects, these need to not only focus on conserving biodiversity and promote ecosystem resilience, but also be innovative, scalable and replicable. These projects need to be aligned with priorities of the respective donors and be of global ecological significance, with transboundary/international benefits not just local. Any investments also need time-bound, policy-oriented outcomes; so impact is clearly present and measurable. It also seeks evidence of long-term relationships and support from communities and government, prepared to collaborate and honour ocean conservation needs for the long term. Aside from providing financial, information, technical and other support; it also seeks to empower the development of local partners/indigenous people. Oceans 5 has indicated a willingness to consider the Caribbean, where valuable marine ecosystems exist. Oceans 5's method is to guide these projects through advocacy and involvement from a policy/regulation perspective, any communication and stakeholder participation necessary, coordination, cooperation, implementation plan and approach to ensure financial sustainability. It seeks to ensure that any success can be capitalised on via alternative and replicable models. It partly measures success via the indicator of the number of international and small-scale fisheries utilizing emerging technologies to develop scalable solutions for sustainable fishery management.

Credit Suisse conducted its own survey of 328 impact investors from 34 countries, identifying that only 21% had actually specifically considered SDG14 as a particular goal and 75% of stakeholders ignored the consequences of their choices

on the ocean.[109] Investment sources included those specialising in direct impact investing, listed equities, entrepreneurs, private equity, credit, loans, real estate, investment funds, fixed income, bonds, venture capital, infrastructure and other assets, At least 30% had no inclusion of the ocean or sustainable blue economy factors at all in their choices. The most familiar sectors for blue economy opportunities cited included those related to climate change mitigation and adaptation, mostly via marine renewable energy, solving marine plastic (and other) pollution, sustainable fisheries and aquaculture. They were also assessed on the extent of their blue economy awareness including which activities were truly worthy of including for sustainable investments. 74% favoured impact investors as being able to target lucrative returns in promoting climate change resilience, 66% in curbing ocean plastic pollution, 55% in overfishing and unsustainable aquaculture and only 35% for seabed mining or 26% for alien and invasive species. Stakeholder input expressed the need for more and larger blue bond investments; the need for them to be advised by investment advisors and bankers when they do exist, and there needs to be clearly linked quantifiable ocean/environmental and other outcome benefits as a direct response to that investment. Few ocean/blue growth themed projects and funds exist, and those that do have yet to provide sufficient testimony of their experience. 48% also complained of the need for actual, relevantly trained internal capacity.

In September 2020, Credit Suisse, partnering with Rockefeller Asset Management, launched the Ocean Engagement Fund reaching US $320,000,000 by 2020. It outlined SDG14, sustainable fisheries, aquaculture and related activities as its focus, and as a specific target. It uses the NGO Ocean Foundation as an implementing partner based on its marine conservation experience. It is initially aiming for 30-50 stocks. Another source advises using the SDGs, especially 14, as the basis for each company or investor to examine how they can participate in saving our oceans.[110] They can assess how they wish to directly linked to a sustainable blue oceans economy via core operations and supply chains and via the consumers, products and services it provides (i.e. the extent to which they are sustainably source or mitigate against/avoid harming the waterways and oceans). They can also determine if it takes active steps to inform people through changing consumer behaviour via marketing, advocacy, public outreach and awareness initiatives.

An investigation of potential blue economy investors to support the CLME (Caribbean and North Brazil Shelf Large Marine Ecosystems) receiving sustainable financing, mapped existing funds, individual investment firms and information sources.[111] The project's initial stage was implemented from 2015 to 2020 and its sponsors GEF and the United Nations Office for Project Services (UNOPS) are currently looking for sustainable blue finance to continue its existence. The three main mechanisms it favours include green/blue bonds, Pay-For-Success (PFS) models in the form of environmental impact bonds, and traditional public-private partnerships (PPP). In analysing the source it must be noted that attempts to attract these capital inflows remain variable as long as traditional investors remain unaware of the true fiscal potential of the Caribbean blue economy; a shortage of market friendly, impact investment projects exists and those active in the Caribbean blue economy lack awareness of the many forms of financial assistance and sources potentially available. More attention also needs to be paid to strengthening related training capacity to access these investors, to create these sustainable financing instruments and accurate methodologies which incorporate risks and impacts, given existing limiting constraints. Ownership or providing investment in exchange for equity may provide the highest returns or prove attractive to the investor, followed by debt, followed by impact based or blended finance, so ESG criteria has to be well designed to be attractive. Stakeholders clearly need to be informed as to what outcomes and impacts will exist. They also need greater certainty as to the ease of business and what happens upon the date

[109] Responsible Investor Research, 2020, "Investors and the Blue Economy," Credit Suisse, Geneva.

[110] Tribe, 2020, "Financing the Blue Economy: Strategies for Blue Investing," Tribe, London

[111] Eco Advisors, 2021,Production of a Baseline Inventory of Existing and Potential Sustainable Blue Finance Investors to Support the CLME's Vision, Eco Advisors Technical Report, Rio de Janeiro

of maturity - and how simple it is to purchase or exit the investment - as reassurance. It has to factor in any concerns over fluctuating currency, social, fiscal and political risk, which will determine how much funding can be raised. The source confirmed the need for clear blue economy investment guidelines, impact indicators and method assessments/standards to be certified and standardised. This reassurance would substantially encourage greater market support and interest.

In the South Pacific, one large insurance firm has investigated the concept of developing specific ocean related risk insurance in April 2020, specifically concentrating on potential threats to Pacific Ocean health, as opposed to the PCARFI initiative which sought to establish protection against climate change and natural disasters or catastrophes.[112] It would prove commercially viable and be structured similarly to traditional insurance schemes, but contains several elements, including parametric insurance, which encourage blue infrastructure, protection cover for any business disruptions incurred to blue economy activities from carbon emissions, coral bleaching or pollution. Lower premiums are offered for those that proactively aim to support more sustainable measures, including recycling/reducing waste and replanting. The third concept offers insurance as a reward to encourage fisherfolk to adopt safer, more sustainable fishing mechanisms such as introducing transponders on vessels; adopting cleaner fuels; reducing waste and other initiatives, voluntarily changing behaviour, whilst improving marine ecosystem resilience and ocean health. This is perceived as particularly attractive by potential users, given traditional barriers to accessing insurance by the formal financial/insurance sector. The scheme is being trialled in Vanuatu. The specific mechanisms include conducting an accurate risk and impact assessment matrix, calculating the accurate probability of these hazards occurring, the extent of local business resilience and vulnerability. The idea behind parametric insurance is that when a risk event does occur, finances will be subsequently available to invest in blue carbon, natural and ecosystem/infrastructure and business solutions that will have a measurable impact on restoring ecological/economic functions. It will provide a high degree of liquidity, quickly accessible for financing both coral reef and other biome rehabilitation. It could focus on reef and ecosystem clean-up; restoration; rewilding; eradicating alien and invasive species; reducing marine pollution through circular economy investments and other areas. Aside from insurance to protect and rejuvenate natural assets, other insurance could provide economic relief, financial resilience or environmental damage liability cover against potential threats, with lower premiums for efforts taken to reduce risk and vulnerability exposure. For these insurance products to work, they need accurate climate change, environmental and other risks exposure to be calculated.

The Bank of China launched one of Asia's series of pioneering blue bonds on 22nd September 2021. This bond is worth up to US $942,500,000, utilising Credit Agricole as an intermediary and relying upon the Green Bond Principles framework of the International Capital Market Association as criteria, detailed elsewhere. To establish these bonds, its method recognised the need to initially select Key Performance Indicators (KPIs); the calibration of Sustainability Performance Targets (SPTs), designing the actual bond; reporting process transparently and convincing impartial verification and monitoring processes. On 6th October 2020, Nordic Investment Bank launched the US $200,000,000 Baltic Blue Bond, (Nordic Investment Bank 2020). This primarily targeted wastewater and other infrastructure solutions. It is targeting a further $1,000,000,000 over the following 4 years. Sweden dominated the first 95% of initial interest, Finland 4% and 1% to other investors. The bond's scope specifically will defend water resources and ensure commitments to marine ecosystem restoration and biodiversity protection.

More interactions need to specifically engage the private sector to understand the tools, criteria and screening instruments they use and the motivations/criteria behind their specific investments. A 2020 World Ocean Initiative survey by The Economist calculated that 81% of contact investors were genuinely motivated to support the blue/oceans

[112] Willis Tower Watson, 2020, "Pacific Ocean Finance Program Insurance," Office of the Pacific Ocean Commissioner, Suva

economy, whilst 75% had actually searched for such investments. However, many noted a dearth of suitable investment-related projects, along with uncertainty over potential returns and sustainability. One personal experience has been this consultant's involvement with the World Ocean Council, which is committed to mobilising and expanding private sector commitments to fund and support the global blue economy. The World Ocean Council has been committed to forming a Global Ocean Investment Platform of best practises and tools, networking opportunities for stakeholders to directly receive input from investors at monthly convened, Ocean Investor Roundtables. It annually hosts a Sustainable Ocean Summit and in 2022 is planning to arrange a Global Blue Financial Summit after this was postponed in 2021 due to Covid19. There is also the development of the Global Blue Economy Innovation Initiatives Network, which provides a separate source to identify possible funding and related opportunities for ocean sustainability and blue economy related accelerators, incubators, entrepreneurs, challenge competitions and start-up hubs, Caribbean related examples are provided in the next section. The World Ocean Council ultimately aspires to an "Ocean ESG Project" to agree and formulate a common framework of international categories, criteria, metrics, indicators and impact measures for financing in these areas.

An appendix of relevant private sector investors who have expressed an interested in green, climate and blue/ocean finance, insurance, investments and entrepreneurial guidance was previously provided in this consultancy's Inception Report to help Barbados, Grenada and St Vincent and the Grenadine stakeholders, to identify these sources and assist in stakeholder engagement . This report affirms that, without meaningful engagement with the private/investor sector, there will be no market to either structure blue economy finance, investments and insurance support; or to actually purchase and develop these products. In the absence of an equivalent one for the blue economy, a 2021 Climate Bonds Initiative Survey for 19 green bond issuers identified incentives relating to high growth return prospects; social and investor pressures; interest in catalysing and supporting local markets; the lack of competitors; favourable government incentives; the need to amplify transparency; promote investment diversifying and increased markets/stakeholder participation; to encourage capital flows, pricing benefits and improved marketing/reputation.[113] Reducing the uncertain risks related to changing climates, environment and biodiversity provided additional inducements. They were also encouraged by government efforts to become more transparent on reporting and disclosure/green bond standards such as the China Green Bond Product Endorsement Catalogue and the EU Taxonomy.

The right targeted intervention could make a significant difference. A 2021 article calculated that, on average, the top 10 companies across 8 ocean/blue economy areas generated 45% of each industry's total revenue and 60% revenue by the top 100 corporations across all sectors.[114]. Many of these also contribute disproportionately in terms of pollution, emissions, ocean, water and environmental footprints, making them not only potentially profitable investments but, with the right level of cooperation, the chance to dramatically maximise potential impact. These industries include offshore oil and gas, marine equipment and construction, ports, container shipping, shipbuilding and repair, cruise tourism and offshore wind energy. More effort could be drawn in to incentivise these corporations and their traditional funders, towards including more sustainable ocean, environment and climate change related determinants of success, beyond immediate profits.

[113] Climate Bonds Initiative, 2021, "Sovereign Green, Social and Sustainability Bond Survey; The ultimate Power to Transform the Market," viewed 7 July 2021, Port Victoria.

[114] Virdin J, Vegh T, Jouffray J, Blasiak R, Mason S, Österblom H, Vermeer D, Wachtmeister H and Werner N, 2021 The Ocean 100: Transnational corporations in the ocean economy," *Applied Economy*, viewed 6 September 2021, https://www.researchgate.net

2.4.5: Funding for Blue Economy Entrepreneurs and Innovation in the Caribbean and Internationally

2.4.5.1: Globally

This Report advises moving beyond traditional approaches of funding and investment from the public and private sector, multilateral organisations, research institutes and philanthropic agencies, to utilise investments proactively to fuel innovation, ecosystem protection, enterprises and other solutions. Globally, increasing financing opportunities are being made available to any entrepreneur with the catalyst of a new idea. Investors are also simultaneously searching for new market sources in sustainable ocean sector, circular economy, climate finance and others, Therefore, this section expands beyond the limitations of previous research on blue economy, sustainable ocean and climate finance or investment; to investigate funding sources, criteria and insights related to entrepreneurship and innovation in the Caribbean and globally. Numerous international sources exist, including a number of the impact investor firms summarised in Table 2.4.4 and previously in the Inception Report Appendix V.

This consultancy also provides a suitable list of potential entrepreneurship resources such as prizes and competitions, accelerators, incubators and related resources in this Report's Appendix IV, to provide simplified, transparent ease of access for any potential stakeholder. As stated, many of these are actively involved in the regularly convened, World Ocean Council formed, Global Blue Economy Innovation Incubation Network of funders, entrepreneurs, accelerators and incubators for the blue economy. Through active involvement in this Network, this consultant was able to identify certain metrics, screening criteria and concerns voiced by many in the network, which can indirectly help to form related guidance. These stakeholders are often prepared to consider projects across all blue economy sectors, environment, climate change and any potential risk but are primarily concerned about the shortage of suitable investment ready projects, including those for entrepreneurs. For example, out of the 390,905 patents issued by the US Patents Office including areas related to oceans, including universities, less than 5% get commercialised, highlighting the millions of dollars that get wasted, and allocated resources of innovation, offering very minimal or non-existent returns to society. From observation, often ocean-themed and general entrepreneurs and governments appear to lack consideration of what investors are looking for as indicated below. Many proposed areas of innovation dematerialise, as their proponents often fail to prepare successful applications or pitch effectively, and which are advised to follow the basic guidelines indicated below. As part of this process it is essential to consider improving entrepreneur communication and relationships with investors and mentors. This list derives from personal experience in being a co-convenor of the World Ocean Council's Global Blue Innovation Incubation Network which aims to connect over 500 entrepreneurs with over 200 funders, accelerators and incubators devoted to supporting entrepreneurship from the Caribbean and globally.

Suggestions for Blue/General Economy Entrepreneurs Raised by Investor Participants

- Ensure that the presentation/pitch/proposal has not only style but substance - having a depth.
- It should be user/reader/audience/investor friendly - easy to understand so that the target audience can understand the message and that it delivers an impact within 2 minutes.
- Use many straightforward templates, as provided online.
- Simple clear articulation of value proposition.
- Who cares? The product needs to be marketed to specific audiences and not too generalised.
- The potential uniqueness of the product or selling point needs to be clearly conveyed.
- There needs to be not too general a target audience but more customised to the associated funder - i.e. undertake background research.

- Do your homework on what the investor is looking for in their remit - i.e. don't waste time; if grant or lender; understand what they invest in and at what stage they invest. Undertake simple market research and opinion polls. Talk to the people that may buy this product at the end of the day and secondarily help clarify the business model pays for it and what value do they get out of it.
- Identify customer, market, business and investment model articulately. Investigate the marketplace and the competition. Investigate how many are chasing the opportunity.
- Can the concept be effectively protected through trademark, technical design or patent?
- Is the team investible and appropriate? Or is it a technical inventor with no business experience?
- Is there an effective sustainable funding/market model?
- Grounded financials and assumptions. For example, a common mistake is that technical person will ask a financial consultant but struggle to explain the assumptions and projections.
- Information has to be clearly useful from an investor perspective, rather than getting overly creative.
- Is there a clear exit strategy in mind?
- What are the assigned impact indictors, are they reliable and how will they be monitored?
- How far are they in the investment/business concept development process?
- Is it an appropriate level and does it satisfy investor requirements?
- What is the potential scalability of the concept?
- Have they convincing evidence of resource management, policy and coordination, how to effectively leverage resources cost, time and labour effectively.

As examples of blue economy entrepreneur and investor principles, this Global Blue Innovation Incubation Network aimed to simplify access to finance by providing insights into the common requirements sought by the funding community and help entrepreneurs to improve upon failure rates, and to reduce the timeframe before implementation for early stage investment. Stakeholders are increasingly interested and looking for cleaner alternatives, but want a significant return and commitment from those selected to make them potentially investable. They have raised concerns regarding barely legible investment pitches, which have been noted anecdotally for high failure rates within the 3 countries, and elsewhere in the Caribbean and globally, by those contacted for this assignment including the Caribbean Biodiversity Fund, Compete Caribbean, Waitt Institute and others Additional concern was highlighted from academia - that many otherwise promising candidates with PhDs or Master's/career researchers have a high failure rate and can be often unwilling to listen to feedback. Additionally, governments, businesses or entrepreneurs are advised to contemplate: "What type of investor are you seeking - angels and personal involvement; institutional and venture capitalists; not just the type but the motivation and the characteristics?" Some will invest physically, but others seek to connect emotionally at a relationship level. Contrasting advice was offered on whether to be persistent and seek feedback if someone declines a pitch, funding or other form of support. One confirmed the need to have a dialogue as to what is missing and not to accept the first answer: i.e., "Tell me what you really think; why do you think that? Who do you think might be interested? What can be adjusted for the next pitch?" They counselled that actually "No" is a very important opportunity. There is an increasing concern on how to generate greater levels of collaboration and to cultivate the willingness to share best practises. Participants can look at more opportunities; develop new models to make the old models redundant; avoid wasted time and energy. Incubators look at funnels/pipeline for investors and investment ready proposals, to overcome the high failure rate and poor returns of many existing start-ups and emerging companies, ocean or non-ocean/blue economy themed proposals.

Stakeholders stated that often there is a problem of devoting enough time to start-ups for the mentor. If entrepreneurs fail to get advice and support, they will move on. One stakeholder advised having a conversation with technical experts/academics or those lacking business acumen: "Are you ready and willing to be CTO or COO and not be CEO?" The conversation ends if they are unwilling to work well. It is also pivotal to develop the concepts of environmental, social and financial sustainability, holistically and systematically at the beginning of the projects. It confirms that for the

three countries contained within the scope of this report, the UNDP Accelerator Labs in Barbados and the country implementing teams are advised to work with the private sector - existing businesses, entrepreneurs, these sources of venture capital and the traditional investment sector - to improve relationships and even encourage awareness of related insights into overcoming blue economy investment and financial barriers.

Many accelerators/incubators are narrowly focused on specific nations, regions or sectors with few exceptions. Stakeholders expressed hope that shared experiences and insights would reduce start-up failure rates, associated costs; avert pitch and accelerator/mentor/funding hopping from resource to resource. Yet there is a need to reach out to other sectors - not just those that define themselves by sector, ocean, maritime, the blue economy or others - but also for the clean-tech community and ocean community to come together as part of the solution: this applies to not only what is needed to implement the SDGs but also those of individual countries and entrepreneurs. For the three countries contained within this consultancy, it is also suggested reaching out to non-ocean-specific funds highlighted such as Pitchbook, as they are quicker to ensure sufficient cash-building via crowdsourcing, traditional investors and other sources than many of the more traditional maritime/ sources. Other resources include Liquid Grid, the Appendix listed resources and the Ocean Opportunity Lab (TOOL). This focuses on aiding various individuals, businesses and other entities to recognise and support commercial opportunities, from inception to commercialisation, as few platforms currently exist to identify these resources. Corporate structures may have networks, but the ocean change makers themselves may lack the awareness and connections and enabling resource access and information to bridge the generation gap. TOOL offers a significant number of user-friendly dynamic interface features including an Aquarium online event/marketing facility), Spawn - connecting industry with stakeholders; Tool Box for resources, Tool Global as an online community to connect, identify various risks/problems with potential solutions and TOOL Fleet - supporting, floating innovation and entrepreneurial hubs. Currently the platform has received support from at least 43 start-ups and 30 clusters/hubs.

This TOOL approach includes a pilot in Norway, where they worked with universities to identify a number of the key issues that they see important for their students, but which are not yet updated in the curriculum. Students could then work on these topics and research gaps for their Bachelor's and Master's theses. This model could be especially useful to overcome existing institutional capacity constraints and identify current research in a centralised platform with partnerships such as the University of the West Indies, Caribbean Maritime University, local colleges and others. It could work with UNDP, Compete Caribbean and others to ensure that any projects that do fail in Barbados, Grenada or St Vincent and the Grenadines, from one source, can be re-examined and, if promising, helped to apply for another, given how few propositions historically have applied for entrepreneurship funding. The focus has been on enabling the next generation to lead and create change in industries and also, from an early age, convert climate activists into business activists. The TOOL approach aims to respond to the gap identified of centralised insights and type of open platforms for the entrepreneurs to find the established resources and vice versa. Students can research specific projects in alignment with industry demands and societal problems. It also aims to showcase potential opportunities, to aid applicants, investors, incubators, accelerators and others. As part of the drive, the speaker indicated they/TOOL would reinvest 25% of profits for entrepreneurs into three streams for start-up ecosystems. The speaker also alluded to also wishing to specifically focus on empowerment of female entrepreneurs in particular. They mentioned they will distribute a joint info package to all through the WOC, including the link to the new TOOL Spawn site and access code.

Examples of global blue economy entrepreneurship sources include the following. Alimentos Ventures concentrates on sustainable fisheries, aquaculture, technology and blue biotechnology via start up, entrepreneur and incubation capital along with mentoring and facilitating finance among investors. One project was unearthed directly. In 2017 it

allocated $1,200,000 to MicroSynbiotiX in partnership with Enterprise Ireland, RebelBio, SOSV, and The Yield Lab. Indirectly it also supported HATCH, an aquaculture linked accelerator and incubation seed financing source. Blue Bio Value is similar in its scope and approach to Alimentos Ventures and is based in Lisbon, Portugal. Its investment screening criteria includes those related to feeding a growing population & ensuring sustainable food systems; enhancing health and well-being; mitigation and adaptation to climate change; addressing resource scarcity & preserving natural ecosystems and biodiversity; empowering a circular bioeconomy growth model and reducing plastic production & pollution. Techniques include a 7-week acceleration programme structured in 2-week "Growth Sprints" focused on access to funding, overcoming legal barriers, overhaul business models, user research and journey, product development, sales and marketing, amongst others. It requires that participants commit to individual CEO-focused leadership coaching sessions, offers access to Blue Bio Value investors network, including 1-to-1 investors sessions, along with a network of commercial partners, within processing and manufacturing industries and final fortnight in Lisbon to gain exposure to markets, presenting and a field trip. It is especially committed to the blue bioeconomy where start up investors can pitch their ideas. In 2019 it received over 110 projects but financed only 15 enterprises from 9 nations including Portugal, Spain, Denmark, Switzerland, Italy, Canada, Brazil, United Kingdom and India. Each participant receives €7,500 direct and up to €45,000 for costs. Examples include aquaculture nutrition, cosmetics, pharmaceuticals, biofertilisers and more sustainable glitter. Companies applying must comply with the following criteria:

- Model preferably based on a marine bioresource or with a positive impact on marine bioresources;
- Intentionally aiming to create positive impact in the marine world;
- Usage of sustainable and responsible sourcing and/or production methods;
- Preferably using high/deep (bio)technologies;
- Preferably leading to high value/high tech-based products, services and/or solutions;
- Targeted for the global market;
- Established company prepared to enter the market or already in the market;
- Having a fulltime team, with at least one of the co-founders working fulltime;
- Projects TRL or technology readiness level 5-7 that can demonstrate high potential to rapidly scale up to viable market applications.

Blue Ocean Leading Drivers (BOLD), based in Spain but open to global investments, concentrate on sectors such as on green solutions for industry, transport, urban development, clean renewable energy (generation, storage and CO_2 capture), and the maritime sector. Sustainability criteria are only very loosely demonstrated as a requirement, with the main identified, indicators of success being a worthy product, technical and economic viability, management and offering sustainable growth opportunities. Bonafide Ltd, operating since 2008, is another blended financing source which concentrates on viable fisheries and aquaculture. Project examples include the especially lucrative and high market demand for Pacific bluefin tuna, Sabeh shrimp in Borneo, Chilean salmon farming and South Australian oysters. Another includes yellowtail kingfish ranching for sashimi/sushi. Its monetary commitments were not ascertained. It also supported an entrepreneur concept for salmon from Japanese vending machines.

8F Asset Management focuses specifically on aquaculture. 8F's main commitment to blue economy and sustainable finance as determinants of impact investing are as a signatory of the UN Principles for Responsible Investment and the UNEPFI Sustainable Blue Economy Finance Principles. As screening criteria, it scrutinises potential investments for entrepreneurs related to seeking opportunities that contribute to United Nations' SDGs. Secondly, it looks at integrating Environmental, Social and Governance (ESG) factors analysis into investment mandates, strategies, objectives and processes. Its final main criterion considers identifying and capturing investment opportunities that

intentionally target positive environmental and societal impacts. One project example includes Pure Salmon with a recirculating aquaculture system-based technology and sustainable supply chain. An initial processing facility in Lesotho and $250,000,000 investment is estimated to produce up to 20,000 tonnes, provide 250 full time jobs and revenues up to 8% of annual Lesotho GDP, along with being powered by renewable hydroelectric electricity to minimise its emissions footprint impact. However, projects are still mostly in the inception stage. It has also invested in a 1,000 ton salmon farm in Brunei in December 2019.

The Eco-Enterprises Fund focuses exclusively on aquaculture, forestry and ecotourism in Latin America, extending equity, debt based, blended, mezzanine and structured loans/investments. The Fishing Accelerator echoes the above investment firms in its blue economy focus of sustainable fisheries but focuses on venture capital, technology and other start-ups and related pioneering project support such as capital, networking, marketing and mentoring. Its range of pursuits have linked to ocean data mining, autonomous vessels, navigation, energy efficiency, fishing gear, parasite monitoring, medicine, robotics/automation and improved storage, quality, logistics along with processing. Finance Earth's Blue Impact Fund includes a partnership with World Wildlife Fund (WWF) UK to focus on British-only sustainable ocean sector investments. Its prime mandate is to target enterprises producing sustainable seafood and aquatic plants that can generate attractive returns while delivering ocean resilience and recovery. The main impact indicators of success it uses are summarised in Table 2.4.5.1.

Table 2.4.5.1: Finance Earth Blue Impact Fund and WWF Indicators

Impact	How
Protect and restore marine ecosystems	• Creating de facto "no take zones" • Improving water quality through nutrient removal • Reducing incidence of disease and invasive species • Reducing waste and pollution
Reduce carbon and ecological footprint	• Direct carbon sequestration • Habitat creation • Creating new supply chain for alternatives to plastic and pharmaceuticals • Investing in space-efficient solutions through careful siting and multitrophic arrangement • Enabling vertical integration of renewable energy systems • Reducing adverse transport externality impact costs
Improve livelihoods, health and wellbeing for communities	• Providing employment, skills and economic growth • Providing locally-sourced seafood products for consumers

Source: Finance Earth 2021

A parallel structured, venture capital firm is Greenbackers Investment Capital, including the Greenbackers Cleantech Fund for technology innovation. It has mostly concentrated on the green, circular and climate economy, but is working towards the ocean/blue economy especially projects in renewable energy such as offshore wind and wave production. It apparently cites over 500 companies with initial pitch introductions of £2,000,000 to £200,000,000 for those who have advanced beyond the incubation/entrepreneurship stage and are looking to scale up more considerably/globally. Previous project examples include recycling, heat efficiency, and a company supporting marine and wind turbines via a patent oil filtration system; a logistics fleet optimisation telematic data network and another including a vessel exhaust monitoring sensor system to reduce emissions. Another includes a seaweed processing firm. In November 2017 it

financed Bombora Wave Power, attracting £10,300,000 of EU funds to support its 2½ year, £15,000,000, 1.5MW mWave™ wave energy powered demonstration project off Wales.

From 2018, Katapult Ocean in Norway has committed to global financing of enterprises and entrepreneurs across blue biotechnology and bioprospecting, aquaculture, energy, fisheries, and transportation/logistics. It typically has 2-3 funding grounds of applications per year with average grant sizes of $50,000-150,000. It extends to a variety of ocean industry, blue economy and technology investments across 7 nations and 4 continents, with 23 commitments and fair evidence of partnerships or collaboration. It focuses on the start-up entrepreneur stage of development via a 3 month programme. Areas of interest include wave and tidal energy; shipping; ferries and transport; tourism; biotechnology; desalination; undersea exploration; technology; fisheries; aquaculture; floating cities; desalination and eco-conservation. It consists of around $4,000,000 in venture capital, trading 8% equity for $150,000 to $300,000. It provides significant evidence of its specific investments including an electric boat propulsion system Evoy, anti-poaching drones (Atlan Space Morocco), Alga-life (textiles) and Tracio (blockchain enabled supply chain product traceability system). Others include an online water marketplace in Myanmar (Recyglo); a UK plastic waste powered system (Ichthion); fisheries AI telematics (Fishency); Nautix ship management software and Remora XYZ from Costa Rica - another seafood traceability system. Further investments extended to seaweed packaging (Oceanium UK) and ARC or artificial reef creation. In 2019 Katapult Ocean aimed for 12 start-ups. Shiok Meats in Singapore is creating artificial cell created seafood from laboratory sources rather than wild fisheries or aquaculture.

Mermaid Investments focuses on various initial and early commercialisation stage investors over 1-3 years per each investment, including marine technology and robotics; fisheries; aquaculture; seabed minerals; marine renewable energy; biomaterials and biotechnology. Ocean Hub Africa was only recently started in Cape Town South Africa as the first related blue economy entrepreneurship, accelerator and incubator hub for start-ups, and is far too recent to have made progress, although initially aiming for 6 projects to support. It proposes a 6 month programme and is open to participants across all blue/ocean economy sector activities. Support extends to partnership and mentoring, finance, cloud service, the Internet of Things and engineering software. It connects to Blue Oceans Partners, Ocean 14 Capital and elsewhere supporting partners. Sea Ahead created another venture capital and angel investment firm related to the blue economy especially in technology and innovation. It identified over 500 initial investments, but initially looked to support far fewer including Legitfish, Resolute, OnVector, Arc Marine, Pliant Energy Systems, Adaptive Surface Technologies, FLITE, Terradepth. ShipIn, Synthetik, Port Call, Freight Flows and SEATRAC. Others include Oyster Tracker, DURO-UAS, BLK Sail, Ashored and Moran Cyber. Sea Ahead screen investments for ocean centric economic, social and environmental sustainability. It has developed a platform for mobilising seed funding to investments annually via crowdfunding.

Seastainable Venture based in Barcelona, with a Mediterranean and global focus, orientates its interests on entrepreneurs and others with nature-based solutions. It favours an ecosystem based and natural capital valuation approach. As an investor it seeks tangible outputs from its interventions such as an increase in marine/terrestrial biodiversity, biomass, and ecosystem resilience, and contribution to natural climate resilience, carbon sequestration and storage. The approach emphasises repairing impaired marine ecosystems and promoting greater flourishing of the blue economy, through rewilding and propagating more species. It incorporates marine spatial planning technology to help guide the pursuit of environmental, economic and social sustainability. Sky Ocean Rescue Fund is especially targeting marine pollution and plastic reduction as part of the circular economy including material innovation, responsible consumption and improvements in the recycling efficiency process as its investment strategy with £25,000,000, covering all stages from pre-seeding to full mass commercialisation, across the UK and globally, including

the Caribbean and three countries in this report. It currently offers a commitment to 20 projects. Examples include a reusable container centred grocery delivery service (Loop) and disposable paper bottles, wood chips packaging, seaweed sachets, recycled paper bags and others. It is also part of the world's largest seagrass restoration project - around the UK - to overcome a 92% loss over the last 100 years. This will assist in a blue carbon offset scheme. Other financed support includes Nordsense - a full bin monitoring sensor, Eugene to detect the sustainability of European packaging, Naturbeads (avoid microbeads) and HD Wool. Finally, Sustainable Oceans Alliance through its Ocean Solutions Accelerator and microgrants program is based in the USA but has looked to provide grants to help ocean conservation minded activists and entrepreneurs across the Caribbean and elsewhere. It has 6 screening criteria for potential investments including:

1. **Teams:** The team is ambitious and the mission aligns with the values of Sustainable Ocean Alliance.
2. **Market:** Start-ups with a large target market that can support the growth of their business.
3. **Traction**: Start-ups that have found initial traction with customers, partners and/or investors.
4. **Impact:** Start-ups that are solving real problems in the ocean sector and improving ocean health.
5. **Scalability:** The solution is feasible, scalable, and the start-up has a plan for generating revenue.
6. **Vision**: The team is ambitious and their mission aligns with the values of Sustainable Ocean Alliance.

2.4.5.2: Caribbean Specific Entrepreneur and Innovation Based Funding

Based in Barbados, the UNDP Accelerator Lab specifically seeks to develop a new generation of blue, green and climate economy related entrepreneurs, to accelerate innovation potential in the Caribbean. The Lab is partially funded/supported via the German and Qatar governments and its Fund for Development. Its sectors specifically include tourism, biotechnology and waste management, sustainable financing through devising blue social impact bonds, renewable energy, and fisheries/aquaculture. Another tool to inspire entrepreneur appreciation and market recognition is the concept of a blue badge for blue sector specific initiatives. It also helps endorse locally sourced solutions to challenges and constraints facing the region and support/guidance with policy development to spur further creativity. Although it does not fully detail the related screening process, it favours the tools of solutions mapping, to explore and assess society and individual ideas and conduct pilot projects/finance, technical and other assistance. Examples of local projects have included traceable tuna, a coral reef mapping robot or Bluebot, sargassum seaweed-based biofuel and organic compostable packaging.

Compete Caribbean was formed in 2012 to further develop business competitiveness and entrepreneurship across the region. It has been actively developing blue economy business development, entrepreneurship and supporting innovation. It is is a partnership between the Inter-American Development Bank (IDB), the Foreign, Commonwealth & Development Office (FCDO), the Caribbean Development Bank (CDB), and the Government of Canada. With IDB Invest it has launched a number of rounds requesting proposals for funding research projects, and a consultancy in August 2021 to investigate how to promote local businesses and entrepreneurship in the Caribbean. It offers a range of services and guidance not only to entrepreneurs in the blue economy, but also to any potential private sector business or individual entrepreneur seeking to undertake an idea. This includes via Cluster Operations or initiatives that overcome barriers related to economies of scale and competitiveness. It offers Innovations Funds to offer funding to initiatives aimed at resolving low productivity. There is also a Technology Extension Service: technical assistance to improve business management processes and production processes, along with Entrepreneurship technical assistance to institutions that provide entrepreneurial support. Not only could this be directly applicable to any new or existing blue economy enterprise, but, in parallel with the financial sector, could be linked to UNDP and national Barbados, Grenada, St Vincent and the Grenadines partners, providing the necessary support and guidance needed

to overcome any potential gaps in existing capacity. Compete Caribbean also held a Blue Innovation networking event in April 2021, a Belize Seaweed Innovation Forum, development of blue economy business proposals and other initiatives.

The Branson Centre of Entrepreneurship in Jamaica previously focused on microscale blue and general economy entrepreneurs. However, its next phase appears to be scaling up the impact investing and growth requirements of more mature companies, with a current funding round of companies with a revenue range of Jamaican $25-200,000,000. The aim is to improve market prospects and link to other major scale investors willing to commit $1,000,000 + to scale impactful, globally competitive, sustainable businesses that lead to social, environmental and economic change. Limited information exists as to the potential indicators utilised.

The Canadian government, InfoDev and World Bank committed US $20,000,000 to the Entrepreneurship Program for Innovation in the Caribbean (EPIC) for 7 years. This included several programmes such as Accelerate Caribbean; the Access to Finance programme via LINK Caribbean; Women Innovators Network in the Caribbean; the Caribbean Climate Innovation Centre and the Caribbean Mobile Innovation Project. However, none of these are ocean/blue economy specific and approached stakeholders indicated minimal awareness of these concepts and how they might be related to their investment or entrepreneur recruitment strategies. There is also the Caribbean Angel Investors Network - a voluntary independent association of investors as a crowdsourcing and online venture capital/other business support seeking platform.

Although more focusing on climate change and the green economy, the Climate Smart Accelerator aims to facilitate complex transactions by bridging governmental and private sector interests in the following themes: resilient infrastructure; renewable energy and energy efficiency; electric vehicles; oceans/agriculture and innovative financing. A diverse range of partners have pledged their support to the initiative, including: the World Bank, Organization of Eastern Caribbean States, the Inter-American Development Bank, the Organization of American States, and the University of the West Indies. It offers a variety of projects and funding source types such as support in accessing grants venture capital or Regional Funds; debt for nature swaps or Blue Bonds; forms of impact investment; low interest loans and supplier financed/other support. It also specifically seeks measures designed to help contribute towards protecting 30% of lands and oceans by 2030; promotes 90% renewable energy for all in the Caribbean, along with climate, economic and social resilience.

To conclude, there are several examples of blue economy entrepreneur solutions within Barbados, Grenada, St Vincent and the Grenadines that have been successful in their funding applications, whereas others have failed for various reasons, such as those detailed in Section 3's Compete Caribbean interview. These can, however, provide examples of opportunities that could be publicised by the National Blue Economy Implementing Committees, to try and encourage not only investor interest but also a broader market demand by the public. Simultaneously they are examples for existing businesses, students and potential entrepreneurs to be inspired by to create their own contributions to the blue economy. For example, in Barbados in 2019 this included Ten Habitat's "Totally Traceable Tuna: Technology and Blockchain Enhancement of the Barbados Tuna Supply Chain for Export." This aims to improve traceability of the tuna supply chain and enhance product quality with advanced testing. It employs a combination of technologies which include portable histamine testing, electronic radio-frequency (RFID) tags, quick response (QR) code tags, and scanning devices to develop better handling methods and collect information about the journey of a tuna at various points along the supply chain. Unfortunately, these other examples are not publicly listed on their website but a request has been submitted to Compete Caribbean, following an interview with several representatives.

2.4.6: Blue Economy Related Funding Sources, Criteria and Mechanisms/Tools -Other Lessons from Sustainable/Green and Climate Finance

In reviewing many sustainable green, climate and blue economy related funding sources, it is clear that many focus around concepts of conserving/rewilding the marine environment, but also the role of green and blue carbon - as a sink to mitigate climate change. Therefore, its various roles, values and mitigation offsets need to be scientifically and meticulously calculated. Including blue carbon offsets and a carbon market can provide significant economic and ecological value, providing revenue streams and turn otherwise less viable conservation areas into prospective blue/ocean investments of note.[115] Under the REDD+ voluntary initiative, it has attained a level of interest, proving it to be competitive with land based/afforestation schemes. The same principles would apply, including establishing a coordinating governance framework of stakeholders to rally and spearhead support; actual participation; a data collection and monitoring/observation system; adjusting and devising methodologies to accommodate local contexts and constraints. Blue carbon needs to establish its own regular trading markets and emissions schemes and link to existing financing mechanism, where possible.

This is all confirmed by the International Partnership for Blue Carbon.[116] Although it is not the scope of this study to examine in detail, it must be noted many examples exist proving the ecological and economic significance of blue carbon and how these values can be calculated. These sources often also contain examples of ecologically vital of marine ecosystems and their carbon value. For example, Abu Dhabi Global Environmental Data Initiative (AGEDI), UNEP and GRID-Arendal, estimated over US $500,000,000 worth of ecosystem service value, aside from storing 41,000,000 tons of CO_2, from the Emirate's wetlands. An IUCN guide to blue carbon identified it as an opportunity to bridge the funding gap between climate change mitigation/carbon sink financing and that of marine conservation as a direct motivation.[117] Stakeholders can therefore apply to related organisations such as the GEF Trust Fund, Special Climate Change Fund (SCCF), Least Developed Countries Fund (LDCF), Green Climate Fund (GCF) and the Adaptation Fund. This is aside from voluntary carbon markets and standards, until specific blue ones are more regularly convened internationally, recognised publicly and supported. Certain standards and guiding principles in selecting investments can then also apply such as the Climate Bonds Initiative and their following guidelines:

- The investment results in land and natural resource management that directly contributes to reducing atmospheric Greenhouse Gas concentrations (GHGs), consistent with avoiding dangerous climate change, and, at minimum, has a net positive impact on mitigation (i.e. net GHG reduction).
- The issuance should demonstrate significant attention to climate risks and a clear plan for achieving a positive effect on adaptation capacity and socio-ecological resilience in a manner consistent with international, national and sectoral priorities and other relevant, scientifically robust guidance.
- There is periodic and independent third-party assessment by accredited assessors of alignment between (i) stated uses and objectives for bond proceeds and (ii) actual activities and outcomes (direct, relevant impacts) supported by bond proceeds.

[115] Thomas S, 2015, "Blue Carbon: Study of the Potential of Coastal Ecosystem Resource Management in Global Climate Policy and Carbon Markets, University of Queensland PhD Thesis, Brisbane.
Gordon D, Murray B, Pendleton L and Victor R, 2016, "Financing Options for Blue Carbon: Opportunities and Lessons from the RED+ Experience," Nicholas Institute Duke University Report, viewed 13 June 2020, https://www.duke.edu.

[116] International Partnership for Blue Carbon, 2017, "Blue Carbon Introduction for Policymakers," International Partnership for Blue Carbon, viewed 6 September 2021, https://www.bluecarbonpartnership.org.

[117] Herr D, Agardy T, Benzaken D, Hicks F, Howard J, Landis E, Soles A and Vegh T, 2016, "Coastal "blue" carbon. A Revised Guide to Supporting Coastal Wetland Programs and Projects Using Climate Finance and Other Financial Mechanisms," IUCN Guide, viewed 6 September 2021, https://www.iucn.org.

- There is a neutral (at minimum) or positive net impact experienced by stakeholder groups in local communities and a neutral (at minimum) or positive net effect on biodiversity and regulating ecosystem services (e.g., water supply, air quality). Compliance is maintained with all existing relevant regulations.
- Proceeds from such financings can be applied in a wide variety of ways, which can include acquisition, restoration, installing and upgrading enhanced information systems for observation and early warning or to promote resource use efficiency, e.g. minimize waste.
- Protecting or enhancing natural buffers in coastal and riverine zones (e.g. mangroves, sea grass, corals) and restoring wetlands to reduce impacts of sea level rise, flooding, storm events.
- Introducing new agricultural techniques to restored wetlands, to keep them in production while saving the carbon stock; fostering sustainable aquaculture practices (including input sourcing and management); creating micro-credit and insurance mechanisms to help land users cope with extreme events and other similar options.

Many of these examples and tools have been examined individually by several sources; but with comparatively limited attempt to integrate them into one synthesised framework. Existing literature has also provided generic considerations in developing sustainable ocean/blue economy, green economy or climate finance related activities. It is clear, however, that irrespective of the tool and instrument type, the screening criteria, the source, client, market; activity or location; it all requires significant attention and investment in ensuring sufficient adequate ocean data and monitoring mechanism exists in a format so as to be both accessible and practical or useful to intended stakeholders.[118] Ecological economics approaches and methodologies can be therefore adapted to the oceans, being currently focused on land mechanisms to provide a basis of determining less tangibly measured values. In financing the blue economy, it is clear that investments and tools will need to be centred on transparency, so that they clearly align to SDG14 in particular and that stakeholders can feel reassured before committing their wealth.[119] Relationships, active marketing and communication will play apart as the traditional ocean industry sector may be less familiar with or initially be mainly too reticent to become more sustainable. Knowledge and usage of the various best practices and aspects that ensure a "blue" economy, which prioritises long term ocean health, prosperity and economic or ecological survival, are not always practiced both in the three countries within this consultancy and globally, as informed by field research, a review of over 120 related sources and participation in the World Ocean Council Blue Finance Investor Roundtable and Network.

The Asian Development Institute proposes that a regulatory driven, blue economy financing mechanism needs to be conscious of institutional systems, their strengths, processes and limitations to adapt smoothly.[120] A well-designed structure will therefore carefully consider the types of eligible stakeholders and investable projects to be recruited and considered; the impact measuring or performance criteria; existing and forthcoming stakeholder concerns, requirements and limitations; a distinctive and effective legal policy; monitoring, compliance and enforcement or oversight framework. Although the actual institutional analysis of Barbados, Grenada and St Vincent and the Grenadines blue economy stakeholders forms the basis of Report 3, it may be critical to ensure the creators of the designed bond or financial tool investigate such weaknesses prior to issuance. Of the few blue-themed bond examples currently existing or planned, very limited provision has been made to allow major private sector involvement - whether large scale institutional financial/company and major investors or smaller scale individuals. Accurate valuations of ocean/blue financial flows, related integration into existing systems and suitable education/training would assist the design process to be undertaken by many more nations, aid agencies, businesses and financial institutions. Given

[118] Thiele, T, and Gerber L. 2016, "Innovative Financing for the High Seas," viewed 9 September 2021, https://www.wileyandsons.com.
[119] Gardiner D, 2021, "The Oceans a Resource and the Challenge of Blue Finance," GIB Asset Management," London
[120] Yoshioka N, Wu H, Huang M and Tanaka H, "Proposing Regulatory Driven Blue Finance Mechanism for Blue Economy Development," ADBI Paper, Bangkok

fluctuating markets, the COIVD19 pandemic and other factors, stakeholders seek specific certainty from regulators/policymakers before committing.[121] They need a reliable presence of finance, investment, insurance and other sources.

Aside from establishing and ensuring the resilience/availability of this supporting series of capable global blue economy observation systems, the uncertainty over jurisdiction, the protection, valuation and rewilding/acting against threats on the marine areas beyond national jurisdiction, needs to be further identified via stakeholder input and secured by the ongoing revisions to the 2021 High Seas Treaty. UNEPFI, the World Ocean Council and others have all indicated the need for centralised principles governing investment (i.e. the UNEPFI Sustainable Blue Finance Principles), policies, research, investment facilities and processes but these still remain works in progress. Specific risks have to be targeted, for the long-term survival of species. Incidentally, not investing in addressing these risks may cause significant loss of current and potential asset values, functions and adverse externality impact costs from an investment perspective, given the significant opportunity costs incurred. One 2013 presentation indicated overfishing can exceed $50,000,000,000 per year; coastal hypoxia/eutrophication or $200 - $790,000,000,000 per year; Invasive Aquatic Species $100,000,000,000 per year; ocean acidification $1.2 trillion/year, aside from even higher losses due to coastal habitat loss, marine pollution, oil spills and climate change.[122] Many proposed forms of marine, conservation or blue economy finance seldom link to the specific SDG indicators or national progress monitoring or funding requirements. This also extends to ocean accounts, statistics and scientific information systems. Often, where such information exists it is too aggregated, and lacking in specific, downscaled localised relevance to the indicators actually proposed, to determine the efficaciousness of being part of the blue economy or not. Aside from finance, knowledge, training and capacity building also are advised to need refinement. All market, debt and investment distorting market measures and investments that are not in sustainable ocean related activities should re-look at this and consider restructuring

The High Level Panel for a Sustainable Ocean Economy, in advising 14 global political leaders on the transition to ocean finance, cautioned of the high investment gap that remains; given that less than 1% (US $13,000,000,000) of the total value of the ocean has been invested in sustainable projects.[123] To encourage the transition it demands an overarching framework for specifically blue themed investment principles that are commonly understood and accepted. The UNEPFI Sustainable Blue Economy Finance Principles is frequently cited as among the most viable of candidates, formed in cooperation with the European Commission, the World Wide Fund for Nature (WWF), the European Investment Bank and the Prince of Wales' International Sustainability Unit. These principles can serve as a baseline of comparison via certain indicators being achieved. Conjointly marine/coastal ecosystem services need to be assigned fair market prices and incorporated into asset, service and economic values; to be realistically paid for. Equity and social aspects are also of potential value to incorporate. The source argues for the financial system and regulatory frameworks to adjust to blue finance themed areas and complex risks. The other concerning factor is that any national attempts to establish these indicators, trend lines and financial/regulatory systems will fail unless the truly transboundary nature of the ocean is explored, as these risks, their governance and the information available, along with active enforcement and monitoring, may not just depend on the country or ocean/marine space where the investment is notionally committed. It may further depend upon neighbouring countries, companies, communities or individuals. These mutual legal and other cooperative partnerships may become critical.

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[121] Sumaila U, Walsh M, Hoareau K, et. al., 2021, "Financing A Sustainable Ocean Economy, " *Nature Communications,"* viewed 6 September 2021, https://www.academia.edu

[122] Hudson A, 2013, "Catalysing Ocean Finance: Transforming Markets to Restore and Protect the Global Ocean," UNDP Presentation," Bangkok

[123] High Level Panel for a Sustainable Ocean Economy, 2020, "Ocean Finance: Financing the Transition Towards a Sustainable Ocean Economy," London

Various instruments such as oceans/blue bonds still have comparatively few practical examples to learn from and sources providing guidance on their structuring and implementation that are sufficiently accessible to a non- or less technical audience. As previously stated, there is the need for sound valuations of natural capital; capturing and quantifying where possible, all ecological, economic and social values to marine resources; the need to protect biodiversity and avoid species extinction. These forms of blue/ocean finance often require significant marketing appeal work. Future challenges of these investments will include trying to restructure financing sources and specific projects to be not only technically, commercially, ecologically and socially feasible, but also to address stakeholder priorities, ecosystem needs and investor/government interests simultaneously and effectively in the long term. Many of the most needed solutions may be challenging to implement in the most remote areas and may have challenges, not just to short term travel restrictions under the COVID19 pandemic, but also due to their remote locations and related implementation/monitoring.[124] As subsequent sections will affirm, stakeholders will have to ascertain what is truly "sustainable" when it comes to the blue/oceans economy; which is the most effective/appropriate series of tools and instruments; how do you measure impact, success and failure and how do you sufficiently motivate people to invest and support this?

There are various definitions for green/sustainable finance, which contain the basic elements needed to be connected to blue economy finance. For example, the Asian Development Bank defines it as:

> "*Green finance targets (i) a reduction in greenhouse gases and/or improved climate resilience; and (ii) improved environmental objectives such as air and water quality, ecosystems and biodiversity, and resource use efficiency."*[125]

If targets and methods fail to adequately measure these, at a minimum then they can be deemed unsuitable. Sustainable finance can derive from many basic sources such as venture philanthropy; program or mission-related investment; development, ethical, socially responsible or impact based finance; but primarily aims to incorporate elements of environmental, and social governance criteria (ESG), extending beyond just financial or economic impact based performance.[126] Green finance focuses on greenhouse gas, pollution removal and other negative environmental externality cost-reducing processes, in contrast to blue finance/bonds, which, although lacking a universal consensus in literature, primarily link to supporting the blue economy with marine/ocean/coastal/waterway and source related environment and economic activities. One core risk to avoid for these bonds is that of "greenwashing" - of professing to have ESG or sustainability criteria but providing insufficient information as to how those targets are ascertained or accomplished or what precisely those investments might be. The International Capital Markets Association (ICM), however, advises that to establish green bonds requires these ESG/green criteria to be truly factored into decisions relating to the use of proceeds and their management, the criteria for project evaluation and selection and their monitoring framework, affirmed by external reviews.[127] A truly convincing green or blue bond issuer will not only have clearly visible identification of any potential risks that may arise, publicly to forewarn investors transparently, but also options to propose any related mitigation measures. Many will publicly align themselves to various ESG/social/environmental or other standards such as the UNEPFI or ICMA Green/Social Bond Principles.

[124] Organisation for Economic Cooperation and Development, 2020, "OECD Work in Support of a Sustainable Ocean," OECD Report, Paris
[125] Mehta A and Andrich M, 2021, "The Asian Development Bank's Green Finance Initiatives and Their Impacts," Asian Development Bank, Manilla
[126] Nicholls A, 2021, "Sustainable Finance: A Primer and Recent Developments."
[127] International Capital Markets Association, 2021, "Green Bonds Principles: Voluntary Process Guidance on Issuing Green Bonds," ICMA Paper, London

Although not specifically blue economy themed, the Caribbean and other stakeholders can also learn from the examples of Sustainable Development Bonds and their frameworks. The International Development Association and World Banks mirror similar processes, in that both require potential investments to be screened for true economic, social and environmental sustainability through the use of proceeds, the process for evaluation and selection of eligible operations, the management of proceeds and reporting processes.[128] . Both provide specific lists of goods, services and areas such as the military, alcohol or environmentally hazardous goods, that they avoid investing in. Throughout a project's entire lifespan; it identifies the need to ensure selected investment projects adhere to 10 basic Environmental and Social Standards such as those outlined below. If these investments attain or exceed their targets; this may provide a bonus above the baseline interest rate paid. Equally, subpar progress could result in a lower or even negative rate of return.

1. Assessment and management of environmental and social risks and impacts
2. Labour and working conditions
3. Resource efficiency and pollution prevention and management
4. Community health and safety
5. Land acquisition, restrictions on land use and involuntary resettlement
6. Biodiversity conservation and sustainable management of living natural resources
7. Indigenous peoples/Sub-Saharan African historically underserved traditional local communities
8. Cultural heritage
9. Financial intermediaries
10. Stakeholder engagement and information disclosure.

The World Bank is among many organisations that are basing their experiences of nature-based financing and investments, as possessing international best practices for the blue/ocean economy and conservation.[129] To attract investment it also calls for more accurate biodiversity and marine data being provided in regards to pinpointing ecosystem contributions and values. It identifies the need to restructure existing financial systems to be more familiar with and motivated with these solutions; the need for a Taskforce on Nature-related Financial Disclosures (TNFD); restructured capital to become available as examples and the formation of professional investor networks to mobilise capital, support and establish best practises/lobby for suitable change. It also identified the challenges of needing to upscale investment impact away from localised projects. It further concedes the need for standardised definitions and classifying investments and impacts related to climate and nature-based solutions, including ecosystems and biodiversity, to simplify comparisons for investors. This requires transparent disclosure, adequate local solvency and capital regulations apply to these investments, with adequate supervisory and regulatory risk assessments. Once risks are ascertained, their related possible impact costs are conveyed.

The World Wildlife Fund advises not only conducting a mere socioecological and environmental or natural capital approach, but also incorporating a "value at risk" (VaR) analysis for investors to truly gauge and understand their respective levels of risk or the volatility of underlying fisheries, aquaculture and other related risks.[130] It provided a Baltic fisheries assessment model and a second ports and shipping case study to assess this VaR risk, or difference over time in discounted cash flows between company dividends or revenue under climate change versus a business as usual scenario. This calculated high risk prospects the total VaR for ports over 85 years is up to 2.21%, or

[128] International Development Association, 2021, "Sustainable Development Bond Framework," London
World Bank and UNCTAD, "Tools for Screening Prospective Investors," viewed 7 September 2021
[129] World Bank, 2020, "Mobilising Private Finance For Nature," World Bank Report, Washington.
[130] World Wildlife Fund, 2020, "Value At Risk in the Blue Economy," WWF London

€19,900,000 and for fisheries over 15 years is 73%, or €1,320,000,000. The NGO basically recommends that one approach to blue economy finance would be to treat it similarly to a VaR investment fluctuating model, but consider a system modelling approach to include ocean and climate/environmental drivers. For example, a systems model for ports revenue and assets risks would consider potential changes in assets, asset values, damage impact costs, related changes in freight transported and loss of revenue. For fisheries a VaR model example is provided in Figure 2.4.6.1; focusing on key indicators that could be included such as birth rate; death rates; replacement rates and associated risks/drivers; changes in fishing species populations; the rate of which fish are removed from bycatch loss and fisheries/aquaculture/tourism, fish landings - commercial and non-commercial with associated values and types; along with associated changes in supply chain assets and revenue values. It also seeks specific quantifiable information relating to threats; interspecies interactions and consequences of coastal habitat loss for spawning.

Another tool is an ecological risk assessment.[131] This can extend to measures that consider social factors and indigenous/cultural impacts. Simultaneously, the problems of avoiding additional pressures on land or marine ecosystems need to be addressed, ensuring the effectiveness of enforceability, with sufficient resources for implementing and monitoring, also needing to be incorporated as priorities. Nature based solutions such as mangrove conservation can therefore be linked to specific locations, where changes can be easily monitored as performance outputs, provided local governments, communities and financial systems are integrated. This can be eventually in turn linked to the scale of potential investments actually needed to overcome existing funding gaps and conservation/ecosystem restoration needs. Earth Security Group estimated the need for US $11,000,000,000 over a 20-year period to capture 380 million tonnes of CO_2.[132] There are clear benefits to utilising physical ecological indicators as these can identify swiftly if ecosystems and overall health are responding to conservation; if risks are being successfully managed and it, they are yielding to increased biomass, harvest, income and employment. For example, Earth Security Group advises on value or output metrics such as the value of carbon offsets generated; the tons of carbon sequestered annually; the CO_2 emissions avoided; reduced insurance, maintenance and infrastructure costs due to lower risks. These risks can in turn become indicators to ascertain whether or not an investment intervention has led to a desirable, indifferent or negative outcome including ascertaining the increased probability of an ecological, legal, economic, physical or sociocultural risk occurring, or the frequency of species' death and injury; changes in risks to ecosystems; volumes of pollution; IUU fisheries incidents and others; number of lawsuits; number of convictions and outcomes. Changes in tax revenue, exports, ocean health, emotional health, tourism numbers and others can also be certain indices, although Sections 2.6 and 3 will develop this further. Other indices include the increased subsequent financial tourist aesthetic, real estate or other land values following investments; the increase in sustainable production premium, tourism, fisheries, aquaculture and blue biotechnology revenue; or reduced costs from community conflicts/eventual reduced costs in dealing with environmental remediation or incidents.

For climate finance, a number of useful guidelines and documents can also be applied to those seeking to develop a model for the blue economy investment process based on proven, best practices incorporating climate change resilience, as an additional advantage. However, these tools and principles need to consider the various specific characteristics and needs of the respective blue economy, in modifying them, as further sections will convey. The Heinrich Boll Sifting Foundation further indicates that climate finance must be directly linked to undertaking compliance with the 2015 Paris Agreement on Climate Change with specific party obligations committed towards rapid

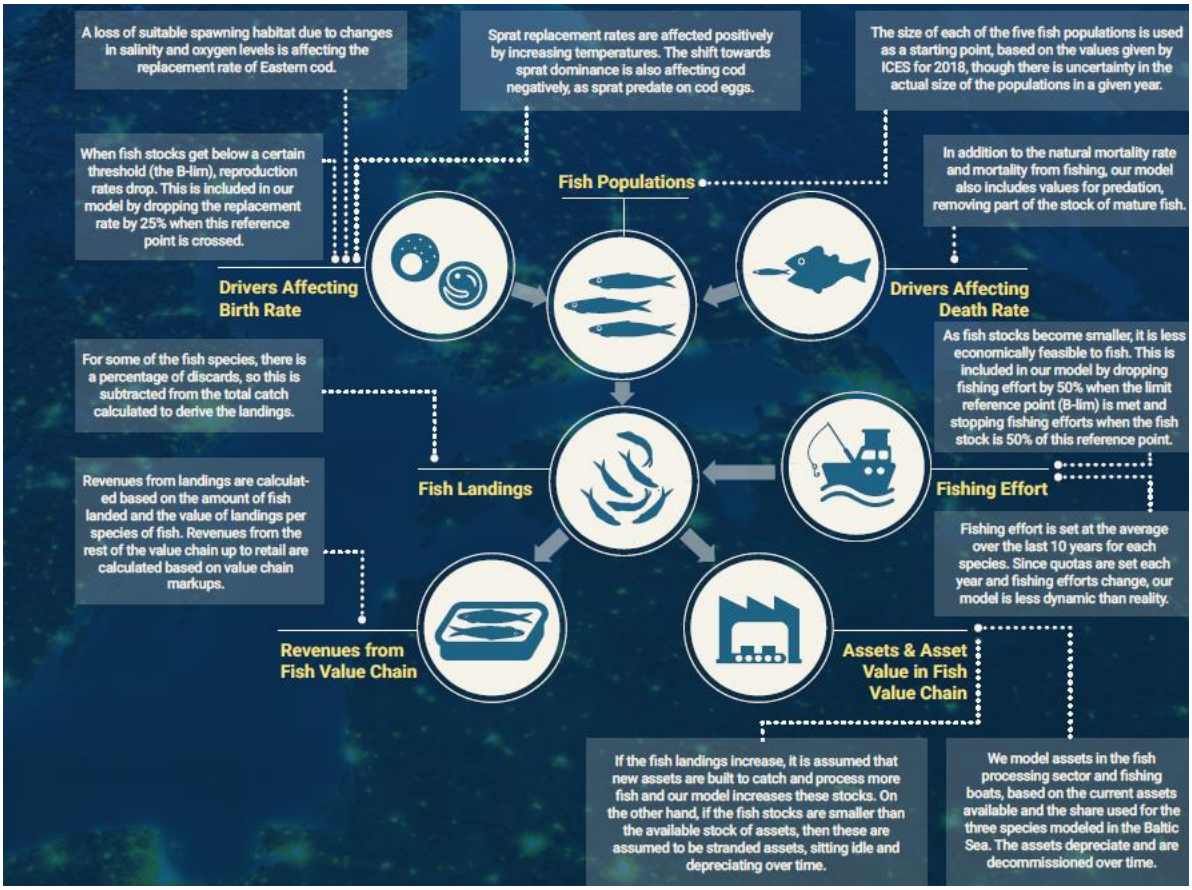
[131] Hodgson E, Essington T, Samhouri J, et. al., "*Integrated Risk Assessment for the Blue Economy,"* viewed 7 September 2021, https://www.fmars.org.

[132] Earth Security," 2020, "Financing Earth's Assets: The Case for Mangroves as a Nature Based Solution," Earth Security, London.

decarbonisation and a 1.5 degree Celsius maximum by 2050.[133] Therefore any anticipated investments and methods should be based on minimising future risks and emissions increases through a risk averse, cautious approach, embracing the Precautionary and Polluter Pays Principles. It needs to be suitably flexible as risks change. It needs to encourage commitment, ensuring sufficient transparency and accountability in the indicators, the methods employed, screening criteria, monitoring and evaluation, to avoid the exercising of moral hazard, so stakeholders have firm economic and reputational pressures to achieve these indicators as performance targets. Additionally, stakeholders desire certainty, so it can be beneficial to ensure not just that any related blue economy or climate financing approaches or incentives are sustainable, but also that ultimately, they are predictable and reliably secured for a set time period. It is also advised that funds consider aims to improve gender equality; improve direct access for the poor or those marginalised from the financial sector, and enhance overall resilience of human, economic and environmental/ocean/climate systems to disruption risks.

[133] Schalatek L, and Bird N, 2020, "The Principles and Criteria of Public Climate Finance: A Normative Framework," Climate Funds Update, Henrich Boll Siftung Report Washington

Figure 2.4.6: WWF Systems Model for VaR Risks in Fisheries and Blue Economy Investments



Source: WWF 2020.

The Intergovernmental Panel on Climate Change cautioned that any finance intended to resolve climate change, ocean threats or other perils has to be mindful of certain challenges and concerns[134]. For example, it proposed the lack of certainty and private sector interest over carbon markets, pricing, demand and incentives (applicable to blue carbon). Without paying attention to the actual need to investigate existing financial and government systems, any new instruments could cause additional pressures or prove to be ineffective, with certain coordinating, governance, policy and structural changes potentially necessary. Budgets, credit, aid, contingency reserves, insurance levels, investment flows, trade patterns, inflation and interest rates may also be affected or need examining. Emissions reduction targets alone are insufficient, without more consensus as to what, meaningful impact and decisions may be. Distortionary market mechanisms such as fossil fuel or polluting subsidies may also need to be critically examined and either removed or heavily restricted and penalised. As many traditional financing sources remain unfamiliar with the blue economy/ocean sector; clear ascertaining of specific investment risks needs to be calibrated. Political, social, economic, technical, ecological, access to capital and other risks along with the rate of return on investment/market liquidity will all prove enticing. Various organisations may therefore need to reduce these market risks for the blue economy, as previously for climate change/green economy. The Green Climate Fund, surveyed in Section 3, has its own series of investment criteria, conceding that there may be instances required in reconfiguring these to emerging

[134] Intergovernmental Panel on Climate Change, 2014, "IPCC Report "Cross Cutting Investment and Finance Issues."

nation/SIDS conditions. Providing these indicators can assist the 3 countries contained within the scope of this consultancy to access climate finance as an alternative to the blue economy, if related elements are incorporated as part of this framework. These include:[135]

- **Mitigation Impact indicator**: project lifetime emission reductions (in tonnes of CO_2 equivalent). Project proposals should describe the expected reductions in emissions resulting from the GCF intervention.
- **Adaptation Impact Indicator:** Project proposals should describe expected change in loss of lives, value of physical assets, livelihoods, and/or environmental or social losses due to the impact of extreme climate-related disasters and climate change in the geographical area and number of direct and indirect project beneficiaries.
- **Investment Criteria Indicators/Paradigm Shift Potential:** The vision for paradigm shift should outline how the proposed project can catalyse impact beyond a one-off investment. This vision for longer-term change should be accompanied by a robust and convincing theory of change for replication and/or scaling up of the project results, including the long-term sustainability of the results, or by a description of the most binding constraint(s) to change and how it/they will be addressed through the project.
- **Sustainable Development and SDG Attainment Potential.**
  (a)Co-benefits Indicator: (a) Economic co-benefits, such as the creation of jobs, poverty alleviation and enhancement of income and financial inclusion, especially among women;
  (b) Social Co-Benefits, such as improvements in health and safety, access to education, cultural preservation, improved access to energy, social inclusion, improved sanitation facilities and improved quality of and access to other public utilities such as water supply;
  (c) Environmental co-benefits, including increased air, water and soils quality, conservation and biodiversity;
  (d) Gender empowerment co-benefits outlining how the project will reduce gender inequalities.
- **Needs of the recipient.**
- **Mitigation and adaptation indicator:** barriers to climate-related finance. Project proposals should describe the country's financial, economic, social and institutional needs and the barriers to accessing domestic (public), private and other international sources of climate related finance. The proposal should outline how the proposed intervention will address the identified needs and barriers.
- **Alignment** with nationally determined contributions (NDCs), relevant national plans indicator, and/or enabling policy and institutional frameworks: Project proposals should clearly describe how proposed activities align with the country's NDC and other relevant national plans, and how the funding proposal will help to achieve the NDC or these national goals and climate change policies. This need to consider the degree to which the project is supported by a country's enabling policy and institutional framework or includes policy or institutional changes.
- **Explanation of engagement** with relevant stakeholders, including national designated authorities' indicator.
- **Efficiency and effectiveness** of the project.

A 2021 UNDP presentation on upscaling vertical fund financed projects included the need for projects to align to a post-COVID19 recovery.[136] It favours government and industry measures to aid energy efficiency and renewable energy uptake; to connect more entrepreneurs, small and medium enterprises to funding; to influence credit, policy and tax/subsidies being changed. Although a number of metrics exist to measure performance, these have yet to be applied in detail or standardised in achieving consensus in existing research for either climate finance or the blue economy, providing necessary guidance. Other constraints have been noted in seeking to ensure that investment flows can be directed to where they are most critical or can deliver the greatest impact. This extends to moving beyond pilot projects and small-scale developments to those that can enact broader meaningful progress in approaching the

[135] Green Climate Fund, 2018, "Gender Action Plan: Climate Resilient Water Sector in Grenada," Green Climate Fund, St George.
[136] UNDP 2021, "UN Measures to Green the Post Pandemic Recovery in Energy," IBC Environment and Climate Change, viewed 7 September 2021, https://www.undp.org

considerable ocean, climate, environmental and human problems that exist. Scaling up is one aspect - ensuring that project is ultimately long term self-sufficient and self-financing proves to be another critical distinction of truly successful interventions and projects. One source advocates the need to align vertical funds, and other sources advise to be especially mindful of sound governance practises based on these principles, but also to be held accountable to by civil society and other stakeholders, so they can be included.[137] Vertical funds can also simplify the complex bureaucracy that encumbers many of the traditionally financially excluded from direct participation and accessing the funds needed, such as vulnerable individuals or communities, or can channel it to those such as academics, research institutions and governments that may have greater technical expertise then traditional funding mechanisms to screen, identify and monitor effective blue, green, circular economy or climate finance related proposals.

To articulate tools that screen potential eligible investments and investors, the World Bank undertakes 3 basic stages for any proposal or investment.[138] These include concept screening as the first stage, to investigate that it fits within the World Bank mandate, and the investor and project are both credible. Initially it is considered paramount that there is actually an interest and initial enthusiasm or support not just as a market appetite for potential investors, but also that the intended recipients or beneficiaries - such as a local community/marine area etc - will be favourably receptive to the concept. This is crucial to avoid any major conflicts or failures, even if such efforts may require significant efforts at outreach, awareness, understanding, networking and various forms of support. Second is undertaking financial and technical screening of the related business plan. Fiscal prudence can be determined at a minimum through financial statements, a cash flow or sensitivity analysis and if any financiers have expressed any interest in being willing to commit. Any current or intended debts, any cash reserves, assets or contingency measures, can also indicate possible solvency and prudence or excess risk. This specifically requires inclusion of an environmental management plan and an environmental/social risk and impact assessment for sustainability, climate, green and blue themed funding as a minimum stipulated requirement. It also investigates to consider if there are any traditional land, coastal or marine rights or traditional ownership, customs and usages that may have to be either accommodated, or factored in or suitably compensated for. Analysis will also be necessary to see if the proposal is appropriate for any investment incentives or benefits. Third is to ensure it complies legally, with any bank's social, economic, governance or environmental/other criteria. The project or proposal investment then proceeds through various stages of implementation and execution. Once operating, the project will be susceptible to further monitoring and evaluation to gauge the extent to which these and other requirements or indicators have been satisfied and if any changes are necessary. Socially, stakeholders can also monitor the extent to which small, medium and historically marginalised stakeholders such as the disabled, youth and women are included or the extent to which local suppliers and their supply chains will benefit, in contrast to foreign companies.

The Commonwealth Climate Finance Access Hub has also promoted the concept of debt for nature swaps, where part of the debt is cancelled in exchange for certain concessions such as a legal commitment to protect nature, such as in the Seychelles blue bond and in Belize experiences.[139] More sustainable mechanisms would have, however, to be designed if such a similar model were followed in Barbados, Grenada and St Vincent and the Grenadines in cooperation with the debt holders and their agents/investors, which requires a substantial commitment to initiate and continue. This restructuring would have to lead to promising outcomes in sustainable development, climate resilience and

[137] Gartner D and Kharas H, 2017, "Scaling Up Impact: Vertical Funds and Innovative Governance," Chapter in: *Getting to Scale: How to Bring Development Solutions to Millions of Poor People, "Laurence Chandy, Akio Hosono, Homi Kharas, and Johannes Linn, Editors,"* viewed 7 September 2021, https://www.academia.edu

[138] World Bank and UNCTAD, 2018, "Tools for Screening Prospective Investors," viewed 7 September 2021

[139] Commonwealth Climate Finance Access Hub, 2021, "Debt For Climate Swap: Innovative Financial Instruments for Public Debt Management in the Caribbean, Commonwealth Secretariat, London

environmental protection as clear outcomes. The source referenced Belize as a case study where USAID loans of US$ 8,500,000 were forgiven in exchange for the government pledging to safeguard the conservation of over 300,000 acres of rainforest, provision of 48 grants for protected areas management, and four endowment funds to ensure conservation remains sustainably financed. A third party such as a multilateral funding institution can receive the remainder debt portion as a potential ultimate guarantor.

Climate Policy Initiative also affirm that climate finance is under increasing pressure to offer value for money and ensure that investments are actually allocated efficiently (in not incurring wasteful costs) and productively (in generating among the highest returns).[140] Global climate finance flows reached US $546,000,000,000. In 2018, of which $316,000,000 derived from structuring and restructuring market related debt via project level and balance sheet, as the most favoured market mechanism. Only $29,000,000,000 proved to be grants. 93% went to mitigation not adaptation. 76% was channelled to investments sourced within the same county location it originated from. Whether for the blue economy or climate finance, this Report considers it especially useful to simplify access to the stakeholders who need it most by identifying the actual sources, hence provided throughout this Report and Appendices. For climate finance, Act Alliance identified many significant stakeholders, along with their background funding sources; sector focus, funding conditions, application process and screening criteria along with relevance.[141] . The Commonwealth Government have established their own Blue Economy/Ocean Financing database, as has this author in previous consultancy, the Funding the Oceans website and a few others such as the Ocean Opportunities Lab TOOL initiative, although this applies to entrepreneurs. (Dyer 2020).[142] None, however, provide the same basic, more user-friendly details as the Act Alliance.

To investigate the potential implications of a blue economy financing facility for East Asia's seas, one research paper advised the need not just to consider policies, risks and resources needed, but also a Strategic Action Programme framework with tangible outcomes that ensures actual liability/accountability and transparency. [143] It specifically advises the need to leverage and cultivate strategic partnerships with core local communities, experienced NGOs and multilateral development funding institutions along with researchers/consultants. The continuous need for periodic monitoring is repeated throughout. It also favours ensuring compensation/success fees so that certain stakeholders feel even more motivated to make this financing facility or tool function excellently.

In proposing a sustainable green financing facility for a post-COVID19 recovery, the Asian Development Bank indicates 4 criticalities to assess meaningful impacts - job creation, improvement in natural capital, resilience against climate change and catalytic capital criticality, including enticing further capital flows and ensuring stakeholder priorities are resolved[144]. Forming a green, climate or blue economy investment facility can encourage greater flows of finance in a rapid timeframe, managed more professionally, undertaking investments/credit with greater security from collateral and experience, able to more accurately ascertain risks, improving efficiency. Unlike many blue bonds, the principles of myriad green and climate related bonds indicates this process does effectively work to deliver and surpass various

[140] Buchner B, Clark A, Falconer A, et. al., 2019, "Global Landscape of Climate Finance," Climate Policy Initiative, New York

[141] Act Alliance, 2018, "A Resource Guide to Climate Finance: An Orientation to Sources of Funds for Climate Change Programmes and Action, viewed 7 September 2021, https://www.actalliance.org.

[142] Dyer J, 2020 (a), "Examining How Stakeholders Can Access A Sustainable, Climate Resilient Economy and Generation: An Update on Green and Climate Economy Finance Sources, Developments and Investment Trends, Durban.

[143] Whisnant R and Veerlie V, 2019, "Investing in the New Blue Economy: The Changing Role of International Development Organisations in Catalysing Private Sector Investment in Support of Regional Strategic Action Programmes," *Journal of Ocean and Coastal Economics,* viewed 6 September 2021, https://www.researchgate.net.

[144] Asian Development Bank, 2020, "Green Finance Strategies for Post-COVID-19 Economic Recovery in Southeast Asia. Greening Recoveries for People and Planet," Bangkok.

performance indicators, with reasonable market demand and profitable rates of return on investment. For example one 2021 Asian Development Bank study testified to Asian firms that issue green bonds improved their environmental performance by an average 17% after 1 year and by 30% after 2 years on average, as measured by corporate environmental ratings.[145] The source indicated that just over 30% of global finance or $30 trillion has at least tokenistic commitment to sustainability and a form of ESG framework, although some are far more effective in their impacts then others. This however, remains conditional upon not just market forces of supply and demand, but environment and climate-related, physical, legal, technological, policy and stakeholder reputational risks being accurately factored in, along with calculating and monitoring the true underlying system fragility - resilience and vulnerability to risks.

2.5: The Caribbean, Barbados, Grenada and St Vincent and the Grenadines, Existing and Future Financial Landscape

In order to analyse the most effective, sustainable blue economy future for the three countries of Barbados, Grenada, St Vincent and the Grenadines and a suitable investment/financing framework, not only can it benefit stakeholders to understand global and regional funding sources, but also to identify the sources of existing funding; their limitations and possible recommendation to help ensure they are fully aware and adapted to this opportunity. Those stakeholders in Barbados's financial sector are summarised in Table 2.5.1. Those in Grenada are summarised in Table 2.5.2. Those in St Vincent and the Grenadines are in Table 2.5.3. Stakeholders can potentially access traditional finance from a range of sources including representatives from regional and local central banks, public based development banks/financing institutions, public and private commercial and insurance firms, foreign governments, regional organisations and aid/conservation agencies. The financial sector across the Eastern Caribbean and these three nations is generally conservative and risk averse, with limited awareness or interest apparent. These organisations, irrespective of location, are mostly traditional in their lending and investment criteria referring to liquidity and solvency; existing assets and potential revenue and cashflow; costs involved and insurance premiums which are based on traditional risks and precautions. Yet many of them could realign their portfolios, investment, credit, loans and financing strategy to divest away from economic sectors that actively contribute towards damaging the marine environment and ignore sustainability criteria or ESG frameworks. They could launch specific credit cards and other policies to favour supporting marine conservation initiatives, blue bonds and sustainable ocean orientated initiatives. Many of their investment portfolios and pension/sovereign wealth funds look to overseas US or European markets towards growing returns, rather than in local investment/infrastructure priorities and blue economy requirements. So far analysis reveals limited evidence that any locally based, financial or insurance sector institution is actively considering local and international sustainability, climate change or blue economy themed screening criteria, impact investing or any related criteria as indicated in this report. This will be ascertained further as stakeholder engagement continues.

[145] Asian Development Bank, 2021, "Financing a Green and Inclusive Recovery," Asian Development Outlook Theme Chapter, Manilla.

Table 2.5.1.: Barbados Investment and Finance Themed Stakeholders

Barbados	
Central Banks	1) Central Bank Barbados
Development Bank	1) Caribbean Development Bank
Public and Private Financial Institutions	1) Caribbean Financial Services Corporation (CFSC); 2) Republic Bank (Barbados) Ltd. 3) CIBC First Caribbean International Bank (Barbados)Limited 4) Axcel Finance Barbados, 5) First Citizens (Barbados) Bank; 6) The Bank of Nova Scotia 7) RBC Royal Bank (Barbados) Limited 8) Ascendancy Finance (Barbados) Limited -focus on mortgages 9) Capita Financial Services Inc. 10) Citicorp Merchant Bank Limited 11) Consolidated Finance Company Ltd. 12) DMG Trust Corporation 13) RF Merchant Bank &Trust (Barbados) Limited; 14) Signia Financial Group Inc.; 15: Fortress Finance Management;
Insurance Companies	1) Ablan Insurance Corporation 2) Anahita Insurance Corporation 3) Beach Reinsurance Corp. 4) Cameco Insurance Services Inc 5) Chancery Reinsurance Limited 6) Eldorado Gold Insurance 7) Horizon Insurance Company. Ltd 8) Pacific Life Reinsurance (Barbados) 9) Royal National Insurance Company Ltd
Funds and investors (applies to all countries)	1) U.S. Agency for International Development (USAID) ; 2) The Nature Conservancy (TNC) 3) Caribbean Biodiversity Fund; 4) Climate Investment Funds 5) Green Climate Fund (GCF), Global Environment Facility (GEF) 6) Environmental Trust fund
Regulators, Stock Exchange	1) Barbados Stock Exchange (BSE) 2) Financial Services Commission (FSC)
International Cooperation Entities (applies to all countries)	1) GIZ 2) Caribbean Development and Cooperation Committee (CDCC) 3) World Bank Group 4) Inter-American Development (IADB) 5) IADB Lab 6) IADB Invest 7) Canadian International Development Agency (CIDA) 8) Norwegian Agency for Development Cooperation (NORAD) 9) Swedish International Development Cooperation Agency (SIDA) 10) Spanish Agency for International Development Cooperation (AECID) 11) Agence Française de Développement (AFD) 12) Foreign, Commonwealth & Development Office (FCD)

	13) Development Bank of Latin America, CAF
Others Stakeholders (applies to all countries)	1) Organisation of Eastern Caribbean States 2) The Caribbean Community – CARICOM 3) Caribbean Challenge Initiative 4) Caribbean Biodiversity Fund 5) The Commonwealth Secretariat
Others Stakeholders (applies to all countries)	6) Lighthouse Foundation - Foundation for the Seas and Oceans 7) World Wildlife Fund (WWF) 8) Community of Latin American and Caribbean States- CELAC 9) Barbados Environmental Conservation Trust

Source: This Study 2021; Updated from UNEP Project.

Table 2.5.2: Grenada Traditional Finance and Insurance Sector Stakeholders

Grenada	
Central Banks	1) Eastern Caribbean Central Bank
Development Bank	1) Grenada Development Bank
Public and Private Financial Institutions	1) Republic Bank (Grenada) Ltd; 2) CIBC First Caribbean International Bank; 3) RBTT Bank Grenada Limited -subsidiary of ACB Grenada Bank Ltd., 4) Axcel Finance (Grenada) Ltd.; 5) Grenada Co-operative Bank Ltd 6) Grenada Co-Op Bank 7) Communal Co-operative Credit Union; 8) GUT Credit Union; 9) River Sallee Co-operative Credit Union; 11) Ariza Credit Union;
Insurance companies	1) ABC Insurance House Inc 2) American Life Insurance Co. 3) Caribbean General Insurance Ltd 4) Grenadian General Insurance Co. Ltd; 5) National Insurance Scheme Grenada;
Regulators, Stock Exchange	1] Eastern Caribbean Securities Exchange 2] Grenada Authority for the Regulation of Financial Institutions (GARFIN)

Source: This Study 2021, Updated from UNEP Project.

Table 2.5.3: St Vincent and the Grenadines Financial and Insurance Sector Stakeholders

St. Vincent and the Grenadines	
Central Banks	1) Eastern Caribbean Central Bank;
Development Bank	1) St. Vincent and the Grenadines Development Bank
Public and Private Financial Institutions**	1) Republic Bank (EC) Limited 2) CIBC First Caribbean International Bank (SVG) Ltd;
	3) Bank of St Vincent and the Grenadines Ltd 4) RBTT Bank Caribbean Ltd 5) St Vincent Co-operative Bank 6) First St Vincent Bank Ltd; 7) National Commercial Bank -closed 8) Bank of Nova Scotia **International Banks** 1) Exness Bank Ltd; info@exnessbank.com 2) RBC Royal Bank Holdings (EC) Limited 3) MPB Bank Ltd;
Investment Fund/Credit Unions	Auctus Fun Ltd. **Credit Unions** 1) General Employees Cooperative Credit Union; 2) Kingstown Cooperative Credit Union; 3) SVG Cooperative League; 4) St. Vincent Building & Loan Association
Some Insurance companies*	1) Caribbean Alliance Insurance Co. Ltd 2) Massy United Insurance Ltd. 3) CUNA Caribbean Insurance OECS Ltd 4) Demerara Mutual Life Assurance Society 5) GK Insurance Eastern Caribbean Ltd. 6) Scotia Insurance Eastern Caribbean Limited
Funds and investors	1) St. Vincent & The Grenadines Environment Fund; 2) Sustainable Grenadines Inc. (SusGren) (ONG); 3) St. Vincent and the Grenadines Conservation Fund (SVGCF).
Regulators, Stock Exchange	1) Financial Services Authority; 2) Eastern Caribbean Securities Exchange

Source: This Study 2021, Updated from UNEP Project.

As will be seen in Section 2.5.2's stakeholder consultations, potential commercial sector funding has yet to provide support and incentives for emerging ocean health, social and ecological sustainability. Nor for emerging risks such as climate change vulnerability and resilience and traditional fisheries. Many small and medium scale enterprises and entrepreneurs are seen as riskier from a credit scoring perspective. Access to finance, credit and insurance remains an ongoing problem. Although findings from a UNEPFI consultancy on engaging with the financial sector in relation to the blue economy have not yet been made available to this consultant, trying to persuade this sector of the need to embrace the blue economy, contribute towards a potential framework, guidelines and recommendations proved challenging. Whilst a few of the institutions expressed certain interest in participation, the greater enthusiasm, interest

and drive is more perceptibly noted among those financial institutions aligned to governments, multilateral organisations and aid agencies, rather than those specifically linked to the conventional insurance/banking sector with limited blue economy interest or awareness. This report notes that these stakeholders will need to be really engaged if this framework is to be effective at mobilising private sector capital and reducing external dependency on foreign sources.

2.5.1: Existing Identified Blue Economy and Marine Conservation Projects and Sector/Priorities for Investment

One reason for the notable absence of the flow of blue economy finance and investment flows within the 3 countries in this study can be explained by the recurrent complaint from those stakeholders consulted in this study, and in current research, of the shortage of specific investment ready or designed projects, businesses, marine protected areas and entrepreneurs/individuals with investable ideas. Aside from a consultancy by Dr Jack Dyer for UNDP, other consultancies relating to financial flows (UNEP), the blue economy (UNDP)[146] and FAO were being undertaken, but were still drafts in progress. The 2019 CROPS National Ocean Policies and Framework Output 2 Report, [147] under the Organisation of Eastern Caribbean States, indicated the need to provide loans or budgetary support and other resources to overcome existing policy gaps and resources, that could be identified for future investment projects. The second phase of that consultancy focused more on identifying related funding priority projects as an investment pipeline but due to COVID19 is delayed and still under a draft in revision according to a couple of interviews this consultant conducted. The 2020 IADB Integrated Blue Economy Framework and Roadmap for Barbados[148] identified certain related blue economy potential projects to fund. This identifies the following risks and opportunities in Table 2.5.1.1 without providing more concrete examples of specific locations, investment sizes and potential stakeholders of interest. Its primary focus included an overview of various blue economy sector activities, related policies and gaps, with recommendations to support investment in improving governance and coordination mechanisms rather than individual market related investments.

Table 2.5.1.1. Sector Summaries Related to Policy Issues and Potential Blue Economy Opportunities

Sector	Policy Issues	Blue Economy Opportunities
Water and Wastewater	Water scarcity related to drier warmer conditions, & increased losses from inefficient infrastructure and higher runoffs High Risk to Groundwater Supplies	High risk to groundwater supplies Demand for desalination plants Need to reduce wastewater contaminant loads – increased wastewater treatment and recycling
Solid Waste	Inadequate collection and disposal on land ▯ The Draft Environmental Management Act along with the Draft Integrated Solid Waste Management Legislation, prepared since 1998 and 2004 respectively, have yet to be enacted	Reduced marine impact due to control of plastics and non-biodegradable material at source – increased truck fleet and recycling sub-sector; and ban on single use plastics (alternative products) ▯ Marine clean-up industries – recycled marine plastic and sargassum use

[146] McCue J, 2021 (a), "Rapid Assessment of National Blue Economy Strategies Final Inception Report and Proposed Methodology", UNDP Barbados Report, Bridgetown.
[147] Organisation of Eastern Caribbean States, 2019, Caribbean Regional Oceanscape National Ocean Policies and Framework Output 2 Report, Castries."
[148] InterAmerican Development Bank 2020, IADB Integrated Blue Economy Framework and Roadmap for Barbados," Bridgetown.

Fisheries	High level of importation of seafood Products Climate change Lack of data Habitat degradation and pollution Alien invasive species	Domestic demand exceeds domestic production – room for growth Research and skills training Investment in infrastructure, new technologies or target species Value chain development (processing etc) Mariculture can be developed
Tourism	Concentration of land use and tourism in coastal area – pressure on resources and high levels of waste generation Declining condition of blue assets Lack of monitoring Inconsistent application of environmental safeguards Lack of enforcement and partnerships	Rehabilitation of damaged assets Diversification of the product offerings Alternative livelihoods strategies for vulnerable populations that are completely dependent on the sector
Energy	Heavy reliance on imported fossil fuels for electricity generation and road transportation (fuel)	Offshore oil and gas opportunities Renewables – OTEC, wave and floating wind being considered (nearshore) Waste to energy plants that use fisheries or sargassum waste Sea-water air-conditioning
Maritime Transport	Financial constraints that impact modernization and maintenance of infrastructure Environmental footprint: infrastructure, energy and freshwater demand, waste disposal and risk of spills	Investment in port infrastructure Reforms to support investment, improved efficiencies, data exchange and environmental safeguards

Source: IADB, 2020.

Across these three nations, key priority investment sectors and projects had yet to be confirmed through Parliament, respective government ministers or an Operational National Ocean Coordinating Committee mechanism or equivalent entity by the 1^{oth} November 2021. Aside from potential investment certainty, this complicates any subsequent design of suitable blue economy financial frameworks with screening tools, selection criteria, impact indicators and recommended sources of appropriate investment. However, in a previous UNDP consultancy (McCue 2021)[149], three initial case studies were identified that could provide the basis of the blue bonds currently investigated for Grenada and Barbados, as initial projects needing to secure long-term funding. McCue specifically identified the need for a framework that would consider incorporating an assessment and diagnostics, financing strategy, monitoring and review, governance and coordination but starting with these initial projects. He also identified specific projects with potential cost estimates that could be prioritised in Table 2.5.1.2 below based on specific projects. Yet these and any other subsequent projects remain conditional upon ratification and additional priorities determined by each nation's Blue Economy Implementing Committee, partner UN organisations (PUNOs), external aid donors and the local/international financial, insurance and investment centre.

[149] McCue J, 2021(b), "Rapid Assessment of National Blue Economy Strategies Deliverable 5: Activity 7" UNDP Barbados Report, Bridgetown.

Table 2.5.1.2: Upscaling Investments into Initial Blue Economy Studies Across the Three Countries in this Consultancy

Project Identified	NGO/Implementing Organisation	Investment Sought
Restoring Coral Reefs in Barbados – A Demonstration for the Caribbean and Global Communities	Coral Reef Restoration Alliance Barbados	US $1,500,000
Project 1: Building Resilience For the Communities Within the Georgetown and Montreal Watersheds To the Impacts of Climate Change Through Enhanced Forestry, Water and Sustainable Land Management	St Vincent and the Grenadines Ministry of Agriculture, Rural Transformation, Forestry, Fisheries and Industry – Forestry Department, Agriculture Department and the Central Water and Sewerage Authority (supporting partner).	US $500,000 to 1000,000
Project 2: Upscaling Measures to Combat the Shortage in Increasing Potable Water Production and Storage in Union Island and Mayreau	Union Island Environmental Attackers, St Vincent and the Grenadines	US $2000,000
Project 3: Ashton Marina Regeneration –improving ecosystem regeneration to help combat the impacts of Climate Change on Union Island	Union Island Environmental Attackers	US $500,000
Project 4: Piloting the Necessary Components of a National Coastal Zone Adaptation Strategy (NCZAS) for St Vincent and Grenadines	St Vincent and the Grenadines Sustainable Development Unit	US $1,500,000

Source: Adapted from McCue 2021.

The three initial case studies for blue bonds, and how SDGs were to be addressed, are as follows:

1. **Ashton Lagoon Restoration (Union Island, Saint Vincent and the Grenadines):** A blue economy focused project with specific links to SDG13 (Climate Action), SDG14 (Life under Water), SDG 15 (Life on Land) and SDG 17 (Partnerships for the Goals).

2. **Community-based Conservation of the Barbados Marine Management Area**: A blue economy related project with specific links to SDG1 (food security), SDG 5 (gender and social inclusion), SDG 15 (Life on Land) and SDG 17 (Partnerships for the Goals).

3. **Women's Eco-sustainable Enterprise (Carriacou, Grenada): A** blue economy focused project with specific links to SDG13 (Climate Action), SDG14 (Life under Water), SDG 15 (Life on Land) and SDG 17 (Partnerships for the Goals).

Although not directly mentioned, several other possible investment projects are proposed by this consultant based on observation:

1. Investigation into aquaculture and blue biotechnology potential
2. Investigating offshore wave, wind, current, tidal, salinity gradient and Ocean Thermal Energy Conversion across all three nations. Ocean/Marine renewable energy has recently been identified as having potential
3. Investigating the feasibility of extending ferry links across Caribbean
4. Considering coral reef restoration/other area marine protected area, conservation restoration and coastal recovery e.g. Artificial Reef and mangrove restoration
5. Investigating setting up basic marine education and research - not only to support blue economy courses including finance and entrepreneurship and community courses/vocational colleges addressing sustainable fisheries/aquaculture etc.
6. Investigating blue carbon/biodiversity offsets and markets across all nations
7. Investigating maritime transport and port decarbonisation
8. Investigating cabotage possibilities and any opportunities to develop further local cargo shipping, boatbuilding and repair facilities.

9. Investigate any marina, eco and cruise tourism recovery prospects and local value chain development given the COVID19 recovery pandemic/travel restrictions.
10. Development of local blue economy entrepreneurship and innovation.
11. Investigation into desalination and any water security implications
12. Developing marine exploration, research and innovation, finalising policies related to seabed mining and offshore oil and gas prospects to provide certainty over the extent of their sustainability.
13. Developing the circular economy and investments into recycling/waste management etc to reduce and reprocess sources that can endanger coral reefs and the marine environment
14. Investments into securing sustainable fisheries, linked to the circular economy, local marine management and import substitution such as introducing local seafood into supermarkets and other products.
15. Investigating the potential prospects of sargassum seaweed and associated value adding opportunities.
16. Focusing on campaigns against turtles and dolphin meat being harvested -supporting related NGOs to become tourist and research centres
17. Working with local NGOs to favour decentralised control of marine management funding as an option for leveraging access to alternative funding sources, information and technical expertise and others.

Figures 2.5.1.1-2.5.1.3: Old Hegg Turtle Sanctuary Bequia and Princess Margaret Beach, the Grenadines - Potential for MPAs and Tourism

Source: Jack Dyer, October 2021

There is also a need for any existing projects being contemplated by government and the private sector across the Eastern Caribbean and globally to subscribe to marine conservation protection, climate resilience, the principles of the circular economy and the Section 2.6 proposed new Eastern Caribbean Blue Economy Investment Sector Framework. This would incorporate international best practises such as the UNEPFI Sustainable Blue Economy Finance Principles and others contained within this report. Examples include needing to restructure the following government listed priorities, which can serve as additional investable projects that simultaneously address government priorities and objectives.

2.5.2: Stakeholder Engagement, Experiences and Priorities

Initial stakeholder consultation was undertaken to reach out to 50 potential international blue economy/ocean/climate/other sustainable finance experts and 150 specific Barbados, Grenada, St Vincent and the Grenadines/Caribbean blue economy/general stakeholders. Stakeholder engagement included an initial 9

stakeholders via interviews and surveys, out of a sample poll of 200 stakeholders at time of first submission of the report, extending to 37 total responses and 31 provisionally interested in cooperating.

Schedule of Interviews and Survey Responses

The schedule of interviewees, survey responses and dates are indicated in Table 2.5.2.1. Each interview took an average of one hour, and a further hour to document. The key findings pertinent to funding, criteria and tools are summarised below and in subsequent sections. Subsequently introduction meetings were scheduled with the respective coordinators initial meetings with representatives from each country's blue economy implementing teams. This engagement process is detailed in separate reports

Table 2.5.2.1. Schedule of Interview and Survey Respondents.

No	Organization	Name/Position	Date of interview/survey
1	Individual Economist/PhD student		17 Sept 21
2	Newseas (Aquaculture and Fisheries Impact Investing and Project Perspective)		22 Sept 21
3	World Bank		26 Sept 21
4.	Ocean Rescue Alliance		27 Sept 21
5	A blue economy consultant and activist		28 Sept 21
6	University of West Indies Researcher		28 Sept 21
7	Caribbean Youth Environmental Network		28 Sept 21
8	A blue economy consultant/specialist		29 Sept 21
9	Waitt Institute		29 Sept 21
10	UNEPFI		4 Oct 21
11	Green Climate Fund		6 Oct 21
12	Gaea Conservation Grenada		8 Oct 21
13	Serenity Dive, St Vincent and Grenadines		9 Oct 21
14	Barbados Sailing Association		10 Oct 21
15	Compete Caribbean		11 Oct 21
16	Becht Charitable Trust		12 Oct 21
17	GIZ Marine Funding and Institutional Capacity Building		12 Oct 21
18	Blue Finance representatives		13 Oct 21
19	Schneider Family Office (investors)		13 Oct 21
20	Sustainable Grenadines		13 Oct 21
21	Valerie Capital (impact Investors)		14 Oct 21
22	European Investment Bank		15 Oct 21
23	Barbados Ministry of Maritime Affairs and Blue Economy		13 Oct 21
24	St V and G Ministry of Finance, Economic Planning and IT		survey
25	World Wildlife Fund		19 Oct 21
26	World Bank		19 Oct 21
27	The Nature Conservancy		19 Oct 21
28	Republic Bank Barbados		21 Oct 21
29	St V and G Ministry of Agriculture, Rural Transformation, Forestry and Fisheries		22 Oct 21
30	Investable Oceans		24 Oct 21
31	IUCN Barbados and Eastern Caribbean		25 Oct 21

32	Aquanauts Grenada/Grand Anse Artificial Reef Project		25 Oct 21
33	Canadian High Commission		26 Oct 21
34	UK High Commission		26 Oct 21
35	FAO		26 Oct 21
36	Caribbean Biodiversity Fund		29 Oct 21

A summary of Stakeholder Responses is provided below. Certain stakeholders are named with their consent, otherwise are left anonymous to preserve confidentiality. To start with a quote from an impact investor who seemed interested in the notion of investing in these three countries, but declined a full interview:

> "*One suggestion that I would offer is that these blue economy strategies ought to include actionable components that lead to inward investment and activation of regional financial ecosystems. Without those two pieces, these are economic strategies with another label as opposed to a departure that moves the needle. Some of these strategies have been around for as long as five years, without engagement with private capital markets. There is also an opportunity to do cross regional learning and accelerate progress."*- Gillian Marcelle of Resilient Capital Ventures.

Table 2.5.2.2 indicates the key concerns investors, funding recipients, NGOs and blue economy experts had regarding the funding and investment processes, as experienced and/or observed by them. The concerns have been separated into two broad groups: those reflecting the concerns of organisations seeking funding and those reflecting the concerns of organisations and investors providing funding, or seeking fundable investments. Some respondents fall into both groups – e.g., private or academic consultants, who work both with government departments and large donors, and also assist smaller NGOs and community organisations who seek funding. Also, some Government departments would be both funders of small projects, and seekers of funding for large projects. Hence, for this reason – and the fact that survey and interview results are increasing on a daily basis – numerical analysis of respondents has not been given. The concerns raised relate both to requirements from government – particularly from the investor side, regarding policies, procedures, legislation and priorities for investment – and from the projects themselves.

Table 2.5.2.2. Key Issues Raised in Interviews

Sector	Concerns which needed addressing
Private / NGO	Lack of coordination between funders
	Excessively bureaucratic procedures – particularly for small organizations
	Insufficient focus on marine conservation; species extinction
	Insufficient attention to degradation of mangroves, sea grass, coral reefs
	Insufficient attention to alien invaders, lion fish, sargassum seaweed
	Need to support job creation
	Need to support regeneration of ecosystems
	Risks from pollution
	Risks from climate change
	Excessive coastal development, coastal erosion, coastal/sand mining
	Resource pressure
	Adverse effects of excessive tourism
	Insufficient baseline data in many areas; including blue economy
	Risk-averse funders

	Lack of insurance and risk protection Need regular updates on changing policies, procedures, laws and plans, good communication using multiple channels Risks from Covid and other diseases Hard to get started – funders want a track record Lack of knowledge of small organisations on available funding opportunities Delays in processing applications leads to missed opportunities
Investors / Funders	Need a business-friendly environment Inadequate/inappropriate infrastructure Unclear frameworks and criteria Government support More appropriate and up to date information and data needed Funders and organisations not coordinated sufficiently More emphasis needed on projects addressing SDGs, climate change, bio-diversity Changing legislation and procedures. Small talent pool for investors to draw on – skills shortage Multi-national organisations have priorities and targets set globally, not locally.

Source: Dyer J. A.; this study.

Response I: 17 September 2021 (Survey), Caribbean Economist/PhD Student

The respondent indicated a very high awareness and passionate interest in the blue economy both conceptually and practically, having been actively involved in several initiatives including as a consultant, PhD student, participation and support in BlueGreen Initiative Inc - a research driven Barbadian based NGO. Further commitment also includes Regenerate Barbados a civil society organisation aimed at using Doughnut Economic principles to ensure all basic needs are met within local ecological boundaries. Her vision lies in understanding how the doughnut economics paradigm can be applied to the Barbados Blue Economy to foster policies and actions that result in prosperity and justice for people while being environmentally sustainable. The respondent cited there are some funding agencies for entrepreneurs e.g., Fund Access and the Youth Entrepreneurship Scheme. More specific to the Blue Economy is the UNDP Blue Lab situated in Barbados. However, the interviewee indicated concern over the challenges of accessing finance and in not being fully conscious of the funding screening, selection and other criteria used in making decisions, nor in impacts utilised to monitor success. She also was of the viewpoint that there need to be funding agency sources that cannot just provide small grant funding but also technical assistance, investor networks and market scalability for entrepreneurs.

Aside from issues related to access and the need to develop human potential, she acknowledges there are certain success stories, without elaborating upon them. Her main concern centred around the impression of considerable challenges towards implementing blue economy projects, especially in relation to institutional capacity and finance. "*There seems to be a lack of coordination of funding to get monies to potential blue business. Also, many funding agencies are bureaucratic and individuals become discourage by the process. There is also a lack of unified vision which allows people to know where they 'fit' into the concept of the blue economy and what value added opportunities exist. There is a need for an overall vision of the blue economy that includes a strategy for investment opportunities at all levels (multi-million to small grants). At the moment the blue economy is too government 'heavy' and the lack of*

responsible investment is lacking." Although certain traditional ocean economy sector activities have resulted in prosperity for Barbados and the Eastern Caribbean including ports, cargo services, desalination and coastal development and protection, and have been undertaken with success, these have not always focused on marine conservation or the "blue" sustainability aspect. Examples of success include the West and South Coastal Protection Projects and supporting regulations linked to the Barbados government Coastal Zone Management Unit. There was grave concern over the dramatic degradation of mangrove, seagrass and coral reef ecosystems. To truly advance further, the current approach should be re-examined in a concerted effort to revisit how marine ecosystems can be regenerated that are linked to immediate socioeconomic needs (jobs, investment etc.) rather than economic benefits outweighing environmental cost.

The main risks to sustainable growth and development in Barbados and the Caribbean's blue economy were reckoned to be pollution, climate change, alien and invasive species such as lion fish and sargassum seaweed, sprawling coastal development and soaring population growth and resource pressure. Additionally, there is also immediate urgency to recover from the COVID 19 pandemic and jobs and investment will be prioritised by governments. Her view was: "*However, traditional sectors like tourism that have relied heavily on the coastal and marine environment must be refashioned to, at worst to do no harm, and at best regenerate ecosystems. Tourism is a resource-intensive economic activity, high amounts of water use, energy and coastal degradation all stress the island's carrying capacity*." The respondent observed a willingness to be involved and to develop further any projects or areas of the blue economy as they noted both BlueGreen Initiative Inc. (BGI) and Regenerate Barbados have a significant contribution to both the socio-economic and environmental aspects of the Blue Economy in Barbados and the wider eastern Caribbean. BGI has worked across various Caribbean countries and has the technical capacity to engage in numerous research and development projects. Ranging from small scale fisheries in Guyana to coral restoration in Barbados, BGI is both concerned with ensuring coastal and local communities are the beneficiaries of the blue economy and also managers of the local ecosystems. Regenerate Barbados was established in 2021 and is actively working in an organic manner, to identify community leads that will mobilize people and resources to foster bottom-up sustainability projects. At the moment the social justice group is developing a "Women in fisheries" project.

Progressing into the future, her recommended priorities for UNDP and Blue Economy implementing partners were: "*I believe marine regeneration and conservation must be an area of high priority. Many of our ecosystems are at high risk due to both climatic and anthropogenic pressures. In addition, opportunities to fund new businesses need to exist i.e. biotechnology, ocean energy and blue carbon. There is a need to find new sources of socioeconomic development in these new sustainable ocean sectors. Governments have limited fiscal space to invest in these areas and their market readiness must be understood along with the need to merge investors, entrepreneurs and communities where profits, incomes and benefits exist in a shared business model."* The existing constraints of governments, given the COIVD19 pandemic and debt levels were conceded to be major inhibiting factors. "*Caribbean governments are constrained with high debt to GDP levels and the COVID pandemic has exacerbated this with decreased economic activity and reliance on external financing to fill the fiscal deficits. Prioritising financing that is climate smart and acts an investment into the blue economy is critical at this stage. Accessing and utilising multipurpose financing for sustainable development. Instituting new measures of national accounting that reflect the 21st century priorities of Caribbean SIDS is also important*." There were no further reflections or priorities for businesses or aid agencies. Nor were any further suggestions provided in relation to improving government coordination, information, monitoring and evaluation systems. Nor were any specific information gaps and priorities, specific training, financial, institutional capacity building, monitoring and evaluation suggestions for a workshop or any other UN exact need.

Response II: 22 September 2021: 10 am to 10.38 am (WhatsApp call), (Interview) Robert Petit of Newseas (Aquaculture and Fisheries Impact Investing and Project Perspective)

The investor represents Newseas, an impact investing and project management firm that focuses on scalable, sustainable aquaculture and fisheries projects investment-ready and lower operating risks. It has a global focus with projects recently situated as far as Morocco and Indonesia. They concentrate on support via seed and pre-seed scale investment; the articulation of a bankable business plan; management of expansion finance raising and de-risking co-development and operations support. The investor conceded they might be willing to consider opportunities across Barbados, Grenada, St Vincent and the Grenadines if the enabling conditions were present. He is currently targeting 100,000 tons of sustainable aquaculture production in the next few years across his global sites. From current experience the respondent noted that to get the private sector being willing to finance and cooperate over the blue economy and related projects; governments, aid agencies, local communities, individuals and multilateral organisations/financial institutions had to initiate a business conducive investment climate. I.e. governments should concede that they lack the direct market acumen and perspective. Government efforts to directly stimulate markets through direct subsidies risk destabilizing market distortions, superfluous infrastructure that is a poor fit for industry requirements, or weak and uncompetitive local producers that form a poor foundation for ultimately competing in an international market. Instead, these entities can focus on ensuring an enabling environment for the private sector with a focus on flexibility and stability.

Streamlined regulation, clear tenure to concessions, and predicable application of taxes (and tax exemptions) are far more likely to stimulate growth of a solid blue economy foundation. Rather than dictating markets, the private sector operates most effectively when left to international competitive markets to determine exports, the extent of local commerce, production and consumer requirements. Clear metrics can reward sustainability by “pricing” ecosystem services as a limited form of subsidy, but here too governments and third sector actors will get best results towards scaled long-term grow when they clarify the framework for participation and then let competitive markets work out the challenges of implementation. Experience has indicated that the private sector can trade where most profitable for the highest yields: laying a solid foundation for growth of associate local industries. Successful production, even where focused on exports, inevitably also feeds local markets and additionally motivates copy-cat investment. Governments are at risks of providing inferior products, wasting investment on ill designed infrastructure and unnecessary investment incentives. Government and third-sector endorsed products are too often of poor quality in the final product and root source, compared to international substitutes, are lacking in true sustainability or price competitiveness. Poor quality of inputs for the tilapia industry in Tanzania in the 1990s and early 2000s was cited as a typical example. In essence, the perspective is that products and projects should be demand driven, whilst respecting the constraints of the local environment.

The interviewee suggested a number of direct incentives that governments could provide to truly assist investors and the private sector, whether in the Caribbean or globally. Examples include creating greater policy certainty for potential investors, guarantees for possible exemptions from import duties, assistance with supporting logistics and other infrastructure (by cancelling or otherwise exempting the industry from fiscal and logistical barriers to international trade); training and skills development, research, and (where appropriate) power related subsidies to assist with refrigeration and storage. A clear, obvious, and streamlined procedure to access suitable sites is critical. Government and the third sector can help with this by clarifying and simplifying procedures, and undertaking the necessary technical studies and planning decisions to ensure that site selection is compatible with a sustainable industry. Long project development (and pre-development) timelines need to be expected, with access to site a clear prerequisite for financial commitments by many investors. Sites selected on the back of strong data and with a focus on sustainability not only help mitigate

the likelihood and severity of negative environmental impacts, but also reduce the long-term risk for systematic disease and performance risk that can prematurely cap growth of an industry and leave it with a poor reputation.

Partial risk guarantees can also help encourage private investment by limiting downside risk and demonstrating government alignment for the project's success. Rob Petit cited the example of the USA, where government backed finance is prepared to issue an investment support guarantee -willing to take a potential first loss position. These can be up to 50-80% of the entire investment. This helps to reduce associated investment risk dramatically. It can also help where other agencies including government are prepared to invest i.e. to "have skin in the game" via direct (minority) financial investment, such as through semi-sovereign investment funds. This helps to reassure investors and markets of the potential credibility and reputation of the individual project but more importantly signals a government commitment to maintaining an enabling environment for project success. Impact investors are reassured by sound zoning under marine spatial planning and other facilities including possible needed supporting infrastructure and services. Investors still seek clear financial returns, even if they differ widely over criteria for other areas.

The interviewee was candid in conceding the challenges of developing a coordinated, recommended, blue economy finance and investment impact, as there is often no consensus over potential metrics, screening criteria, method approaches or indicators utilised to measure impacts. Impact investors often each have their own, often unclear methods to decide which investments to favour and how to monitor success. For example, he noted the problems in calculating an efficient fishmeal ratio - as a basis of comparison that ignores quality, sustainability, differing underlying performance criteria and other considerations. His main concern included that these measures should actively contribute towards conserving existing marine/ocean health and ecosystem resilience, and improving upon its recovery. Avoiding species extinction is perhaps one of the most convincing indicators of success, where unsustainable capture fisheries are the single largest driver. But ring-fencing and quantifying substitution by sustainable fisheries and/or sustainable aquaculture is not straight forward and almost always elusive.

The broader impact metrics are, the potentially more useful they may be. He advised linking to the Sustainable Development Goals as the goals are reasonable and there is good acceptability and consensus across impact investment communities. This could include examples relating to reducing carbon and other greenhouse gases in tons removed, reducing water, ecological resource usage and increased in species numbers, weight and quality. Concern was expressed in simply relying upon numerical targets such as reductions in bycatch or pollution loss; or IUU fisheries/ocean fisheries yields as they do not provide a basis of comparison - i.e. comparing wild fisheries or aquaculture to a baseline trend for any risks may seem imprecise. Comparing sustainability across projects and sectors too often becomes subjective such as the reduction of greenhouse gas emissions (i.e. compared to what? – other fish? Animal proteins? Calories generally?), with frequent trade-offs between one category and another (i.e. comparing a system with low carbon footprints but high fresh water and land requirements, with another using little land and fresh water but with a higher carbon footprint). If the carbon target alone is a sole criterion, then even the most unsustainable forms of wild fisheries actually rate far more carbon neutral/reducing then the complicated infrastructure and processing associated with many aquaculture based operations - despite the pollution, safety, human rights, marine biodiversity and other costs of ocean fisheries.

His specific investment criteria, aside from the sustainability and profit returns aspects are (1.) that of scalability and commercial resilience. i.e. the project must be able to be able to suitably increase scale sufficiently far beyond a pilot project or small scale enterprise, and (2.) is the product likely to offset something produced in a less sustainable way. The expected Internal Rate of Return is also critical as a measure of ability to mobilise investment and resources that

are required to grow the business and ultimately scale impacts. Highly localised and small scale enterprises that might generate a return for a family or few locals but offers little potential to investor appetites. He and other investors he knows are mainly only interested in large scale investable projects beginning around US $15,000,000. Smaller scale $100,000 -$500,000 projects require just as much (or more) time and effort but with far lower proportional returns and chances to cover their own margins, and the quantum of impacts from the individual deals is typically low. Examples of commercially successful investments and reputational benefits associated with a pro-investment friendly climate are perhaps the most effective marketing mechanisms at being likely to accommodate copycat projects that are needed to ultimately drive widespread positive change, whether those impacts are measured in profits, employment, tax revenue, displaced carbon emissions, or avoided species and habitat destruction. Rob Petit stated, "*I personally want impact investing to set up industries to truly grow and operate on a meaningful scale and level with more seaworthy, socially impactful and profitable returns*." Moving forward there were no other specific information requirements, recommendations for government or impact assessment best practice metrics that he felt able to share at this point other than an overall stated preference for governments and other agencies to promote more market friendly legal incentives, clear and streamlined procedure for accessing suitable production sites, a more certain blue economy investment framework and suitably commercially viable and sustainable projects.

Response III: 26th September (Survey), Bank Representative

The third response was a survey response from a World Bank representative from its Caribbean environment and technical team related to the blue economy. They perceived themselves to be very well aware and experienced in their perceptions of awareness related to the blue economy. They specifically alluded to the World Bank website as a potential source of further blue economy related information including specifically: CROP, COAST and UBEC, among many others. They were crisply brief on the eligibility and screening criteria related to accessing blue economy finance and investments, indicating only that World Bank Group client countries are eligible to access Bank funding for Blue Economy programming. They gave the impression that selecting projects and investments was a mixed process, with awareness and transparency known in certain cases but in others; were only internally to those within these members' organisations. Yet; despite this uncertainty, the respondent did not identify any known particular instances of current barriers, constraints and challenges towards financing and implementing the blue economy across the Eastern Caribbean. Previously the World Bank sought to develop blue economy opportunities with strategic partnerships through CROP or the Global Environmental Facility supported, Caribbean Regional Oceanscape Project. This included a Strategic Environmental and Social Assessment as a basis for undertaking coastal and marine spatial plans with the following guiding principles:

- **Equitable:** Should be demonstrated in the transparency and fairness practised when making decisions on user access to marine space;
- **Adaptive:** That the marine spatial planning, or MSP, process should be adaptive so that it can meet the changing needs of marine space use. As data and information are available, plans should be revised to capture this new information. Thus, it is expected that the length of the planning cycles will get shorter over time as the decisions made are tested and there is less new information that needs to be considered and incorporated;
- **Holistic:** The MSP should cover all the potential uses of ocean space including ecological, economic, cultural, aesthetic, social etc.
- **Transparent:** The decisions made under the MSP must be done in such a way that stakeholders understand how the decision came about, how resources are allocated, and how it will affect their livelihoods. This is critical to ensure buy-in from all stakeholders for the process and for adherence to the eventual rules and regulations;

- **Knowledge driven:** The MSP should use the best-available science as the foundation for decision making. As new information becomes available about the natural, social and economic processes that affect the marine environment, the plan should be modified to reflect these changes. MSP decision making should use quality, comprehensive data and information, at the appropriate scales;
- **Public and political buy-in and accountability.** For success the MSP must have the support of all stakeholders. Buy-in will ensure the stakeholders are advocates for the process and ensure it is done properly. Thus, MSP should be guided by a bottom-up approach. With public buy-in the political buy-in should follow since politicians tend to follow the will of the people. Buy-in also ensures voluntary compliance resulting in less expenditure on enforcement;
- **Sustainability** – sustainability can be defined as the need to consider environmental, economic, social, and cultural values in meeting needs of the present without compromising the ability of future generations to meet their needs. Thus, during MSP, the quality and health of the environment should not be destroyed for economic returns - environment and economy must go together in MSP decision making;
- **Ecosystem Based Management. Fundamental** to the management of the ocean is consideration of the diversity, health and productivity of marine ecosystems. The marine environment must be treated as complete indivisible systems and the interrelationship between marine users and ecosystems should be recognized. Doing this will ensure ecosystem processes and resilience are safeguarded when decisions are taken;
- **Precautionary Principle.** This principle states that "in the face of uncertainty about potentially irreversible environmental impacts, marine management efforts must err on the side of caution, adopting a risk-averse and precautionary approach to decision making";
- **Integrated Management**. For MSP success there is a need to move away from traditional sectoral and species-based management approaches to a more all-encompassing approach that addresses the interrelationships among issues and sectors, and between nature and development;
- **Duty of Care and Accountability:** Stakeholders should act with due care to avoid negative impacts of the decision made on the marine environment and when decisions are made, persons should be held accountable for them;
- **Multi-stakeholder Participation**: Full stakeholder participation is critical so that credible, accepted rules are identified that assign responsibilities appropriately. This helps ensure stakeholder buy-in and acceptance of the rules and regulations;
- **User pays and other economic instruments.** If the marine environment is damaged, the persons responsible for this damage should be responsible for remedial measures; and
- **Simplicity-** MSP plans should be as simple as possible so that they are easily understood by users resulting in high levels of compliance.

The above framework provides an indication of the diverse spectrum of requirements that guide many related decisions to fund by the World Bank and others. This results in the complexities of establishing a suitable framework to guide Barbados, Grenada and St Vincent and the Grenadines. What can be gleaned from the above principles is the need for each country's blue economy implementing team to adopt a precautionary approach, that is responsive to stakeholder requirements, flexibly ensuring marine conservation, sustainable economic and social development prevail, irrespective of the financial instruments and projects chosen. The principles above, especially confirm the need to avoid further damage to the marine environment as a basis of growth-needing to preserve existing values and functions of ecosystem services - or at least, avoid making them worse.

The World Bank also developed COAST as a parametric insurance scheme to aid small scale artisanal fishing folk and aquaculture in the Caribbean in response to cyclones or other climate related disruptive events. It includes both micro-insurance, to compensate for losses to economic livelihoods, and sovereign insurance for direct damage. Through re-determining the level of risk exposure, premiums and criteria, this aims for swifter compensation to potential beneficiaries then traditional insurance schemes. The criteria for payment are conditional upon the Livelihood

Protection (LP) Component: If the total modelled losses caused by adverse weather at the end of the policy year are greater than the LP trigger (known as the LP attachment point). Secondly it relies upon the Tropical Cyclone (TC) Component: If the modelled losses caused by the wind and storm surge from a particular cyclone are greater than the TC trigger (known as the TC attachment point). The COAST policy follows a three-tier payment scheme organized as follows: Tier 1 consists of a lump sum payment provided once the annual aggregate deductible threshold is met using the Livelihood Protection (LP) component .Tier 2 consists of a lump sum payment provided if a Tropical Cyclone event loss is within a range defined by the policy. Tier 3 provides a lump sum payment if a Tropical Cyclone event loss is above the Tier 2 interval´s upper limit. This insurance instrument's design and support includes support from the Caribbean Regional Fisheries Mechanism and the Caribbean Catastrophe Risk Insurance Facility). The interviewee firmly noted that their World Bank team is in the midst of designing a large Blue Economy program for the Eastern Caribbean that will focus on marine pollution, tourism and fisheries. It will be launched in March 2022. This links to the currently budgeted September 2021 to 2022, 'Unleashing the Blue Economy in the Eastern Caribbean' initiative which will commit US $56,000,000 towards catalysing blue economy investments for Barbados, Grenada and St Vincent and the Grenadines. The respondent has not personally identified any examples of poor investment decisions/failures/worst case projects as experience that can be learnt from in developing an effective blue economy. Nor were any specific risks identified that might threaten the blue economy other than the particular focus of marine pollution and climate change.

The respondent and their organisation greatly believed in the World Bank's value to contribute towards the blue economy in Barbados, Grenada and St Vincent and the Grenadines as significant, given the technical expertise, operational support and financial resources they invest with each of their clients to support achievement of their priorities. It works across all blue economy sectors rather than identifying specific blue economy opportunities and investment priorities. The response advised moving forward, the need to review the IPPC reports recently released, the SDGs and each country's development strategy and Blue Economy programming and action plans. The prime recommendation for the UNDP and others, was to focus on capacity building and awareness raising of the importance of investing in the Blue Economy and creating long-term, meaningful employment for women, inclusive participation and mainstreaming gender equality. Their insight contributed that local governments, aid agencies and businesses can especially focus on female empowerment opportunities and others, particularly in areas related to nature-based tourism, sustainable fisheries and marine pollution management. In regards to improving existing coordinating, governance and implementation mechanisms, the respondent commented: "*Our clients are sophisticated and we work in tandem with them when implementing our programs. Institutional capacity building is always a plus so UNDP may wish to invest in this area too. The WBG has a dedicate M&E team and we embed rigorous M&E practices in all of our programs. This has worked well and we are able to glean important information about how our programs function over the entire project life cycle.*" Moving forward, she advised that a virtual workshop carried over two or three mornings (3 hours maximum) would be best at this stage given the limited travel opportunities for face to face interactions.

Response IV: Monday 27 September, 9-9:42 pm UK time, Ocean Rescue Alliance Representative

This respondent and their non-profit organisation simultaneously operate areas related to marine ecological restoration; public outreach and conservation education initiatives with research. Their prime relevance for Barbados, Grenada, St Vincent and the Grenadines is that they have devised viable blue economy opportunities that could serve as a best practice, business investment and conservation model. She and her organisation focus on memorial and artificial reefs as means of cultivating both regenerative ecosystem/coral reef resilience and recovery but also simultaneously additional tourism resort opportunities. They can contribute actively towards beach nourishment and regeneration.

There are also opportunities for related wave and other renewable energy forms to be associated with the projects and more sustainable fisheries from greater biomass productivity. The model has proven itself to work from Florida's Key West to the Maldives and the respondent is now looking to Mexico and throughout the Caribbean. There is growing interest from governments, including local ones and from US ports as part of their environmental offset programmes generally required by legislation. This solution is considered more natural, less invasive and polluting and more regenerative than the issues associated with alternatives such as old tyres and shipwrecks. Promisingly, she alluded to the structure appearing to be climate resilient and help towards developing organisms to filter out the scourge of marine pollution.

Although the costs vary considerably depending on location, transportation costs to the Caribbean might be US $400-500,000 or $45,000 per day. Average reef structures may be around US $6,000,000 including funding overhead, monitoring, installation, research and transport costs. The greater the overall artificial reef employed the greater the chance for potential cost savings via economies of scale. However, the model has shown itself to be viable through the increased significant flows of tourism, fisheries and ecological/economic functions aside from magnifying coastal resilience through the provision of microhabitats for species. The reef structures consist of modular blocks on average 5 feet by 6 feet. She alluded to several key indicators as to how impact is measured. Aside from seeking to recover costs and make a profitable rate of return on investment; it can be measured by increasing tourism numbers and revenues, surveys measuring stakeholder impressions and experiences; increased coral reef resilience and recovery; biological species growth the number of sustainable outreach activities and people trained; income produced and employment generated for locals. Linking to the Sustainable Development Goals can also serve to measure impact. The aim is also to consider improving local manufacturing capacity, if possible, improve awareness via public engagement and education along with local training, to maximise local impact socially, encouraging marine environmental interest and concern simultaneously. The interviewee expressed a particular passion for aiding these nations to overcome any constraints they might offer.

More tourism resorts are expressing interest although the COVID19 pandemic and travel restrictions, curtailed numbers, revenue and cashflow whilst raising logistics, monitoring and other costs. However, she invokes optimistic prospects as more countries and business operators commit to the oceans and environment from an effective marketing and Corporate Social Responsibility perspective. There are also opportunities that could diversify income further such as blue carbon and biodiversity offsets, using oysters for aquaculture and even creating reef conservation in exchange for memorial plaques to encourage personal individual and business donors. At the moment, what the Ocean Rescue Alliance seeks from governments, aid agencies or tourism operators is a straightforward business transaction, covering a price with fixed, operating and monitoring costs. Traditionally they work with local hosts and governments to gain access to bathymetry information, Environmental Impact Assessments, coral reef surveys, stability tests and other information needed. Although the organisation has the human resources necessary to conduct it, they often remain firmly committed to the concept to upskilling locals to be able to maintain, monitor and conserve these reef habitats effectively. Aside from finance, information and suitable site determination, there were no other specific requirements needed from the government, local tourism operator, aid agencies or the UN partners. Continuing onwards, Shelby Thomas appeared suitably enthused and willing to consider the Ocean Rescue Alliance for any projects in the Eastern Caribbean, for further possible consultation and engagement in subsequent workshops and outreach events.

Response V: Tuesday 28 September 2021, 14.00 to 15.07 pm, (Blue Economy Consultant, Activist and Entrepreneur, Interview).

This 5th respondent considers herself to be exceptionally aware of the blue economy concept having been previously involved at the University of the West Indies as a student, been involved with aid agencies, serving on the Fisheries Advisory Committees and as a consultant. Specific expertise includes those relating to the Global Environment Facility and CLME+ projects, Caribbean blue economy experience, the CC4Fish initiative and introducing digital processes such as pilot fisheries Vessel Monitoring Systems aboard 30 vessels through the Digi Fish project. Other specialities include in particular climate change and sargassum seaweed. Her sincere impressions are that both are major threats to the blue economy. However, it can also reflect a growing, under-appreciated and explored series of potential opportunities for additional employment, revenue and export potential, as a climate resilient livelihood model. The interviewee is currently engaged in projects related to commercialising various uses for sargassum -as a source of biofuel, bioplastics, blue biotechnology, fisheries products and blue carbon, particularly following the example of Mexico. The main challenges for entrepreneurs in this space have been multifold. Firstly the data on observing sargassum seaweed outbreaks only goes back around the past decade. Secondly there have been significant challenges and barriers in accessing finance, with a dearth of blue specific or many supporting entrepreneur and innovation grants around Barbados or the Lesser Antilles. The blue carbon market potential also needs to be still be explored in relation to sargassum and other sources, but the private sector has yet to be fully motivated. The final challenge remains its incredible variability, causing unpredictable fluctuations in market related supply, irrespective of possible demand, which can challenge forecasting revenues and production. A future project is needed to improve funding but also the prediction potential of when sargassum may emerge. A further development is the use of drones and other solutions for efficient harvesting and clean-up to prevent biofouling and other hazards, which the Thalasso company is trialling.

Only a comparative limited inflow of capital has surfaced so far, from the French and a few others for pilot projects, but local financial institutions, governments and multilateral organisations continue to hinder direct investment in small and medium enterprises, being quite risk averse to innovations or in offering traditional credit and insurance, flexible and restructured to fisherfolk and other local precise needs. The respondent stressed markedly that blue finance needs to be scaled up so that those traditionally on the fringes or marginalised, can receive the support they need. Many vessels are not insured. Many fisherfolk for example have virtually nil health or asset insurance or social security safety nets. Often, they try via community savings schemes or credit unions, but these can be mostly insufficient to breach their gaps and specific needs.

She believes in the promise of the World Bank and CCRIF (Caribbean Catastrophe Risk Insurance Facility) piloted COAST parametric insurance scheme as an especially valuable innovation, although has not much awareness on any potential updates since initial pilot workshops were conducted in Grenada and St Lucia. There is also the Global Environmental Facility Small Grants programme as another potential blue finance source. However, the requirements can be onerous and time consuming for particular applicants. Often needs are more immediate then the 2-5 year process for comparatively paltry amounts. Many community members and businesses need certain support and guidance beyond the capacity or interest of the traditional formal banking sector to deliver. Hence there may be the need for associated blended financing mechanisms.

Helpfully the respondent also suggested the blue economy would be more efficiently and capably delivered though improvements in the information collecting process such as increasing automation, rather than manual submission for fisheries, environmental, marine conservation, tourism and other data. Coverage also needs to be extended to places

that are omitted or weaker - i.e. certain fisheries landings, marinas and marine protected areas lacking markets or oversights. Location specific data and the use of electronic logbooks and blockchains could provide real time data for increased transparency, accountability and accuracy. There has not been a true Blue Economy/Blue Growth Census including employment, related revenue, exports and value adding production, demographics and other information for many sectors including commercial fish processors; maritime education and training, marine industry such as shipyards, workshops, engineering and chandlers and shipwrights. Nor has it considered labour remittances and sectors abroad - such as those citizens and residents gainfully employed upon cruise vessels. This could also capture their estimated contributions via investment, asset values, innovation, production, consumption, saved assets and other benefits as well as their specific finance and investment requirements. This could yield a true "value chain" analysis according to the correspondent.

Consistently, the impression was for the desire for support to overcome the limited data collecting and physical staff constraints of various areas of the Barbados government including the Fisheries Division, Integrated Coastal Zone Management Unit and others. In her opinion these staff are already facing problems with too much data required versus too few physical staff available. Others in communities also need their own guidance in related to finance and other areas. The COVID19 pandemic has significantly disturbed training, although one bonus is that it has introduced fisherfolk and others technologically averse or excluded to Zoom and the online experience. Many have been reluctant but are gradually accepting the cost, time and efficiency convenience of the process, or at times the necessity given the reduced COVID19 exposure. However, during this period, some online training was provided. Additional attention is counselled for improving coordinating and governance mechanisms to become more regularly convened. There have definitely been detectable improvements in community consultation in Barbados such as for the 2021 new Fisheries Regulations. There are also Climate Change and Fisheries Advisory Committees to offer advice, although these could be more structured and consistent in procedures. In pondering how this can be improved or what makes a good committee effective, she proffered the insights that the committee composition and selection of the Chair/Deputy Chair were crucial not just for experience but also in terms of networking and communication, leadership, tact, trust, industrial or sector specific knowledge, inclusive representivity and also being able to effectively aid in the implementation and dissemination of results. Communication has also further progressed, through the formation of several WhatsApp Groups, which have had an impressive capacity, along with social media to rapidly communicate events, regulations and risks/issues.

There was remarkable acumen and a very tangible focus on the practical communication and marketing approach that could be conveyed towards implementing the blue economy far more translucently and effectively. For example, she wished to investigate the production of short documentaries highlighting the lives and careers of various blue growth jobs, sectors and financing opportunities. Television, social media and online podcasts were viewed as particularly promising developments. However, more funding and other support would be necessary as budget constraints preclude these, radio interviews or even full page spreads in newspapers to directly alert communities. She favoured taking scientific and various blue economy themed messages and getting marketers to repackage and rebrand the message more directly to target audiences. She especially referred to the graphic shock tactics employed in the United States such as "blue guerrilla" tactics. This immersive marketing approach has previously included examples such as giant pink humps to raise breast cancer awareness in shopping malls. Her ideas included using a crosswalk to indicate size matters for juvenile species. Awareness of the risks, problems, financing solutions and careers might encourage not only appreciation but also uptake and action, willingness to actively become involved. For example, many fisherfolk are aging in Barbados being 60 years and older, but it is unknown as to how many of the youth are likely to follow to replace them.

Climate change also needs improvements in data collection, especially to integrate the Meteorological Services Office with specific associated data and the blue economy. Drought, flooding and other specific risk and impact information needs to be examined to reduce investor, policymaker and individual uncertainty, and may also help the financial and insurance sectors. The advice included the need to develop more climate resilient, safer harbours. Indigenous knowledge and experience should also not be ignored in influencing scientific based and policy responses. Her other recommendations included support for developing autonomous, renewable energy powered, Sea Level rise and weather monitoring stations collecting more climate and climate change data; along with revising policy frameworks more generally to encourage blue economy finance and standardise information requirements. Monitoring and compliance mechanisms need to be further refined so that people can become more actively involved -as ecosystem stewards, with changes in data continuously observed and promoting new technologies as they become available.

Response VI: Tuesday 28 September 16.00 to 17.14 pm, University of West Indies Researcher and Barbados Government Climate Change Specialist. (Interview)

This respondent serves as a climate change specialist researcher and lecturer along with being an advisor on climate change. Although lacking in direct knowledge and awareness of the blue economy, given the potential implications of this grave disruption risk for oceans, marine ecosystems and related economic activity, he proved highly interested both in sharing his expertise but also to become more actively involved. He urgently advised the need to reach out to multiple government stakeholders, broadly supportive of an inclusive approach that is not just focused on traditional sectors. He also expressed major interest in the SDG Funding concept and the background behind this consultancy. His background is predominately climate change, the environment and public health with a PhD. Since Grenada's 2004 Hurricane Ivan and its devastation, he has been even more conscious of the necessity of forward planning and adaptation, to protect infrastructure and ecosystems; further reinforced by the volcanic ash from St Vincent and its devastation on local coral reefs. This impressed upon him the notion that resiliency begins at home and with the individual or business, the ability to recover swiftly, pre-empt risks and to protect essential resources and services; otherwise you will not have the basis for further prosperity.

His primary initiative which he is working on with the Barbados government is its "Roofs to Reefs" project approach. This aims to develop a holistic approach to the threats to marine ecosystems and implicitly the blue economy, through active measures that diagnose and intervene to counteract threats, whilst simultaneously addressing climate change related priorities such as those outlined in the submission on Nationally Determined Contributions. It includes an approximate estimation that of over 90,000 households across Barbados, at least a third are highly vulnerable to extreme climate related events and coastal hazards. Many newer assets are being constructed without any consideration of traditional experience and indigenous knowledge - such as sloping roofs to help withstand hurricanes. Given climate change projections, stakeholders are increasingly anticipated to require modifying assets to focus on Category 4, where previously Category 3 hurricanes may have been more likely to be historically sufficient. Significant funding gaps, however, remain as on average $25,000 per household is needed to effectively adapt to climate change. He indicates Barbados, its coasts, experiences with climate change and other factors are especially well studied, yet this has not always translated to the specific information requirements necessary to adapt the blue economy to climate change and other extreme event activities. For example, this includes the survival rates and duration of various solar panels and other renewable energy solutions, which could contribute a further 90-120 MW to the national grid, and significantly contribute to Barbados's Nationally Determined Contributions (NDCs), emissions reduction targets.

Additionally the project will embrace drought and other event resilience though portable water and solid water storage tanks with capacity up to 10 days. Climate change has apparently resulted in shorter, more intensive bursts of water and Barbados is considered as needing to maximise storage, as one of the top 15 water scarce per capita nations on Earth. Existing water infrastructure is often old, crumbling and poorly maintained, with up to 50% loss in water leakages and contributing further to climate change indirectly through energy wasted by water pumping stations. Accumulated nutrient loads from grey groundwater in households (around 85%) and from agriculture (15%) is principally being dumped into the oceans, accelerating coral reef bleaching and species deaths or damage. This provides the direct links to fisheries, tourism and the blue economy. The problem exists in that only 6% of households are anticipated to be formally connected to water mains, the rest rely on sceptic tanks or discharging, which contaminates the oceans and groundwater through porous karst limestone. Further investment is needed to improve wastewater treatment and collection systems, especially resolving with phosphorous and nitrogen among other threats.

The interviewee is, however, inspired by certain emerging solutions related to repairing coral reefs and urgently touts this as an investment priority for Barbados, Grenada and St Vincent and the Grenadines. Boulder coral provides overall coastal resilience and structure, whereas staghorn and others offer a range of ecosystem and economic services, aside from their tourism and aesthetics contributions. Aside from artificial reefs, they cited the specific examples of reef regeneration through transplanting coral and developing cultured sources to accelerate regrowth. This, however, might need certain changes in regulations, accompanied by marine spatial planning to protect remaining existing healthy reefs to prevent moral hazard, where less scrupulous tourism operators could simply pay divers to artificially break off coral reef components to address the problem as short term; irrespective of wider systematic marine biodiversity implications. Trial projects are being conducted through sending electric currents to shock life into blooming faster at rates of between 10-30% on average. More attention to effective awareness against other threats such as marine pollution and climate change, might dramatically augment recuperation capabilities.

The recent July 2021 NDC document therefore extends to the need to consider pilot projects related to coral reefs and marine ecosystem protection but recognises significant funding gaps remain. Only comparatively limited efforts have been made to engage with the private sector. There is the need to investigate certain reef and investment resilience ratings to determine the extent of how truly effective, responses have been. The respondent is, however, proud of existing initiatives that could help funders such as the National Coastal Zone Risk Indicator Platform being undertaken by the Integrated Coastal Zone Management Unit for Barbados, which aims to ascertain coastline vulnerability and the effectiveness of decades worth of coastal defences. There is also the October 7th anticipated launch of a new University of the West Indies, Global Institute for Climate Resilient Development. This partly aims to help advise on best practises and research and further develop graduates to overcome existing human capacity constraints. The interviewee helped contribute towards developing a specific institute curriculum. The hope is that academia can help breach the gap between science and research and policies or practical implementation.

Otherwise the Caribbean is investigating alternative financing solutions such as parametric insurance. However, whilst this may include natural disaster and climate change clauses, the respondent notably identified the conspicuous previous absence of COVID19 and other pandemics, despite it eventually costing at least 20% of Barbados's total GDP. The respondent also noted the need to revise the concepts of special drawing rights and move to consider not just recovery but climate, green and blue economy finance to support a climate diversified economy and society. Current metrics such as GDP per capita meant that, despite its constraints as a Small Island Developing State, Barbados was consistently excluded from many promising financial sources. He indicated that indicators normally used to obtain aid and grant/investment, and measure impact needed to be re-examined - such as % of GDP exposed to

climate change or other potential blue economy risk. There was quite poignant ardency in his impressions over the need for funding to be more directed towards grants then loans, as the latter only contribute to the increasing indebtedness of the nations. Experiences with the Global Environmental Facility and other funding sources again mirror those of other engaged participants in taking over a year to access funding, only for the window of opportunity or intervention to vanish or be far less effective, due to the rigorous requirements imposed upon applicants. This diverts governments, NGOs, individuals and businesses from actually undertaking their intended tasks or day jobs, imposing severe opportunity costs.

In surveying the future of Barbados and its blue economy prospects, he is understandably proud of the ambitious strides calling for up to 95% emissions cuts, among the most ambitious contributions to the campaign against global climate change including 20% improvements in energy efficiency, 29% improvement in energy efficiency and rapid uptake and deployment of solar, wind and other renewable energy. This includes ensuring all critical infrastructure and pumping stations, receive wind/solar power capacity along with adapting water, electricity, waste systems and households. This indirectly will protect not just coral reef ecosystems but blue economy supply chain assets more effectively, although it will require private sector and other sources of funding cooperation. It is estimated that reducing the 50% water leakages experienced could cost up to $200,000,000. In contrast, Israel's water efficiency is greater than 90% as a comparative metric. There is also a need to develop more continuous, diversified, large scale programme based funding sources; rather than just focusing on individual investment projects operating only within the priorities of the donors or limited timespans. These programmes need to embed effective evaluation of existing resources, so they are not wasted or duplicated and effective skills and experience empowerment and utilisation of locals, wherever possible. The respondent wryly noted that they were irate at the presumption of donors and consultants to call for market related, investable projects, when too often they needed financing and support for the pre-feasibility; risk impact and market feasibility stages as this would improve the odds of being more attractive to private sector investors and traditional commercial funding sources, to overcome risk aversion and asymmetrical information.

Response VII: Tuesday 28th September, Caribbean Youth Environmental Network (NGO, Survey).

This respondent is a specialist in disaster risk management with 5 years related coastal management experience, but is also actively employed as a NGO member. Established in 1993, the Caribbean Youth Environmental Network (CYEN) is a non-profit network organization dedicated to improving the quality of life of Caribbean young people by facilitating their personal development and full involvement in all matters pertaining to the environment and sustainable development. Today the organization boasts of 690 volunteers across the region including Barbados, Grenada and St. Vincent and the Grenadines. The respondent perceives herself to be very well aware and experienced, having completed a MSc in Coastal and Marine Resources Management during 2020-2021, (with an entire module dedicated to the Sustainable Blue Economy) from the University of Portsmouth in the UK and worked in Coastal Disaster Risk Management for four years. The respondent indicated their concerns about the issues related to investing in the blue economy. They noted: "*With regards to the green economy, there is funding for small farmers in Barbados called the "Enterprise Growth Fund Limited" and the "Barbados Agriculture Investments". To my knowledge, I am unsure of any insurance/finance/funding/ support for entrepreneurship for the blue economy*." There was a degree of hesitancy over awareness in relation to the screening/funding/selection criteria utilised for these investments, as the contact referred merely to the process of submitting proposals or completed forms. They remain not very aware of the actual finances available, conceding it reflects critical challenges to the future of the blue economy, along with human resources.

In terms of existing blue economy developments, according to the interviewee knowledge, in Barbados investment has been made in the areas of marine protected areas/ conservation, ports, marine and cargo services, fisheries, coastal development, maritime safety, security and surveillance and desalination. A most notable gap however, appears to be the formation of a Marine Spatial Plan in Barbados. Given the influx of the tourism industry on the blue economy, she endorsed the need for a strong working relationship between the sectors. Myriad problems exist in the absence of such personal interests in resolving common problems. The incident as it related to cruise ships and coral reefs was cited as an example of user environmental conflict and lack of relationship between the sectors. The NGO emissary is notably intrigued by the emerging risks to sustainable growth, development, business and local blue/ocean ecosystem and economy. Examples of potential recent risks include the ongoing COVID19 pandemic, hurricanes and any other impactful natural phenomena; coastal erosions, major hazards such as oil spills along with alien and invasive species. CYEN also aims to promote activism referred to as marine litter that contributes greatly to socioeconomic and environmental development of Barbados. Annually the organisation hosts the International Coastal Clean-up which collects tons of marine litter from across several beaches across Barbados. The organisation also hosts various media campaigns promoting the need and importance of 1.5 to stay alive. Members of the organisation have also represented Barbados and the region on the global stage such as the Global Water Partnership. CYEN has also been the youth driving force behind the '1.5 stay alive' campaign across the Caribbean.

Looking into the Eastern Caribbean blue economy future, the interviewee included the following areas in bullet points which should be prioritised by the UN, governments and various aid agencies. In regards to improving existing governance and coordination structures for the blue economy there, in Barbados, the perspective envisioned the existing government/organisational institutional capacity is 50% adequate to coordinate and implement the blue/ocean economy. The respondent mirrors previous studies in which challenges were raised in respect of improving local finance, practise and human capacity. They specifically advised these can be improved through collaborations with other entities and countries, as well as the facilitation of trainings to theoretically and practically equip locals with the relevant knowledge to develop and sustain the blue economy in Barbados. The use of case studies should also be implemented to develop best practices, term of references, frameworks and guidelines.

- Risk Preparation and Management (as it relates to impacts of climate change)
- Education and Awareness
- Renewable Energy
- Emerging Sectors
- Marine Spatial Planning and Conservation
- NGOs

The respondent as an NGO has virtually no relevant information related to existing monitoring and evaluation processes/mechanisms. They recommended for UNDP to carefully consider more funding for projects for established and emerging blue economy sectors and support simplified access to finance. Collaborations and funding can also be provided for NGOs who directly contribute to the sustainability of the blue economy, and to empower and provide experience for local, emerging employable recent graduates via project consultancies and other technical experience, who are interested in being a part of the sector. This gives the youth a voice and a chance to contribute and also aids in sustainability and inclusivity. UNDP can also participate in more educational and awareness campaigns regarding the meaning, purpose and benefits of the blue economy. These can be done using a mixture of traditional and modern media – social media, newspaper, billboards and community engagements. It should also cater to those whose livelihoods are solely dependent on the blue economy. Those often disadvantage groups who should also be

incorporated such as women, children and the elderly. Trainings and workshops should be made available to NGOs who selflessly also contribute to the sustainability of the blue economy such as the CYEN, Barbados Sea Turtle Project. The essence was that there should also be workshops which involve cross and multi-sectoral departments such as agriculture, tourism and transport, as they are all involved in the sustainability of the blue economy.

Response VIII: 29th September 2021, Survey Response, Blue Economy Consultant Specialist

This blue economy specialist and PhD candidate has experience across ocean governance, marine conservation, sustainable development, climate, blue economy, blue finance, SIDS, EU overseas territories, Pacific, Indian Ocean and Africa. Current experience includes on ocean governance and blue economy strategy and projects relating to the Seychelles blue economy roadmap, blue bond. They currently serve as part-time advisor to the World Bank on blue finance, a company on Red Sea sustainability and ocean governance and UNEP/ANCORS blue economy initiative, contributions to various consultancies and publications on ocean finance (High Level Panel blue paper), Blue carbon finance (CSIRO). She has personal voluntary commitments (in press) and reports to the United Nations and World Bank on blue finance (Pacific Ocean bond and financing blue economy in Mozambique). The respondent indicated being up to date with current thinking and practice. The candidate therefore considers herself very thoroughly aware of the blue economy. Whilst appreciative of their feedback, it is noticeable in the sparseness of their responses, as with others, that uncertainty or reluctance remains in terms of identifying specific sources of blue economy finance; lack of clarity and detail over funding/screening, eligibility criteria, best and worst practices related to blue ocean finance and any barriers/constraints involved in their implementation. No examples of poor investments, failures and worst case practices of lessons to avoid were provided.

Based on general global experience, the respondent helpfully offered a number of potentially lucrative prospects for blue economy growth to consider. These included overall investment opportunities in blueing maritime sectors (e.g. shipping, ports, transport), market advantage for foreign direct investment (e.g. sustainable tourism and fisheries accreditation), marine conservation as an economic sector, climate adaptation and mitigation investment for coastal /infrastructure protection, mitigation (e.g. blue carbon credits) and local business/livelihoods opportunities. Their principal recommendations included the need for a solid pipeline of sustainable blue projects at scale generating revenue. They advised governments and policymakers are cautious enough to follow good governance, policy and regulatory environment, sound financial management and favourable debt to GDP ratio. No suggestions were conveyed about specific intervention or impact investment criteria to measure subsequent success. Her position indicated that good governance is essential for investor confidence. As a major concern however, the indication was that the whole of government processes are often lacking leading to poor policy coherence across blue economy sectors. Furthermore, it is critical to assess progress in implementation through effective monitoring and evaluation and that she reasoned the SDGs provide a useful globally agreed framework, as a basis upon which performance could be gauged. From experience, she considered any subsequent outreach workshops, trainings and programmes should focus on developing an understanding of what blue economy and blue finance are about in global and regional contexts. It includes providing case studies and lessons learnt. It extends to stressing the importance of the enabling environment for investment confidence. Additionally, proposing tools for implementation can also improve the chances of success such as Marine Spatial Planning, Monitoring and Evaluation, transparency and accountability, whole of government processes and good governance.

Response IX: 29 September 2021, 18.24-19.02 pm, (Interview), Waitt Institute Representative

The substitute for the original interviewee is equally experienced with a PhD in the marine/blue economy, having previously worked on Grenada's original 2016 Blue Growth Plan and having joined the Waitt Institute as a blue economy specialist under its Blue Prosperity Coalition. As previously identified in Section 2.4, this organisation represents one of the world's largest philanthropic organisations, self-financing and willing to work with cooperative government-community partnerships to develop the policy framework and all other aspects towards physically implementing a goal of 30% of national Exclusive Economics Zones by 2030 - land and mostly ocean. They have undertaken projects from the Azores to the Indian Ocean to the Pacific, to currently setting up a sustainable blue prosperity financing facility in Bermuda. Although not currently working in Barbados, Grenada or St Vincent and the Grenadines, they offer incisive insight into a core donor concern, equally striving to develop many future mass scale conservation and sustainable marine financing projects and might be willing to partner with these Eastern Caribbean islands, if the conditions were right. They generally do not publish their application process; it is more based on the size of the EEZ and territory that governments and indirectly communities are prepared to commit towards the 30% by 2030 goals in policy. Equally significant are sites envisioned to offer blue economy opportunities; that governments have a since interest in by being willing to commit data, enforcement and other implementation resources, but also about trust - seeking to build networking relationships and engagement. It is especially critical to understand that governments have some form of clear vision that recognises traditional usage, the need for regenerative, supportive ecosystems and respect community concerns.

Previous experience has proven the disasters of poorly designed and executed communication with stakeholder engagement, especially any potential scope for misgivings and uncertainty. What does work is active communication, working with clear expectations and patience with realistic time horizons, although politicians often seek impact far more rapidly, apparently based on fluctuating electoral cycles. To succeed the large scale marine protected areas must be funded well, (although the source mostly focuses on philanthropic impact grant funding), consider enforcement, active monitoring and evaluation, well-designed legal policy frameworks and also be prepared to provide training, entrepreneurship guidance, technical scientific, policy drafting and marine spatial planning support. The Waitt Institute has set up fellowships and partnered with the University of California in Los Angeles to train students/utilise specialist researchers. They are working to quantify and qualify potential risks and benefits of intervening versus not intervening, as a benchmark of successful performance and comparison.

He was forthright in openly admitting that they are still seeking to investigate the most effective forms of screening criteria, method implementation and measuring impact. For example, he alluded to the economic, social and ecological impact indicators briefly such as growth in biodiversity and biomass. Monitoring and evaluation could also be more effectively conducted. He is encouraged by the successes of countries in their programme such as the Azores that, of its own will, committed to raising the initial target of 15% of its ocean area as reserves up to 30%. He is encouraged by Barbados taking the initiative in forming a Ministry of Maritime Affairs and the Blue Economy, but has grave concerns about the absence of similar coordination in Grenada and St Vincent and the Grenadines, where assets such as the Tobago Cays are, in his view, woefully under-protected and valued. It would help if more policymakers actually dived and immersed themselves in the oceans as experience, to understand the problems. In speaking to governments, communities and others, he has observed that many are actively wanting to work out how to reconcile the paradoxes of marine conservation and sustainable blue growth opportunities. A surprisingly frank admission was the perceived limitations of the 2016 Blue Growth Plan for Grenada, which he helped support. In those days, the narrative was to try and emphasise multiple quick-fix solution jobs and to lure investment, given a 40% unemployment rate. The budget and other constraints only allowed for limited stakeholder engagement and he would have really desired a community roadshow to accelerate public awareness. Over the past 1-3 years, the actual protection and restoration of the marine

environment is paramount. Continuing into the future, he expressed an open interest to consider any research findings and potentially collaborating in a more formal partnership over supporting blue economy and marine protected area development.

Response X: 4 October 8.32 to 9.07 am SVG Time, Interview, Representative of UNEPFI/its Sustainable Blue Finance Investment Principles

This respondent is part of the United Nations Environmental Programme and their sustainable finance initiative, to reach out to private sector stakeholders to encourage the implementation of the UNEPFI Blue Economy Finance, the Principles for Responsible Finance and other sustainable finance and investment principles. The Principles were drafted in 2018 but interest has mostly grown from 2019 onwards, especially through their connection to SDG14. Stakeholders are gradually recognising and conceding the need for related guidance frameworks incorporating the oceans/marine sector, given the absence of such guidance outside the Principles and comparatively few collectively recognised sources. This provided the motivation for the March 2021 published "Turning the Tide" guide. This aimed to provide a practical toolkit for 5 core areas to directly link threats to the blue ocean economy in 5 key sectors (as detailed above) with specific clear indication links for investors. As part of the initiative, UNEPFI have recognised the need to include more education, awareness and capacity building - including a technical annex into the guide, to familiarise a less ocean/blue economy sensitised environment for the financial sector.

The impact of these Principles has, however, increased promisingly to over 170, which may increase the range of funding sources for the UN and Barbados, Grenada, St Vincent and the Grenadines. From their Toolkit guide and outreach approach, UNEPFI are seeking to further highlight the value of mainstreaming ocean economic, environment and social considerations into business finance, investment and lending models. They also provide examples of which activities should avoided as examples of destructive poor practices - such as fossil fuels and fisheries with over-industrialised capacity. Examples of best case practice investments are cited such as green shipping and ports, and grey areas for which discretion is advised given the need for more information. However, the respondent reported a shortage of suitable blue economy impact investments that have proven themselves adequately, as a notable limitation constraining this sector. This is hoped to be addressed in the following 6 months, through publishing best practices by around March 2022, sharing experiences from stakeholders. UNEP also aims to publish a second extended publication for "Turning the Tide" on blue economy investment advice, extending the thematic scopes to issues concerning marine pollution, especially plastics and waste management and how this can yield circular economy opportunities. Others include adapting coastal infrastructure and refining further the list of classified potentially harmful versus sustainable versus unclear blue economy investment decisions, following clearer links to the marine environment.

As stated, there are growing signs of active commitment from the financial sector and related expressions of interest in these Principles. UNEPFI is particularly advising those such as Rockefeller Asset Management, with its Ocean Engagement Fund, and the Global Fund for Coral Reefs in their proposed adjustment period. He conceded that only with time, will true best practices become apparent, along with impact indicators to measure specific performance based on the Principles. Given the consensus based approach, in the future he is not currently envisioning any major challenges or revisions to the Sustainable Blue Economy Finance Principles themselves, only in ascertaining their impact and from shared best and worst case experiences. This follows the current implementation approach which has convened specific working groups to align it to the financial sector's expectations. He conceded however, that only time would tell as to the efficacy of the approach to overcome the main inhibitors that prevent a tsunami of blue ocean economy themed investment - those of awareness, investment friendly products and a publicly and consistently,

approved track record. He is greatly heartened that, whilst initially UNEP had to be especially proactive and aggressively market and campaign to entice stakeholders to even consider the blue economy in their fiscal decisions, now they are more organically, independently and spontaneously demonstrating interest such as that of Bank of China and the Asian Development Bank in the construction of their own blue bonds, based on these principles. Moving forward there is perceived to be a greater need for benchmarking performance of these blue economy investments, to determine progress and the value of the Principles plus intervention. These impact indicators still need to be determined for the principles but can be similar Taskforce for Nature Finance Based Disclosures and similar ones for climate change/green finance.

Response XI: 6 October, 2021, (Survey) Green Climate Fund Representative

This male representative originally from the East Caribbean and now a representative at the Green Climate Fund has a PhD and 20 years professional experience in his fields of Coastal Ecology, Environmental Management and Climate Change. He has served as a Caribbean regional manager at the Fund. He indicated that the fund exists to support countries through Nationally Designated Authorities (NDAs) and Accredited Entities to the GCF, building resilience in water, housing, communities, infrastructure, and ecosystems, as well as renewable energy. The Fund is interested in supporting investments in the three countries in this study under the same conditions. These would especially relate to the paradigm shift towards low-emission and climate-resilient development pathways by providing support to developing countries to limit or reduce their greenhouse gas emissions and to adapt to the impacts of climate change, taking into account the needs of those developing countries particularly vulnerable to the adverse effects of climate change. The fund attempts to maintain the 50:50 balance of adaptation and mitigation funding over time. He affirmed that at least 10 approved projects/programmes impacting Caribbean countries, supported by at least 9 accredited entities have been undertaken, following at least 60 readiness proposals across 14 CARICOM countries. The respondent perceived himself to offer a good understanding of national and regional priorities in blue/oceans economy.

The Green Climate Fund (GCF) offers a range of financial options to Barbados, Grenada and St Vincent and the Grenadines via loans, equity, guarantees and/or grants. It focuses on minimal concessional funding at below market terms and conditions to ensure a project or programme is viable. It aims for blended finance, to maximise the impact. The focus for adaptation includes: Health, food, and water security, livelihoods of people and communities; infrastructure and built environment and ecosystem and ecosystem services protection. For mitigation, the scope of funding extends to energy generation and access; transport; buildings, cities, industries, and appliances along with forests and land use. He was relatively clear on the screening/funding selection criteria, which indicate that all developing countries can access GCF resources (except for territories of developed countries). Proposals are screened by the GCF Secretariat across various areas including: Impact potential, paradigm shift potential, sustainable development potential, needs of the recipient, country ownership, and efficiency and effectiveness. It was further communicated that environment and social safeguards are included in the review process. GCF also utilises an Independent Technical Advisory Panel to ascertain the technical, market and other feasibility of any proposed project.

Whilst appreciative of his responses, he was far less able to share examples of specific individual best or worst case examples and practices from his experience. He indicated that he could not identify any specific issues with GCF projects as they were all still under implementation and none had ceased as yet, to his recollection. He was fairly upbeat in regards to future blue economy opportunities for the 3 countries and the Eastern Caribbean. The perspective was:

"*Caribbean SIDS have extensive Exclusive Economic Zones (EEZs). It provides an opportunity for economic diversity considering the potential benefits economically and socially to address food and energy security, reduce poverty and diversify economic opportunities. Tourism, fisheries, and energy sectors present significant benefits. Therefore, a regional programmatic approach in addressing a common resource could prove very useful. Caribbean SIDS have been challenged in addressing coastal and marine resource conservation and resources such as coral reefs, seagrass beds and mangroves have suffered deterioration. Coastal development and overexploitation of marine resources have severely degraded the natural capital that exists. The region also suffers from a lack of a coordinated and common approach to managing this extensive resource. A strong regional approach towards tourism, fisheries, energy and maritime transport (including tourism) may provide a strong framework to design a transformation programme with sub-country projects that are complementary on a national and regional scale, coupled with land-based actions. There is significant potential to increase employment, investment in private sector, innovative financing through green/blue bonds, introduction of insurance and other investments that secure social capital in the coastal zone".*

He confirmed that a Ridge to Reef approach to natural asset management is needed. Large programmes around securing resilient reefs, allowing private sector investments may be vital to securing new jobs such as coral nursery and monitoring, improved fish stocks, and new nature based jobs based on a ecosystems-based adaptation approach to development. In tackling the complex question of ascertaining direct success or measuring impact in climate finance and the blue economy, he felt that funding had to be sustainable in the long term, beyond the government, aid agency or multilateral organisation. These indicators would include the involvement of the private sector to leverage the large capital base in sustainable environmental programmes that address climate change concerns. Another would be increased participation of the private sector in climate change adaptation despite the medium-long-term return on investments. A third and final indicator could refer to coordinated action on the part of States to work together to secure the Caribbean marine space to support regional energy and food security.

To improve local blue economy institutional capacity and governance, including related to funding, he digressed to note that capacity (technical, institutional and in terms of numbers – boots on the ground) varies from country to country, although mostly fair across the Caribbean. He conjectured that significant assistance is required to support countries such as Barbados, Grenada and St Vincent and the Grenadines, given their high debt margins, to attract and retain qualified individuals to support institutions. Regional and national programmes are necessary to train a cadre of individuals to keep the talent pool reasonable. The regional training institutions and universities will need to do more. Overseas Development Assistance or aid is required to build the capacity of regional individuals instead of bringing in consultants whose capacities are further built, and the knowledge is not retained in the region. Significant support needs to be given to regional institutions through partnership with international/developed country partners in implementing programmes/projects to ensure independence in technical know-how can be further improved. The interviewee affirmed that GCF grants and projects/programmes all include monitoring and evaluation components, without specifying the method. They hope to develop adequate knowledge management products to assist National Designated Authorities in fulfilling their mandate. His recommendation for UNDP was to ensure that any governance/coordination and investment framework attained Greater coherence and complementarity with the various supporting finance mechanisms when country programmes are being developed to avoid the piecemeal approach that has stymied development. There were no other recommendations for either a workshop or for any other stakeholders.

Response XII: Friday, 8 October 2021, Survey Response, Environmental Consultant/Gaea Conservation Grenada NGO

This consultant is in her 30's, with 10 years professional work experience and currently undertaking a Master's in Natural Resource Management. She works with an NGO: Gaea Conservation, and short consultancies in Grenada that deal with natural resource and environmental management She felt moderately aware of the blue economy having taken part Blue Economy meetings in 2016-2017 in Grenada, where plans were explained. She felt uncertain over the potential emerging trends and opportunities, and lacked knowledge of what has happened since then. At this point in time she was not very aware of sources of potential related funding that might aid the marine environment and the blue economy, other than the UNDP Small Grant Programme to fund entrepreneurship. But she did notice that the Nature Conservancy, UNDP and Global Environment Facility also support the Grenada Sustainable Development Fund. She was unsure but fascinated to find out more about how to access various funding mechanisms and to comprehend their selection criteria. Previous experience has taught her that: "*Usually, if you received funding before and your project was successful, then it becomes easier to receive more. I would assume new NGOs or businesses coming in can have difficulty accessing funding if they're not partnered with an already established organization or business."*

For Grenada, she noted with evident concern that, in the fishing sector, fishers and vendors are not aware of the opportunities available and are not educated on how to assess funds. Additionally, if they are aware, they would require help accessing as they do not have the writing/reading capabilities that would allow them to navigate the jargon and requirements needed to access funding. Her major observed fears for the future of the blue economy were climate change; the risks of coastal development, invasive species and recessionary consequences through economic cycles, terrorism or pandemics such as COVID19. The fisheries sector was regarded as pivotal to the future of Grenada. In the future she saw the blue economy as changing from a growth in tourism and sustainable/eco-friendly tourism (Blue Flag or Green Key Eco-Rating Program). There is also anticipated to be an increased demand for fisheries and need for more sustainable methods and management practices. She believed that NGOs and international corporations, rather than local businesses, were likely to spur investment and conservation finance within Grenada. For her NGO, she identified progress via the level of impact and change created. *"For example, our mangrove replanting project, success is defined by the number of partners and local individuals we were able to hire, work with or create livelihoods for, while successfully replanting mangrove systems*."

UNDP recommendations included the value of supporting more fisheries and agricultural led projects and entrepreneurships. *"This ensures local economies are more diversified, rather than the one pillar model we currently use (focus on Tourism)".* This diversification into agriculture and fisheries creates opportunities for the secondary and tertiary sector economy. Fisheries can result in new markets, once targeted resources are offered. She warned that the three countries should avoid offshore oil and gas given the major threats and comparative lack of local expertise and experiences in responding to incidents. Her response to existing government/institutional capacity in relation to the blue economy was more sceptical: "*I don't think the Grenadian government is adequately finances nor do I think there is sufficient personnel available to ensure regulations to processes are managed to ensure growth is done sustainably. At present, the Fisheries Division has ONE biologist and 3 fisheries officers (and a number of extension officers that have to function as fisheries officers)".* She also expressed reservations over the potential elitism and exclusion practises associated with monitoring and evaluation mechanisms. "*I'm regularly involved in analyses and reviews as I have taken part in a number. However, the information is largely available to formats that are only easily accessible to those with a strong academic background. It comprises a stakeholder group which makes up a very small portion of all interested parties."*

To improve upon existing processes for a monitoring and evaluation framework to measure results and contributions to relevant national and SDG targets (development of indicators, data collection protocols, monitoring methodology, means of verification, etc.), she proposed indicators such as local trends in loan applications for entrepreneurships. For instance, in the fisheries sector, data that can answer questions like "Are people buying more boats, or better engines or new technology for secondary processing?" For Grenada's marine conservation and fisheries, she advised UNDP and others could provide assistance with little to no stock analysis. "*For instance, we can't answer questions like "Are we overfishing?" We don't really know, and are the loans provided to fishers going to default in 10 years when the tuna fishery crashes? We don't know. Just better stock analysis for high priority species (a first step*)." Moving forward she hoped for assistance in the fisheries sector with related blue economy grant and loan application advisory workshops.

Response XIII: Saturday 9th October 2021, Survey Response, Vaugh Martin, Serenity Dive, St Vincent and the Grenadines

The 13th interviewee is a male, mid-forties, St Vincent dive tourism operator, with college level education and over 15 years scuba diving experience. Figure 3.4 illustrates the Blue Lagoon Marina in close proximity to many dive operators and yachting related enterprises. In his own words: *"Besides the regular dive training and tours that we offer, we also service boat Moorings, deploy and install wave monitoring devices, host school programs where we certify at least 20 local secondary/college students every year to become PADI open water divers. We also host a monthly lionfish fish fry every end of month as part of an awareness program to get more people to appreciate that the lionfish is a great eating fish and to educate them that it is not as dangerous or poisonous as they may have believed. As of to date, we have removed over 30,000 lion fish from our waters. Also of March 2021, we have started St. Vincent's very own first Coral Nursery with the financial aid of the SVG Conservation Fund and supported by REEF Renewal USA. We have the kids and students that we have certified come out to help us maintain and clean the nursery on a weekly basis. We are also in the process of installing artificial coral reefs in areas that need help*." He is therefore passionate about both marine conservation and reducing the risks of alien and invasive species.

He perceives himself to be slightly aware of the blue ocean economy. "I do come across information on the blue/oceans economy. However in my opinion I prefer to concentrate my time on things that I can see or be part of immediate results instead of wasting time and going around in circles trying to define or create terms that that do not help in the progress of any project." In terms of being aware of marine/blue economy funding opportunities, his pilot artificial reef project has received some financial support from UNDP, SVG Conservation Fund, GEF Small Grants Programme and the SVG Environment Fund. To access certain funds, he recalls that the criteria included being established for more than 5 years, transparency and proper record keeping of how the funds are utilized. Aside from those, he mostly hopes to find out about opportunities from luck or social media. He mainly recollects the administrative challenges in accessing finances and other support. He invoked passionately the 'indifferent will' that many state entities manifested, lacking a personal stake or interest in this blue economy. "*However a lot of the challenges are encountered due to the lack of government agencies level of urgency to get the projects done. When you are brought in to provide a service to a governmental agency/department and you have to depend on them to get things organized, it gets very frustrating because then they let time pass and potential business opportunity is then lost due to late deadline submissions. There is also major inconsideration or bias applied as to which stakeholders are important or crucial and who need to be involved in the decision making process of projects to make them successful*."

Figure 3.4: Blue Lagoon Marina, Ratho Mill, St Vincent

Photo; Jack Dyer 2021.

As an example of a successful blue/ocean economy initiative, he pointed to the ongoing, seemingly successful implementation of the South Coast Marine Managed Area. He is also proud of his organisation's role. "*I think that my organisation has played a significant role in the socioeconomic and environmental contribution to St Vincent and the Grenadines by our continued education of students in certifying them as PADI open Water Divers. This gives them future opportunities to expand their horizon in either pursuing careers in Marine Biology or becoming PADI Dive Instructors that would make them marketable to both local and foreign dive resorts. Removing the number of lionfish and keeping the level of the invasive species under control has also benefited the country and not to mention the development of a coral nursery to replant and regenerate depleted and damaged areas as well strengthening wave barriers to help lessen coastal erosion*." No poor examples exist. He is worried about many of the obvious risks and threats to the future of the blue economy including economic, environmental, social, political, legal, local, international, psychological/human and natural. These include pollution, risks of oil spills, climate change, marine biodiversity, coastal erosion, coastal/sand/seabed mining, coastal development, population and resource pressures, illegal and unregulated fishing, along with alien and invasive species. "*All of these are definitely major risks that would hinder sustainable growth but I am of the opinion that lack of enforcement of rules and regulations of any project would be the downfall."*

He spoke with uncertainty as to the future of the blue economy and marine environment given the COVID19 pandemic and the La Soufriere volcanic eruption. He is also concerned about how the government may be implementing the blue economy, without significant outreach and involvement of civil society. "*The majority of the time, relevant stakeholders are not being considered to share insights in the decision making progress when it comes to the introduction of other ocean/coastal related organisations. We are always in a fix it after mentality after the damage is done. Some organisations are given lee way to set up not understanding the risk of future devastation to marine life. Permission is usually given with the sole purpose of financial gain instead of the negative effects it will have on the ecosystem."* He has some optimism regarding his personal business, despite financially suffering due to the above two incidents, but dwelled on the fact that he had never closed. They have made an impact on society where they have given kids more opportunities as far as diving education is concerned, along with coral reef restoration projects and future nursery building projects. He was non-committal as to further priorities for UNDP, lacking full familiarity with them and their initiatives.

For him, in general, governments need to get the right representatives in the relevant positions. **"***This matters so we can develop and not just have persons there to just get a paycheck. We need to think outside the box and get more persons on the ground involved and work as a team instead of one person or department looking for praise for a decision made that is going to cause more issues in the future. Plus, I cannot stress the level of importance that "law enforcements" needs to be present and consistent with every ongoing project. There needs to be support."* He argued the need for more private sector cooperation and communication, to work more as a team instead of trying to fight down each other. His perspective estimates government/organisational institutions are adequate to coordinate and implement the blue/ocean economy in St Vincent and the Grenadines but, as mentioned before, they need to get the relevant ground people/stakeholders more involved when it comes to rational decisions that would make the project successful. He was unconvinced of government claims to monitoring and evaluation or protecting the marine environment and blue economy against risks. "*As a stakeholder, no monitoring or evaluation processes/mechanisms for my sector is ever disclosed or made aware of; on the contrary, it is the complete opposite as we are the ones that would monitor and evaluate and report any irregularities to the respective agencies when encountered."* "*From past involvements in other workshops, I would recommend a simplistic approach. Stakeholders and persons on the ground don't need to know about acronyms and complicated definitions. We need something that is going to be beneficial to us now and something we can implement immediately, not 2 – 5 years down the road just to have another workshop*."

Response XIV: Sunday 10th October 2021, Survey, Barbados Sailing Association Representative

The respondent is part of the blue economy tourism sector, describing herself as a semi-retired marine scientist, lifelong sailor, hosting 35 years work experience, a member of Sailors for the Sea, the Clean Regatta Programme and representative board member of the Barbados Sailing Association. She has an MSc in Marine Resources and Environmental Management and is aged 55-60. She is somewhat aware of the blue economy and the fact that the Association has previously received funding for 6 training boats and to cover instructor costs, although hazier on the actual details. She believes that any business that has ties to marine tourism and the coastal environment may be eligible. Although not personally aware, the President has been previously involved in sessions on Barbados and its tourism/blue economy potential. She indicated that she was not personally concerned or had observed any current barriers to financing the blue economy and tourism in Barbados.

A major concern in business, with possible risks to threaten the marine environment and tourism, is the pressure for high tourist numbers, threatening stability and a swift turnaround strategy. Yet the climate and marine environment/ocean apparently have their own timeline and pace that cannot be so easily rushed or changed for a person's schedule. So being on time as much as possible, but being flexible as conditions change remains her advice. The more sailors that are responsibly trained, the more successful she considers her business and the association to be. She also supports increasing the number of sustainable sailors produced, volumes of marine trash removed and reef surveys and encouraging the reduction of marine pollution, to preserve long term coral ecosystem health. There were no specific concerns in relation to having an investment or funding framework as long as it was clearly communicated and logical. She is feeling more confident about the development of a specific Blue Economy Ministry, Implementing Committee (when informed) and policy that this will help secure a greater future for Barbados and better management of the oceans for all users. Her concern remained that coastal development needed to be better monitored in favouring of protecting marine ecosystems. Ideally from UNDP, the government and others, on behalf of the association, more funding of marine conservation and protected areas; more education over potential risks and concerns, more associated monitoring and awareness campaigns would greatly assist for tourists and for the community. The government could further look at developing investment, trade and tourism through large events such

as the regatta and encouraging more inter-Caribbean ferries to draw yachts and other visitors. Another concern is that local indigenous knowledge and experience needs to be well documented and preserved before it is lost. She is highly effusive and ardent about seeking participation in a workshop, favouring even greater acceleration towards Barbados's blue economy.

Response XV: Monday 11 October 2021 10-11.07 am (Interview), Compete Caribbean Multiple Stakeholder Representatives.

Compete Caribbean was represented by several members. As previously detailed, it is similar to the UNDP Accelerator Lab in Barbados in focusing on promoting private sector development, business competitiveness and accelerating/incubating entrepreneurship from 13 countries in the Caribbean on the basis of economies of scale, including the three countries in this study. It is therefore open to all potential applicants with a regional presence. It aids with all aspects of commercialisation from a germinating idea, to testing pilot projects, to aiding with prototype and market development/associated feasibility. Compete Caribbean is directly affiliated to the Inter-American Development Bank, able to rely on certain funding and technical support, although it operates autonomously. It also receives funding support from the Canadian government, Caribbean Development Bank and the British Foreign and Commonwealth Office. Most recently Compete Caribbean received an additional $CAD 6,000,000 injection to keep it operational. It continuous to favour technological innovation and mobilising entities to favour commercial support, having previously been instrumental in contributing to the World Bank's Ease of Doing Business Report, when that initiative was still active.

Compete Caribbean are currently supporting projects such as automated data systems and underwater drones or robots in Barbados and a seafood traceability scheme for tuna, working directly with two fishing cooperatives, to cut out supply chain intermediaries working with US markets in Grenada. However, they previously have had submissions such as those related to seaweed processing from St Vincent and the Grenadines, but none are successful. For certain firms, they have previously worked with the UNDP Accelerator Labs to provide joint funding and support. As prior sections stated, applicants can potentially obtain up to $160,000, in grants or equivalent technical and in kind assistance, provided they make arrangements for loans or co-financing of at least 20-50%. Compete Caribbean is also working to enhance cluster development or value chain analysis.

Under Pillar 2 of their programme, the respondents referred to an additional role of working on an Institutional Capacity Building Programme under the Inter-American Development Bank for various Caribbean nations including Barbados and Grenada. This appears to mirror the requirements envisioned under the UNDP McCue and UNEP Seifert 2021 consultancies and the scope of evaluation detailed in Report/Deliverable 4. This may cause some potential overlap or even the risk of unnecessary duplication of allocated resources as they seek to further improve the actual governance and implementation mechanism for the blue economy. Both the IADB and Compete Caribbean have observed the current weakness or divergence in responsibility between the National Blue Economy Implementing Committee, and the Ministry of Maritime Affairs and the Blue Economy as to who remains ultimately responsible for attracting related finance. Public awareness also needs to be improved. As part of this framework, they are also creating Blue Economy Roadmaps for countries such as Barbados, briefly identifying the legal processes and regulations and possible sectors, in which associated opportunities may be delivered. Simultaneously they are creating courses relate to professional development including establishing, operating and monitoring marine protected areas, communications and social and environmental impact assessment frameworks. This excludes assistance that aims to be provided to Barbados's

Ministry of Maritime Affairs and the Blue Economy to improve its website. A forthcoming project will also look to expand two Barbados marine protected areas.

For Grenada and St Vincent and the Grenadines, the IADB and Compete Caribbean are also investigating assistance with the implementation of their National Ocean Policies and Strategic Action Plans, especially in regards to allocating resources effectively, augmenting any improvements in governance and to investigate any areas of concern that may provide the basis for future technical assistance, funding and partnerships related to developing 1-2 investment propositions and technical assistance. The Organisation of Eastern Caribbean States is also interested in a potential collaborative partnership although these final details are still under discussion. These appear remarkably similar and potentially overlapping with the scope of projects envisioned by UNDP and, if not already existing and involved, it is recommended to consider potentially exploring the concept to gauge a suitable response. In relation to blue economy investment, as with other scrutinised organisations in this report, Compete Caribbean have a number of core investment screening criteria as a basis for rationale decision making, but applied to entrepreneurs and the private sector for business development, rather than including the government sector. These specific criteria are outlined in bullet points below. Moving forward they indicated a possible willingness to shared related lists of previous entrepreneurs who have submitted successful and failed stakeholders.

1 Clear statement of the challenge based on market demand-driven
2. Clear goals and objectives
3. Clear components and activities (with clear outputs and outcomes)
4. Clear budget and timelines
5. How the project can help increase jobs including women and vulnerable groups, increase exports and revenues, how it will impact the environmental impact, feasibility
6. Counterpart contribution from beneficiaries, capacity of the team to execute, and commitment.

From experience, their specific recommendations for a Blue Economy Financing and Investment Framework, remains the clear need to engage the private sector; as historically it has been challenging to get them to participate and supplement funding. There is limited data publicly available to indicate Caribbean private sector interest in this or in supporting entrepreneurship. There is a very limited pipeline of potentially market investable projects in the Caribbean in the blue economy, compared to other areas; indicating the need for governments and others to develop a far more effective awareness and communication campaign to overcome uncertainty over access to finance. Alternatively, entrepreneurs may need to be encouraged - even those that get rejected may, with the right motivation and guidance, including those within Barbados, Grenada and St Vincent and the Grenadines (the latter which was turned down by Compete Caribbean for a seamoss harvesting project); prevail. Aside from access, awareness of whichever screening criteria, stakeholder motivations, methodologies, mechanisms and impact investment indicators; is urged by the interviewees to be as transparent, user friendly and simplified or understandable as possible, rather than being too technical, as many applicants originate from quite diverse backgrounds including unscientific or nonprofessional ones.

However, one of the overall impressions with the blue economy 'tsunami of finance' that is suddenly unfurling, both in the Caribbean and globally according to these correspondents, is that more capital is present in search of a good idea; then there are potentially investable opportunities. Yet, they caution that not enough effort is paid to learning from previous examples of success or failure. A financing mechanism, linked to a Blue Economy Coordinating Committee is well advised to consider helping previous proposal applicants even if they failed, to be inspired to find new funding sources and other resources. Compete Caribbean recognise these processes take time and committed resources but advise the need to at least consider education awareness campaigns of sources such as them or UNDP Blue

Accelerator Labs and trying to persuade a reluctant private sector to adjust their business models and support this sector. The main recommendation for UNDP and the governments for Barbados, Grenada and St Vincent and the Grenadines is the proposed formation of an Operational Unit that not only works to specifically support public blue economy investments, but also improves the marketability/feasibility of private sector and entrepreneur funding guidance and support, along with research grants, NGOs and multilateral organisation entities. This would ensure that stakeholders with worthy solutions and businesses were able to receive related professional, technical and financial guidance, possible legal support and a degree of political will.

For example, one of the challenges they encountered in determining whether or not to support the financing and market feasibility studies of seamoss harvesting, was the uncertain legal implications of its proximity and ownership rights or security of lease and tenure in the environs of the Tobago Cays national parks and potential marine protected areas. With a measure of political and scientific support, entrepreneurs, communities and conservationists/government could work to encourage regenerative seamoss farming with blue carbon and other benefits, similar to previous similar successes in Belize. The answerers were aware of the specific local challenges of trying to adapt the proposed Blue Economy Investment Framework directly to Barbados, Grenada and St Vincent and the Grenadines. They also wished to ensure that resource specific mechanisms were designed to ensure effective monitoring and evaluation, including comprehensive metrics that embrace ecological, economic and social sustainability. The shared perspective is that more could be done to generate market demand for blue economy products and practises among consumers - perhaps awareness by the respective Ministries under the Ocean Coordinating Committees would assist. Furthermore, there are international consumers such as in the US and Europe seeking responsibly sourced or MSC-certified seafood and other products; but more work actually has to encourage individual businesses, whether entrepreneur or more established to provide these needed goods. Mariculture also remains fairly newly established on a mass commercialised scale to many parts of the Caribbean region to encourage both import substitution, such as overcoming the imported material noted in supermarkets and in developing more sustainable exports. Commercial retailers appear to be failing in this respect to supply high quality, localised products, possibly looking at governments to overcome this market failure.

Each application process can take several months, but shortlisted proposals can benefit through support to a professional consultancy service to assist them with proposal writing and business plan development. When looking to give funds, related donors such as those described above aim to look for products that will ultimately stabilise as profitable goods that can survive and compete in markets. Compete Caribbean use similar criteria both to select investments and to measure impact, including leading to improved sustainable profits, employment, exports and sales. Another includes the degree of innovation demonstrated. A third includes the potential for foreign exchange. A fourth includes characteristics of environmental sustainability. It further helps if proposals are investable by being replicable and scalable. Common reasons for projects failing to be selected or those that end up discarded include potential conflict over various uses, poor teamwork and related problems and any uncertain factors such as legal, political, social, financial etc that were unknown at the time of original project inception and agreement. They have worked in the region since 2011 and are fairly confident from experience, apart from the concern that their potential funding will terminate in 2024. They have worked with UNDP and the IADB on various projects to develop private sector marketing, cluster development and value chain improvements. The main concern or recommendation refers to mutually collaborating to ensure that the maximum impact of supporting entrepreneurs remains, aiming to try and extend the funding's longevity. Moving forward the respondents advised looking at UN Habitat, Tech Beach and the Organisation for Eastern Caribbean States for other alternative funding sources and collaboration partnerships as these entities

were also looking to develop blue economy entrepreneur funding, within the three countries in this study, but this remains at project conceptual phase at present.

Response XVI: Tuesday 12th October 2021 10-11 am, (Interview) Becht Charitable Trust.

For the last year and a half, this organisation has been motivated by the plight of the oceans and the urgency of risks to diversify away from its original emphasis on social and humanitarian causes to consider marine conservation funding initiatives including in the UK, Asia and Central America/the Caribbean. Currently they are developing, in partnership with the nongovernmental organisation Rare, means of supporting the sustainable financing and implementation of marine protected areas in Guatemala and Honduras to enhance the resilience of the Mesoamerican reef ecosystem. Whilst not directly part of the scope of this consultancy, they offer similar insight to the other respondents in relation to providing insight into funders, their experiences and requirements. There are not currently looking to consider Barbados, Grenada and St Vincent and the Grenadines as they believe more impact may be made in Asia and the United Kingdom, however they may be prepared to consider investments in several years' time, under certain conditions, if optimal.

They seek to work with established nongovernmental organisations such as Rare being particularly impressed by their success at communicating and integrating small scale local fishing communities. Their ultimate overall objective is to commit to a specific target of at least 15,000 km^2 of physical ocean protected by the end of 2022, through a formal legal process and with enforcement procedures, sustainably financed. From experience, they prefer to link to an NGO as an implementing entity, although working collaboratively with local and national governments, based on organisations such as Rare's track record of developing pivotal flourishing relationships and support. Their selection process also includes recommendations being referred to them. This is particularly helpful to attain conservation and finance objectives if communities see direct benefits to them. They have attained significant local interest and support to this approach, as people relate to physical benefits that surface visibly with changes in productivity, revenue and biomass from a particular area.

Although the COVID19 pandemic has had a notable delay upon progressing development of marine protected areas, they did manage to host community consultations and involvement when case numbers were originally relatively low. In terms of impact indicators to measure success for monitoring and evaluation; their foremost consideration in deciding to invest and remain committed in the future; was the tangible legal progress and sincerity of governments in committing to increasing the number and size of marine protected areas to attain the 30% of marine protected areas by 2030. Their selection criteria include backing up promises with legal protection, enforcement, certain budget resources and an indication of willingness to engage in local dialogue with communities and partner with NGOs. This lack of physical commitment to EEZs by the three countries remains their most reluctant current factor, inhibiting their decision to invest, given less than 1% of each nation's Exclusive Economic Zone is actually legally protected as a formal marine reserve. Additionally, they not only look at certain biological factors such as changes in species biomass and biodiversity abundance, as selection criteria through biannual monitoring surveys (although delayed by COVID19) but also psychologically through a survey, which seeks to measure changes in local community and other participants' perceptions towards marine conservation and the blue economy, and their behaviour. In particular, respondents have been impressed by the swift spillover benefits. For the Becht Charitable Trust they seek feasibly designed marine protected area concepts that have a fair chance of working effectively, although they can work to strengthen the actual governance and implementation.

Moving forward, they have also been inspired to invest and support the blue bonds related initiative that the Nature Conservancy are currently assisting Belize in (as detailed in Section 2.4). This commits to converting debt in exchange for nature and restructuring finance to help support the national and local marine conservation goal of 30% of the oceans by 2030. The aim is to have a measurable impact through conserving 4-5,000,000 square kilometres of oceans. TNC's local presence and reputation mattered in selecting a partner who was locally credible for additional support and expertise, with a degree of established relationships. They are encouraged by this pathway towards sustainable financing, reducing dependency on grants, governments and other sources. Whilst biological metrics may be among the easier means to determine the effectiveness of their intervention support, their decision to favour Belize was based on the encouraging signs of political will and appetite to support the blue economy and marine conservation through active legal protection. It was bolstered further by fervent community interest and willingness, as opposed to many other areas they have tried. For example in the UK, marine conservation appears to come more from central government's political pressure; then it does from local coastal communities (including for overseas dependent territories). The interviewee considers that applicant governments are more likely to be successful in their grant outcomes if they prove a willingness to commit to an effective and enforceable marine management based, protected area. Given the challenges of even the most developed nations; an indication of the willingness to consider usage of drones, satellites and other remote surveillance technologies and techniques.

Metrics have therefore become more sophisticated, evolving towards using technology and other updated methods. This extends to measuring psychological changes in behaviour as a greater sign of how likely the intervention might remain to be truly effective within the long term, although this is even more effective when there is a baseline study undertaken prior to the proposal or project's commencement. For example, Honduras has noted greater interest from fisherfolk being proactive if presented with retraining and other opportunities such as more sustainable livelihoods that are less precarious for fisheries. It can prove economical for government, leading to related cost savings as communities self-police and contribute to surveillance. Protected species have shown to thrive when granted a reprieve. The interviewee also recommended supporting income diversification for locals via opportunities such as ecotourism and regenerative marine farming - through water filtration, blue carbon sequestration and biomass.

The respondent affirms, when undertaking a successful blue economy investment, the necessity of clear community consultations to understand project objectives, attain realistic expectations, responses and commitments towards action; along with greater interest and support. There remain related concerns in regards to Caribbean project implementation experience. Their major anxieties centre around ensuring the impact remains durable beyond the time period it is directly supported and monitored by the donor or investor. Part of this is hoping the local community will specifically seek to mobilise other social and political support. Aside from challenges and potential conflicts in connecting to communities, there are also concerns over the need to ensure specific threats such as climate change; invasive and alien species such as sargassum seaweed or lionfish invasion, biodiversity loss threats, illegal fisheries, marine pollution and others need to be incorporated in a suitable response. Ensuring effective political and community will remain over the lifespan of the envisioned investment can be a laborious process. However, if the cooperation and relationships can be formed in relation to funding, then other objectives can simultaneously be attained in relation to community surveillance and data gathering or monitoring, directly getting input from local fisherfolk. A central recommendation to UNDP, the three respective governments and others is to truly listen and value an experienced NGO with local presence and relationships, concentrating on marketing with clear communications and ensuring that the projects, for which the blue financing instruments are generated, are well structured. The respondent considered the psychological indicators such as a change in risk awareness and mindset, so that marine conservation and fisheries become more sustainable and are not treated as zero sum games,

Response XVII: Tuesday 12 October 2-3.09 pm St Vincent time, (Interview), GIZ Marine Funding and Institutional Capacity Building Representative

This marine conservation funding specialist and technical implementation/institutional capacity advisor has only been comparatively recently involved with GIZ and a related marine protected area project being financed in St Lucia since January 2021. The main relevance is not only the expertise and best practices that may be applicable to Barbados, Grenada and St Vincent and the Grenadines, although more interest was expressed in avoiding Barbados given the reputations of the other 2 for their marine protected areas. From the outset of the interview, this respondent appeared eager enough to exchange experiences and consider working with UNDP and the three governments as a potential source to assist access to financing, governance and technical capacity as needed. Their scope of focus includes terrestrial and marine protected area but also mainstreamed into effective resilience against climate change. The initial project phases consulted with stakeholders, surveying their priority concerns and resource or training requirements. For St Lucia this included the provision of boats, drones and enhanced information gathering and processing ability. The next stage looked at physically improving the management and establishing sustainable revenue for the marine protected areas. The interviewee answered quite honestly about the fact that up to 30-40% of the potential user fees were lost as many operators managed to avoid payment. Cruise ships and other occasional visitors from yachts and other vessels created leakages. The current project was therefore to improve accounting and digital payment systems as well as improving abilities to record information and audit. GIZ also offer potential opportunities in strengthening local capacity building and training to access various forms of sustainable finance, given the challenges involved. They are also working to try and get greater political will and support for enshrining St Lucia's marine protected area to gain higher legal status - two attempts 2015 and failed both times - the second primarily related to people's diversions with the COVID19 pandemic.

Having only joined GIZ relatively recently the respondent was far less familiar with the application process, the methods, selection criteria and measures for determining a successful impact. Many of these indicators still remain works in progress. As indicated his expertise is in improving administration, accounting, accessing finance and administrating marine protected areas. This includes assistance with improving related management plans and data collection systems. He indicated on behalf of GIZ willingness to connect to governments and local conservation trusts or NGOs and communities; where partnerships can engage in shared experiences or peer to peer learning, or a willingness to help support and engage in relation to expanding institutional capacity building. Before the COVID19 pandemic the GIZ respondent mostly felt optimistic, but with the dramatic loss in revenue funding this has led to potential instances of illegal fisheries and other crimes. Salaries and operating costs have been slashed by 50%. Resources have been curbed to conduct routine monitoring and act proactively against the invasive lionfish, marine pollution, coral bleaching and other hazards to marine ecosystems. More conflicts over potential resources are emerging, including disputes from locals that resent external exports - or outsiders from outside the community coming in and telling them how to manage fisheries, despite the best of intentions and experience. St Lucia can partly draw upon local traditions of local community fisheries management and no-take zones. These partly highlight the risks if there is no assistance in mobilising sufficient resources from foreign investors, donors or efforts of national governments to provide to them.

The COVID19 pandemic taught them an even greater risk of relying upon blue economy tourism-related funding, so they are exploring receiving multilateral grants and finance such as from the Caribbean Biodiversity Fund; improving user fees from other purposes and trying to create alternative funds from research organisations, hosting students, volunteers and adventure experiences, although this remains constrained for specific projects. St Lucia and Dominica

experience has affirmed the need to ensure robust systems are still capturing data, even mostly autonomously. Aside from biological and economic indicators, which are more customary for marine protected areas to be considered effective, he would consider success once electronic payment systems are established, the proportion of revenue increases from user fees and when funding agreements are ratified by each signatory.

Response XVII: Wednesday, 13 October (Survey), , Blue Finance Representatives

The respondents from Blue Finance are highly relevant for the three countries, as they are looking to help aid the respective countries in supporting the identification of investment opportunities. Blue Finance is a social enterprise with expertise and a track record in management and sustainable financing of Marine Protected Areas (MPAs). Their approach relies on a proven concept of co-management leases for MPAs with tangible revenue models, leveraged by blended finance and empowering local communities. Blue Finance works with Governments, local stakeholders, donors and investors to design, finance and implement joint partnerships and blended finance solutions for the collaborative management of MPAs. They are all extremely well aware and experienced in the Caribbean blue economy, having been in operations for more than 5 years and currently working on a couple of projects in the region. Besides this, most of the staff are marine biologists and seasoned experts in the blue/oceans economy sector. Therefore they are certainly well versed with the various sources of sustainable financing that exist. One of Blue Finance's key areas of expertise is to raise funds with international donors and investors and structure a blended finance architecture for the MPAs. Generally such blended finance architecture is achieved via:

- The funding support of international donors and development finance institutions such as the United Nations, IUCN, EIB and others with the provision of grants (performance or simple grants) and de-risking instruments (concessional/junior loans and guarantees) at the initial stages of a new project;
- The funding support of public and/or private impact investors with the provision of various types of senior and subordinated debts leveraging public funds and creating a bridge towards more regular commercial funding when the project is financially sustainable.

For a project to be potentially eligible for blended finance and support from Blue Finance, they rely upon the following screening/selection criteria for investments and investors. These funding criteria have been used by Blue finance in various projects with the United Nations and Global Fund for Coral Reefs in different geographies. They know them thoroughly and are applying these criteria on a regular basis.

- Is the documentation sufficiently well elaborated to make a proper evaluation of the project?
- Contributes to at least 1 target sector that fulfils the definition of 'blue economy pipeline for reef conservation'
- Clearly delineated impact metrics positively affecting coral reefs and associated ecosystems Clearly delineated impact metrics for positively affecting coastal and reef dependent communities (at least 1,000 households as beneficiaries)
- Can the project become bankable in a reasonable timeframe ? Maximum 3 years to financial close
- Will jobs be created?
- Does the project / company have a reasonable potential to be financially sustainable?
- Does the project have a business model already in proof-of-concept in the country? And/or has a similar business model been tested elsewhere?
- Is it a new project? No refinancing of operational projects
- Do the project sponsors have experience in the subject matter?

- The project sponsors have never been found guilty of a criminal offence or been sanctioned by any party during their professional career?
- Is the project in question domiciled in the country and all spend will be executed in the country?
- Is there interest in the project from third party funders that can be evidenced by a letter of intent?
- Is the expected project investment sum a minimum of $1,000,000?

They expressed understandable concern over the problems with mobilizing blue economy finance, given the paramount role that the oceans can play in catalyzing economic growth, social upliftment, various ecosystem services and climate/disaster resilience. To quote:

"For Small Islands Developing States (SIDS), the Blue Economy is the backbone to realize the 2030 SDG agenda, for it offers enormous potential in projects with positive social and environmental impact that are financially sustainable, low-carbon, climate-resilient and tailored to meet local stakeholders' needs. On one hand SIDS in the Caribbean are highly vulnerable, deeply indebted and, outside tourism, the region's Blue Economy suffers severe underinvestment. On the other hand, development finance institutions have over US$ 2 billion to invest in the region as shown by global financial market assessments. The causes for this mismatch are the lack of depth and breadth in local public and private capacity to identify, formulate, negotiate and implement bankable projects to absorb current DFI appetite and generate economies of scale and replication. This results in very few quality projects being presented for DFI financing, with wide gaps where needs are the highest, such as sustainable fisheries, environmental protection and preservation of natural capital such as coastal reef systems. Since DFI funds generally require government borrowing or guarantees, private capital must be crowded-in to complement DFI investments in Blue Economy sectors."

There is a need to develop active working relationships with stakeholders, to ensure collective understanding and appreciation of the value of conservation and to avoid decisions which fail to have the interests of ecosystem benefits in mind. Another area for improvement they have witnessed is the concept of collaborative management as opposed to public management. In response to the widespread funding gap for protected areas, some governments have established collaborative management arrangements with non-public partners (for-profit and non-profit enterprises, NGOs, and community groups) for both individual and national protected area networks. These arrangements enable relevant ministries to maintain their core functions (e.g. law and compliance, planning and regulations) with no financial burden or transfer of property, while involving local partners in management with access to financial and scientific expertise. These partnerships tend to take an entrepreneurial approach to protected area management, establishing revenue streams around ecosystem services provided – usually tourism and recreation. Additionally, non-public entities generally have greater flexibility and expertise to maximize revenues from their operations. For example, whereas government agencies are usually required to channel profits through a central treasury, non-public entities have apparently more freedom to retain and reinvest profits, which gives managers an incentive for cost-saving, accountability, and improved management.

They value marine protected areas as offering the most incredible and wide ranging series of opportunities for blue economy investment. However, they recognise that many areas also offer opportunities that can be linked to marine conservation, to will offer a wider range of options to design a tailored solution to each local conditions, constraints and objectives. They have also developed some expertise in other areas such as recreation and ecotourism, fisheries, aquaculture and other areas, offering alternative sources of financing tools and mechanisms. Examples include entrance fees and marine activity fees (diving, recreational fishing, mooring, marine tours (boat and/or snorkelling for recreational activities. Ecotourism concession revenue can derive from resorts and resort based activities, restaurants, shops, museums, entertainment centres, cultural and historic attractions. Other alternatives include commercial

licenses or permits from fishing, aquaculture and plastic pollution recycling; blue carbon finance and quotas, micro and small and medium enterprise funding to local businesses, international and local philanthropy (adopt a coral/adopt an animal). Additional minor revenue could arise from effective enforcement such as fines for trespassing, violating regulations or polluting. They indicated UNDP, investors and others should prioritise opportunities related to eco-tourism; biodiversity conservation; waste management; sustainable energy; fisheries and aquaculture and marine transport In the current Joint SDG Fund project for UNDP, they are recommending some clear targets and Key Performance Indicators to measure success objectively and track the performance over time. For example, they propose the following indicators for MPAs.

- 7 MPAs effectively managed in 7 countries by 2035
- 5,000 artisanal fisherman livelihoods improved & 200 new MPA jobs generated
- 40 endangered species protected including sharks, turtles and corals
- 1M ha of coral reefs & 300,000 ha of mangroves sustainably managed with 100mt CO2 avoided emissions

For local governments they feel that there should be collaborative management arrangements with non-public partners. They advise local governments work with local community and business stakeholders to develop sustainable standards and regulation in line with world best practices (for instance fishing quotas and specific fishing gear/seasonal rules). They concede monitoring and evaluation plays a critical part in the success of an MPA or sustainable fisheries in order to reinforce the key standards created at the onset of a project /regulation, support the compliant individual and businesses and punish the trespassers. Monitoring and evaluation is also critical in assessing the long term effects on the natural, social and business environments of a project/business and eventually adjusting the rules to ensure long term sustainability. Their viewpoint is that a proper monitoring and evaluation framework must have the following components:

- Purpose and scope
- Performance targets and indicators
- Collection of information on these indicators
- Critical review and feedback loop
- Communication and reporting.

Moving forward, they advised: "In the current Joint SDG Fund project for UNDP, we are recommending the setup of a Technical Assistance and Investment Facility (TAIF) supported by UNDP with the following mandate:

- Technical Assistance for specific processes, including new laws & regulations
- Funding for project up-scaling
- Fundraising for co-financing
- ESG impact assessment & certification assessment
- Hosting of supporting workshops to familiarise stakeholders."

Response XIX, 13 October, 8.45-9.03 am (Interview), Schneider Family Office (Serial Investor).

Rather unusually this impact investor was not one scheduled and actually reached out via the Linkedin platform social media network, seeking both to join and briefly introducing themselves to say that they were interested in supporting UNDP/blue economy themed projects between 150,000 and 5,000,000,000 euros, including specifically in the Caribbean, Barbados, Grenada and St Vincent and the Grenadines. They were quite persistently specific, seeking to be contacted only with particular proposals, wanting to be in touch with UNDP and the 3 respective national blue economy implementing ministry equivalents or governments. When this consultant attempted to find out much more,

they only provided brief information as summarised in this response, persistently declining a full interview on the basis that 'time is money'. The funder considers a broad range of sectors for investment including: Energy - Wind, solar, ocean, green hydrogen projects, renewables and desalination; agriculture (greenhouses, nursery, large scale farming for alfalfa, corn, soybean, cereals ,forestry & timber & orchard, wildlife) and processing - Sugar mill, oilseed mill, pulp and paper and further processing. Other sectors include blue and general biotechnology (tissue culture and pharmaceuticals); real estate (villas, mansions, hotel, smart city, clinics, skyscrapers, golf and coastal); Industrial warehouse construction for rental and construction equipment financing (civil, MEP, structural and surveying). Their portfolio extends to airports and seaports; heavy machinery (leasing or purchase); manufacturing (chip, batteries, solar, water, pumps, hardware), textile factories (ginning, spinning, combing, dying, weaving, garments etc) and aquaculture (fish, shrimp, lobster, others). They also extend their efforts to the circular economy via recycling plants (plastic, steel, concrete, waste), healthcare (hospitals, clinics, acute, yoga center, retirement), fintech and other technology; Artificial intelligence (robots, drones, camera, sensors and others including marine applications); along with banking and investment services.

Their criteria mainly appear to consist of aligning to these sectors, but from a sustainability perspective must incorporate potential reference as to how it achieves the Sustainable Development Goals. To succeed, potential applicants are advised to submit, well supported financial projections, offer a clear Return on Investment (ROI), clear dividend payout ratio and an investment exist strategy based on clear metrics. They employ a variety of financial mechanisms and tools including bonds and coupon payments, equity, debt, mezzanine, initial public offerings or IPO's and exchange traded funds or ETFs).

Response XX: 13 October 10-11 am, (Interview), Sustainable Grenadines, NGO Representative.

This senior representative of the NGO Sustainable Grenadines is based on Union Island in the Grenadines, but the organisation also operates in Grenada, with a focus on sustainable marine conservation, climate resilient and blue economy diversified livelihoods for primarily coastal based communities. She has a background in journalism and accounting but has been with the organisation for around 10 years and considers herself to have an excellent knowledge and awareness of the related blue economy. The organisation has served a number of roles, including seeking to represent the environmental and community interests of those islands, quite distinct and separated from the central islands of St Vincent and Grenada. For example, it has helped fisherfolk and local marine protected area staff to improve training and capacity building, along with diversified livelihoods. There remains ongoing concern that many of these stakeholders do not actively have access to the most updated skills and educational attainment including environmental and ocean monitoring/data collection. It also includes basic budgeting, project management and technology, along with efforts to encourage, greener, more sustainable practises in their fisheries, tourism, shop or other activity.

The organisation is familiar with seeking to improve blue economy policy and governance, being especially prominent and proactive in drafting the regions' first Marine Multi-Use Zone Plan as a mapping, marine spatial planning approach to unify stakeholders. They had a significant success in persuading St Vincent and the Grenadines to integrate this approach to governance and planning, as zones reflected a balance between ecological interests and other stakeholder concerns such as fisheries and tourism; into the country's 2020 revised National Ocean Policy. However, they tried to encourage Grenada, but for reasons undisclosed to this consultant, were unsuccessful in obtaining ratification by its government. Additionally, they were instrumental in the Ashton Lagoon mangrove restoration case study detailed in Johnathan McCue's Report 5, including working to clear the channels, after natural water and ecosystem flows were

greatly disturbed through the aborted attempt by a foreign company for a marina, luxury resort and gold course development, only to go bankrupt in a year. They have also been actively monitoring coral reefs throughout the Grenadines and in developing support for one of the world's first transboundary marine parks including support and guidance for enforcement, collecting data, training, finance, communication and outreach strategies.

With regard to their mangrove conservation activities, the organisation has witnessed definite improvements in the presence of fish species numbers and aquatic biodiversity. It has noted increases in the variety and presence of local migratory birdlife such as moorhens and the Caribbean flamingos. Other biological monitoring indicators it uses to measure successful impacts include measurable improvements in turbidity, sediment and associated water quality. Black and red mangroves are also becoming able to propagate and flourish successfully and independently. In regards to the coral reef surveys, generally the process relies on the National Oceanic and Atmospheric Administration's AGRRA tool or Atlantic and Gulf Rapid Reef Assessment, using coral reef health indicators and measured changes over time such as a relative abundance of principal algal and benthic types. They also measure reef resilience. The organisation is therefore excellently placed for any related data collection gathering linked to marine protected areas; as the baseline for the ecological surveys needed under the Blue Economy Investment Framework to attract investors and responsibly manage the oceans. They can also serve as an example of an intermediary with technical expertise and local community contacts, for any related capital sources that prefer to bypass government and choose another implementing agency, similar to an equivalent role for the Barbados Environment Conservation Trust.

They also provide small grants up to $EC 10,000 or US$ 3,700 to all manner of applicants; across broad thematic areas, seeking to diversify their incomes - the main criteria being that, whatever the activity, it must have a provable, tangible benefit to improving the ecosystem health of the Caribbean sea, even if locally. The donors and the organisation are still tweaking the measuring impact and investment structure process, such as determining how long the business remains potentially sustainable and operational for. It has a comparatively simple application process to complete its evaluation form. They recently conducted their first round open to all applicants, where previously it was based on personal experiences, relationships and referrals. This produced 127 applicants but only 49 received funding; however, they have approached their donors, to seek to obtain more funding support, to assist others. One of their main concerns is that, in their view, there is absolutely no funding, information or other resources support that comes from either Grenada's or St Vincent and the Grenadines' governments. 100% of their funding is externally sourced, originating from international aid agencies, governments and multilateral organisations, not generally the private sector or impact investors. Examples include USAID, Ocean Conservancy, the UNDP Small Grants Facility and several others. One recommendation moving forward is that perhaps the governments and their respective National Ocean Coordinating Committees could respectively assist them in terms of helping them to be physically aware of funding opportunities and related letters of support for possible commitment.

There have been evident tensions and frustrations in the ordeals of seeking to gain access to donor funding, given the significant barriers placed both in access and in continuous monitoring and compliance requirements. It was raised with transparent concern, about the impressions gathered that many donors paid token attention to the notions of seeking input from stakeholders as to their concerns; when actually these were superseded by the donor's own funding interests and requirements. There was awkwardness at being grateful at being required to accept inappropriate solutions. She earnestly recommended that relationships had to be based not just on empathy and listening but on mutual respect and equality and being willing to negotiate with other stakeholder requirements. Examples include the long sought request for a desalination plant or major rainwater harvesting and storage facilities, rather than portable household tanks to a few people, that are inadequate to provide sufficient water for the average family of 4-6 people.

Stakeholders seek a central ice-making plant but receive smaller, portable coolers. She therefore advises that blue economy investments and projects; including extending marine protected areas need to developed in true partnership with local communities as potential beneficiaries, NGOs, governments and the funders.

Funding is therefore advised to have clear cut impacts and is advised to be truly effective if it reduces dependency on fluctuating tourism donors or the uncertainty of aid grant support. More specifically, she advised support in setting up ecolodges and other enterprises connected to marine protected areas such as the Tobago Cays, to help offset certain fixed costs at a minimum. These might need the intervention of the equivalent government ministries for both Grenada and St Vincent and the Grenadines. Although many educated people exist, she would also appreciate financial, technical training or other assistance from UNDP, national governments or others to improve related research and development skills, monitoring, conservation, business proposal, administration and other areas.

Many community stakeholders have appeared initially favourable and receptive to seizing other opportunities that have been identified, especially alternative financing during the COVID19 pandemic. The organisation tries to work to reduce ecosystem threats and encourage other profitable alternatives. For example to those cutting down mangroves for charcoal or engaging in excess fishing, the organisation introduced beekeeping – from a proliferation of bees attracted by the flowers. Another example is training former fisherfolk to become divers and marine tourism operators. The respondent thoughtfully admitted that a major challenge - for aid agencies, governments and the private sector that they are still in the process of refining - includes that of effective communication to a diversity of stakeholders - whether related to translating complex scientific or financial, investment and governance concepts, to aid ease of understanding. They suggested the need to consider regular access to radio broadcasts, printed and social media and short informative videos. People also react to visualisation - and rather than remote, international examples to that of the more personal, straight to the point examples, in the intermediate area. A key suggestion is the need to form excellent regular relationships with media companies and if possible, influential social media hosts. Additionally, the government could really assist by mobilising political will, letters of support and commitment to attract donors and other practical assistance including, more specifically, granting greater legal autonomy and divesting certain aspects of marine reserves such as the Tobago Cays directly to communities and NGOs such as Sustainable Grenadines, granting them the control to be more effective, whilst recruiting foreign finance, provided state oversight still remains. International grant donors and the private sector could help Sustainable Grenadines not just in ecotourism, related lodges and enterprises but in creating a market for a set up coastal plant nursery such as at Ashton Lagoon, shops/cafes and other possible ventures, to increase financial, self-sufficient.

Response XXI Thursday 14 October 2-3 pm , Interview, Impact Investor -Valerie Capital

This serial impact investor is both involved in setting up her own fund related to climate, green, blue economy and digital finance, as well as being an international management, finance, institutional capacity building and supporting consultant and an expert in private sector development and involvement. She is also working on an initiative to focus on entrepreneurs, overcoming the low success rate in both undertaking access to finance and in completing accelerators//incubator programmes as a passion to aid small and medium enterprises; and then leading to commercial success and surviving beyond the interventions. Currently there is only around a 10% success rate from those applicants who actually complete these programmes. A core concern is that from her experience; sustainability finance remains heavily underfinanced and underprioritised or supported both by funding sources and by governments. She is also previously been involved in climate financing advisory work for the Organisation of Eastern Caribbean States. Although based in St Kitts and Nevis, she is entirely open to aiding governments, entrepreneurs and the private sector

across Barbados, Grenada, St Vincent and the Grenadines, both as a consultant and as a potential impact investor. She is an ardent supporter of the concepts of the financial sector transitioning to blockchain, other digital innovations and embracing more sustainable funding solutions.

In the Caribbean sustainable finance landscape it can be challenging to secure the right partners. Her screening criteria and metrics focus on establishing relationships including the motivation of the applicants as well as sound financials, offering viable rates of returns on investment and a commitment to acting against climate change, embracing ocean/ecological and social stability. However, finding suitable applicants can be especially challenging and she believes more awareness could be done, through the efforts of a coordinating Blue Economy/Climate Change Committee equivalent mechanism that overcomes private sector reluctance by promoting awareness and relationships. Trust can arise through more frequent and regular collaboration with government, working to identify investable projects as well as responding to investor's own needs and priorities. She notes with concern, her perspective that Eastern Caribbean governments have yet to move beyond the drafting of plans and policies, hiring associated consultants but need more assistance towards the actual implementation. More effort needs to be concentrated to try and entice governments to not only including various types of financiers but also clarity on their motivations; their criteria, their priorities, means of measuring impacts; policy and support requirements along with distinguishing characteristics. For funders, time committed is money -it therefore needs potential opportunities or self-interest to motivate them to diversify options such as through government or NGO based blue bonds, related venture capital, equity or asset based finance.

From the interviewee's insights, the Caribbean financial landscape has other background factors that inhibits the growth of blue economy investors and entrepreneurs; unless a change in mindset, suitable financial, legal and other incentives can be directed by the government and various entities on the equivalent of the Blue Economy Implementing Committees for Barbados, Grenada and St Vincent and the Grenadines. Only in Jamaica has a credit bureau project been attempts –"Farm Credibly," to simplify more accurate assessments of traditional credit risks and spur more institutions to extend credit. The Caribbean's historical legacy is often such, that many business enterprises are based on family ties and intergenerational wealth dominating, from those diversifying from more traditional land and physical assets as a historic plantocracy or external companies into shipping, supermarkets and other areas; more likely to be far more cautious. Existing financial sector institutions are therefore quite conservative. Few accelerators and incubators are supported to encourage sustainable financing and education programmes could favour entrepreneurs and be more aligned to climate change, the green, blue and circular economies. St Vincent and the Grenadines was cited as one of the very few general entrepreneur incubators and accelerators that is managing to survive, although not focused on his area. Virtually no funding appears to derive from government for local nongovernment organisations or entrepreneurs and small and medium enterprises in Barbados, Grenada and St Vincent and the Grenadines continue to experience challenges including those in tourism and aquaculture.

The respondent notes the issues involved in trying to scale up existing enterprises, beyond cottage industries and the significant time and investment that has to be applied in sifting suitable applicants. There is therefore a role recommended through governments, the media, social media and civil society in promoting and accelerating awareness. Governments and entities such as UNDP are counselled to embrace more preincubator and preaccelerator programmes prior to the actual incubator and accelerator process for entrepreneurs, to try and inspire that change in associated mindset -to be more creative as a business person.

A recent project for the OECS focused on an investors/individual business needs based analysis in relation to green/climate/sustainable finance and in the next phase of recruiting consultants, may look to engage with the blue

economy. St Vincent, Grenada and Dominica were quite comprehensive in expressing their concerns over the regulatory barriers or disincentives that encourage the financial sector to be more conservative and avoid major scale lending to small enterprises such as in fisheries, aquaculture and tourism. As an involved consultant, she indicated to this interviewer that she would ask if a copy of the preliminary research could be shared with this consultant but nothing has materialised, as yet. She is currently seeking over the next several months to harness $300,000 to $400,000 to support more local Eastern Caribbean startups and entrepreneurs. Several of these have received previous funding from a Caribbean Green/Climate Funding Centre of around $EC 50,000 each, but the project was not sustained in terms of retaining finance, as other areas such as digital and gender related areas which formed 2 of the 3 hubs under a hub and spoke model aside from green/climate finance; received far greater attention and resources. Her concern remains that the Eastern Caribbean private sector has yet to fully embrace the concept of sustainable finance and she advises working with regulators such as the Eastern Caribbean Central Bank and governments to consider if any insurance or hedges against first losses and possible risk of bankruptcy can be hedged, to encourage more potential funds to commit. The example of the Eastern Caribbean Central Bank as one of the first three to embrace digital payments in the world and the region as among the early applicants of mobile banking, serves as some proof of the willingness of the local financial sector to potentially embrace change, if a central coordinating committee and related Ministry in charge of the blue economy, were to help them understand its ramifications.

There remains a challenge across the Caribbean for the blue economy being delivered effectively and that remains the time and other pressure demands exerted on senior political and civil servant representatives. A national Ocean Coordinating Committee is advised in such a way as to follow the private sector in developing supporting technical expertise and inclusion of nongovernmental entities to aid implementation. The opinion remains that often there is a lack of traction, relying upon external consultants as experts, but she spoke of the need to encourage local absorption capacity, providing motivation through effective communication across all tiers of government, so that more people within government understand as to what it might mean for their administrative processes, along with reaching out to the public to enjoy far more widespread success. There is a great need for strategic alliances that are mutually reinforced to ease undertaking business efforts and to commit towards a sustainable blue economy in this area. The private sector, governments, entrepreneurs and entities such as UNDP could all cooperate together. Aside from these strategic alliances and effective communication/education, the government could review the necessary infrastructure, skills and supporting resources necessary for specific projects and general opportunities. Not just traditional institutions but credit unions, mobile banking services and those entities such as sovereign wealth and pension funds with a longer term outlook could be well supported. One concern is that due to initiatives such as citizenship by investment, which distort average income per capita; cause countries such as the three in this study to be classified as upper/middle income and thus, they are less eligible or qualified for many forms of concession/aid based development financing, which when combined with the more savings, credit and traditional loans/insurance based, risk averse approach of their finance sector. This makes efforts to reach out to the local private sector and alternative funding sources even more critical.

Many Small Island Developing States clearly have divergences in expectations and culture, -she warns against previous models relying on cooperatives and related mutual cooperation financing models, which may be promoted in Africa, Europe and the Pacific but are considered a far less effective mechanism, outside the more individual or family orientated approach. It may take time to develop consensus building among all parties to supporting the finance, investment and governance implementations of the blue economy including the Blue Economy Investment and Financial Framework -which see supports in principle, so long as it is inclusive in the private sector, small and medium enterprises, entrepreneurs and civil society's involvement at a meaningful, impact generating level. She advises the

need for greater decisiveness and political/financial sector leadership, to unite in favour of this sustainable blue economy vision. This can draw upon the similar experiences of seeking to move beyond climate finance policies by organisations such as CARICOM, to consider capitalising on expertise and commit to related blue economy sector projects. She is also greatly in favour of setting up a pipeline of investable projects between stakeholders; developing related entrepreneurs and supporting impact target based data collection, monitoring and evaluation systems for progress.

A major recommendation was the need to conduct an effective assessment of the resources, finance and skills/education/experience presently available across Barbados, Grenada and St Vincent and the Grenadines in relation to understanding, coordinating and supporting the implementation of related blue economy, green and circular economy and climate related investment, especially when linked to the private sector. Green, blue and other social impact bonds or themed financial instruments have yet to be proposed for the three countries within the sector, that are co-designed with the private sector involved. There is a challenge or perceived implementation deficit of moving beyond consultant recommended projects, outcomes and opportunities, towards enactment of these, where these suggestions need to be outlined as clearly as possible. Part of the reticence from banks, credit unions, the insurance sector and individual investors is that these governments often appear to have challenges understanding of their instruments, financial literacy, requirements and regular communication, not just periodic on specific initiatives. It was further indicated that these three countries lack a capable public-private partnership model as so many larger nations have undertaken. From experience, she advised that workshops -whether virtual -needed to be short -3-6 hours, concisely offer scope for discussion and effectiveness through local practical examples. Stakeholder fatigue as the same people attend similar consultant based workshops, has to be try and overcome through direct recruitment appeals -through shock factors graphically portraying the extent of the problems; how it personally affects them and where are the profitable opportunities or solutions -how they can benefit from it.

Response XXII: Friday, 15 October 11-12:35 pm, (Interview), Eastern Caribbean Representative of the European Investment Bank.

This European Investment Bank (EIB) representative is highly aware and fascinated with the alluring prospects of the Caribbean blue economy, including most particularly those of Barbados, Grenada and St Vincent and the Grenadines. He alluded to the fact that it is trying to mobilise 5 billion euros of funding to support its Clean Oceans Strategy, with investments aiming to be specifically aligned to SDG14 for impact. The EIB finances mainly government based infrastructure and supporting related capacity and project proposals under this fund including stormwater, solid waste, recycling, circular economy, coastal and flood reduction risk based approaches. Under partnership and support with Mirova, AXA Insurance and others under the Sustainable Ocean Fund, devoting US $135,000,000 globally for projects related to improving ocean health, ecosystem and climate resilience and more diversified livelihoods, adapting to ocean threats such as sustainable fisheries, aquaculture, tourism, the circular economy and others.

When pressed for the application and eligibility process, he deflected the question towards the website; being reliant on a number of factors such as: the promoter's capability to implement the planned project; information on timing and employment during implementation; compliance with applicable legislation and EIB guidelines. It includes under potential environmental impact; compliance with applicable legislation along with information on environmental impact assessments and an analysis of the products/services demand over the project's life, with reference to their sectoral studies. They are also interested in information on project costs and its detailed components; especially in comparison with the cost of similar projects, information on financial profitability and related indicators (e.g. rate of return) and

economic profitability or potential market demand. He concedes that the process can be extremely rigorous for many applicants taking an average of 18 months to 5 years, considering various phases as an implementing mechanism. These include assessing the technical scope to pre-select relevant projects of interest; determine the resources, methods and phases of implementation, operation and procurement. It also includes an environmental impact assessment as well as initial feedback as to the potential market and demand; the related investment costs and profitability and the project selection process, then investigated as to how costs and other resources or their related stakeholder requirement themselves might change. To monitor and evaluate its progress in the blue economy and others, the EIB conducts regular additionality and impact measurements, on the following three criteria. These illustrate

- Why? The EIB should ensure alignment with EU policies and address less than optimal investment situations that result from market failures;
- What? The EIB should lessen these sub-optimal investment situations and constructively shape investments in terms of scale, scope, structure, quality and/or time;
- How? The EIB should contribute financial and non-financial support to the project that complements support from other organisations and sources.
- The three Pillars are accompanied by project results indicators that may be more specific depending on the project stated.

Recently the European Investment Bank is seeking suitable investment projects, at least 4-7 specifically within the Eastern Caribbean and related to the blue economy. The European Union is also looking at $8,700,000 to specifically improve waste management practises. The aim is to reduce direct pollution threats and expand water security, given climate change and other threats, which are now been mainstreamed as a requirement for all successful proposals. Examples of these include measuring the proportion of waste removed, decrease in numbers of illegal fisheries and other areas; increases in recycling rates, reductions in marine pollution and other indicators. The interviewee indicated their approach had been developed over 60 years and they saw little incentive at rebranding it in relation to the blue economy. They do bring in technical experts where local conditions require, to overcome any possible shortages. Although the respondent indicated that the precises project proposals need to originate from government, he indicated an interest in particularly handling reef protection, wastewater, marine pollution and the circular economy. He indicated that the Bank lacked the direct expertise to handle sustainable fisheries, aquaculture and tourism and these would have to be possibly separately developed, in conjunction with Mirova and other funding partners.

In developing Caribbean blue economy finance not just within the three countries but across the Eastern Caribbean, the respondent voiced phenomenal apprehension over local capacity constraints and resources actually committed physically to the blue economy, such as specific ring-fenced funding, technical and human labour resources. Obtaining good quality proposals with well-designed project ideas requires a high standard of compliance from the applicant as to the EIB's standards. His principal recommendation was the need for the Blue Economy Finance and Investment Framework to devise suitable clear investment priorities in consultation with government and other stakeholders, agreeing on allocating responsibility, resources requirement and consistent applications of whichever metrics, impact indicators, methods and instrument types selected. These priorities can then be used as the baseline for negotiation and communication with EIB and other investors.

Furthermore, the respondent highly advises the need to promote awareness of the significance of the blue economy, the impact costs and risks they face, and the value of acting decisively on opportunities, as prompt priorities. He found that comparatively rather few people made the direct personal links between their actions and inaction in relation to

the ocean and especially for civil servants and politicians to feel sufficiently motivated to act. One project in Grenada failed for three years, despite getting external funding and agreement from five local NGO's -on a technicality of one partner not being locally incorporated. There appeared no drive on that occasion to find an alternative solution. Another marine protected area initiative failed based on funds being embezzled by one entity. He also advises the need for more direct awareness of the blue economy being a local target in government training, legal, procurement and enforcement priorities, along with marketing and communicating to the general public, business community and others. Government can further help the private sector across the three countries in this study through improving ease of doing business, improving incentives and finance access or awareness for entrepreneurship, small and medium enterprises and reducing regulation burdens or gaps. The respondent calls for clearer frameworks for attracting investment via public-private partnerships, requiring more sustainable procurement policies and even looking at pressurising the local banking sector to favour more impact investing expertise.

The respondent has a simple proposal if the Blue Economy Implementing Committee is truly to work. It needs to be under the leadership of a more autonomous figure who is more impartial against the potential politics and schisms or relationships that cause problems between various government ministries and other agencies -or power relationship struggles, including at more junior levels. They would need to be selected to have a passion for the blue economy, influential enough to be decisive and apply political pressure directly to the Prime Minister and Cabinet level but also accessible, so that investors, communities, businesses and entrepreneurs can have a direct channel of communication access. They would then be able to highlight their concerns and have a voice, able to identify any opportunities and related concerns. These could then be channelled constructively through the Ministries and Coordinating Committee so that proposals get the urgency they need rather than getting bogged down administratively and through bureaucracy. It would help if the coordinating mechanism had representatives or regular interaction processes and workshops/involvement with the private sector and community. Enough resources need to be allocated to it for it to independently function effectively. The leadership figure as well exerting political and social will, as the Committee needs to also have enough autonomy and power to confidentially reject contentious or less effective proposals. Technical experts could be placed as part of the Secretariat to provide input as needed, assess proposals and other support including ensuring sufficient information is present for effective decision making, including developing associated information systems.

The respondent was fairly emphatic about not needing to rely upon government for any specific information beyond the proposal; as the EIB contracts or utilises its own expertise, including for monitoring and evaluation. He had no specific recommendations as to how relationships could be improved, using the government or committee and unite to the public. Finally, he really emphasised the need to gain traction on the Blue Economy so that funders and the public do not see just a few media releases on being parts of events or working groups such as that for marine protected areas but to actually see more tangible blue economy outcomes such as establishment of waste recycling facilities, new investments or enhanced coverage of marine protected areas as legally protected territory. Oceans need to be treated as blue oil -i.e. as valuable to these small island states, and this includes being proactive at marine ecosystem protection -which is being increasingly marketable s natural capital for blue bonds and other investments. Another advantage of the Blue Economy Czar or Champion is that they could look beyond the horizon of the next conference or electoral cycle and reflect a longer term view, needed when developing most infrastructure, marine protected areas or other significant investments. Into the future, he earnestly hopes that related blue economy findings such as this consultancy and those of others may become publicly available, being especially keen on having active public workshops consulted.

Response XXIII, 13 October 2021 (Survey), Barbados Ministry of Maritime Affairs and Blue Economy

This respondent offers over 30 years' experience in environment, project, climate change and blue economy management areas. He considers himself to be very well aware of the associated blue economy. He indicated that as a result of the COVID19 pandemic, Barbados's National Blue Economy Implementing/Ocean Coordinating Committee or equivalent for Barbados is "Such a Committee either presently does not exist or is non-functional as a consequence of the Covid19 pandemic. The Blue Economy Roadmap clearly recommends the need for such a Committee/Advisory body drawn from public and private stakeholders. Blue Economy project steering committees have been established to support related project development initiatives." He indicated that project steering committees meet at a frequency determined by the pace of implementation of the project and necessity for document review and/or consultation. He identified familiarity with Barbados having undertaken specific research and policy consultancies including the UNDP and government based Blue and Green Economy Scoping Study Reports. Others include the IDB government based "Diagnostic Report Implementation of an Integrated Blue Economy Policy Framework and Strategic Action Plan for Barbados, of which a copy was provided to UNDP and this consultant. He also alluded to the fact this is now pending before Cabinet, along with another report on climate change or the 2021 Barbados updated submission of the first Nationally Determined Contribution Report on Climate Change.

His impression was that the existing Blue Economy Implementation Committee and associated government capacity to implement the blue economy was inadequate. When pressed for specific details, he referred to the above studies in regards to specific improvements or changes. He indicated that, although the Committee itself had been inactive, various other blue economy agents had undertaken several public awareness events, to reach out to the community over the course of the year. Once more he alluded to the reports when asked for any specific improvements in a related blue economy communication strategy for the committee and government to follow. He recommended reviewing the Caribbean Catastrophe Risk Insurance Facility as an example of potential funding open to all three countries under this consultancy. His min priorities for such a committee or the Ministry of Maritime Affairs and the Blue Economy to emulate would include governance; regulatory, monitoring and enforcement capacity and reporting.

There were no specific barriers, issues or concerns raised in relation to these priorities or in his experience of implementing the blue economy, indicating only that they were the same for all small island developing states." He had no suggestions in relation to the blue economy regarding information gaps and priorities, specific training, financial, institutional capacity building, monitoring and evaluation and improved means of communication or other assistance that he or other government stakeholders specifically would like from UNDP. The only reference and clear recommendations are those alluded to in the Action Plan and Roadmap. There were no suggestions of specific investment projects as priorities or related to customising the equivalent Blue Economy Finance and Investment Framework for Barbados. The respondent did helpfully provide an Excel spreadsheet of multiple Barbados government and other possibly interested stakeholders, permission to contact them remains pending from UNDP.

Response XXIV, (Survey), St Vincent and Grenadines Ministry of Finance, Economic Planning and Information Technology Representative

This female respondent offers over 18 years professional experience in economic project management, planning, design and monitoring. As background she indicated: "*The mandate of the Economic Planning Division is one which focuses on mobilising external financial and technical assistance, strengthening the implementation and the monitoring mechanism of the PSIP, improving and expanding the range of environmental, economic and social data, facilitating*

the implementation of climate change policies and programmes and the provision of economic assessments. Her role is mainly in assisting in the mobilising of external financing, project planning and design, preparation of the capital budget for the annual revenue and expenditure, and monitoring the implementation of the Public Sector Investment Programme (PSIP). One of the key Government priorities is to explore the blue economy and strategically advance all its economic benefits to Saint Vincent and the Grenadines. The Government is currently preparing a regional project with the World Bank on the Blue Economy, of which the country specific investment is estimated to be about US$15,000,000."

The Government of Saint Vincent and the Grenadines is in discussions with the World Bank regarding the possibility of local and regional financing to facilitate a resilient, locally-controlled Blue Economy. Budget 2021 targets over $40,000,000 in investments that touch and concern the Blue economy – from the modern port, to the expansion of fisheries, to coastal defences, to marine safety mechanisms. Private sector investments add tens of millions more to the total."

This particular interviewee reflected that she was moderately conscious of the blue economy, but was not so familiar with its benefits, opportunities, funding sources and ecosystem, although conceding it is a growing area of possible interest. Her knowledge extends only to the fact that Ministries and departments are slightly encouraged to consider climate change and sustainability within these areas, she has slight involvement based on her job. She has not identified any specific current barriers/constraints/challenges to finance/implementing the blue economy in St Vincent and the Grenadines but it will require a strategy for the blue economy in order to effectively finance and implement blue economy initiatives as a new area. However, she hopes previous country experience in marine tourism, coastal development, solid waste and others will assist in this aspect.

Response XXV: 19 October 2021 10:30 to 11:30 Barbados time, , World Wildlife Fund or WWF Blue Economy/Seafood Finance Representative

This respondent is well aware of the blue economy, as a finance specialist for the World Wildlife Fund (WWF). Although they are not currently operating in the three countries in this study, they may be open to possible fruitful and collaborative partnerships, or related conservation, sustainable fisheries and finance support, under the right conditions. Their focus is to work in tandem with the private investment sector and others to implement the UNEPFI Sustainable Blue Finance Principles and related guidance criteria which they have looked at ratifying, supporting advocacy and the transition towards more sustainable seafood/other blue economy finance. These Principles have been ratified by over 100 investor signatories with the advantage of reflecting a common consensus approach, in contrast to other approaches. She firmly believes in the value of the guidelines as a basis for investors to screen projects, consider actual decision making flexibly and to measure associated impacts. The next phases are looking at providing sector specific guidance of which sectors to invest in and which to avoid. WWF are especially motivated by investment interventions suitably large in scale to create a meaningful impact as measured by certain indicators. Renewable energy, coastal protection and waste/renewable energy.

In developing associated projects, the source advises the need to consider contributions towards ocean, environment, social, economic and other forms of sustainability. Other investment criteria to consider include carefully evaluating associated individual, joint and systemic risks and hypothetical opportunity costs. The funding community are more likely to respond if they understand the personal and professional implications of acting to support the blue economy or inaction. As part of working to promote blue economy investment and Principles, she and WWF are working with UNEPFI to conduct related surveys into investor attitudes and motivations. For the three countries in this study and

others she believes that the Caribbean would benefit, sending a clear signal to attract more related investment if they were to publicly commit to the UNEPFI Blue Economy Finance Principles as part of their related Blue Economy Finance and Investment Framework. Such a framework should also look at being publicly available, list associated clear sustainable investment opportunities, financial incentives/disincentives as to which activities will and will not be sought in these islands. They could also provide transparent mechanisms for public-private partnerships and procurement to follow this framework.

The interviewee was deliberately vague over the actual instruments, the mechanisms, the investment screening criteria and associated impact indicators, asserting that these were context specific, along with the priorities and motivations of investors and the requirements of when WWF itself provides examples of financing, supporting conservation and other support. She focused more on the associated guidance notes as sectors for investors to ignore or favour, although these do not list specific impact indicators. They very broadly hinted at the generic blue economy related opportunities that surfaced including moving into more traceable capture fisheries and seafood aquaculture. Countries were advised to consider diversification from tourism given the COVID19 pandemic into areas such as marine protection, blue carbon sequestration and rewilding ecosystems. More sustainable green shipping, ports and ocean renewable energy are also of increasing interest whilst pressure exists to diversify from supporting fossil fuel based extraction. The World Wildlife Fund are looking at transitional funding mechanisms where investors would directly pay for ecosystem resources to be conserved and for ecosystem services to be protected, whilst fisherfolk defer harvesting until recovery -getting compensated from potentially higher yields once restored. They are working with the Blue Impact Fund in the UK and others to trial this process. Although they are not currently undertaking blue bonds or debt for nature, they referenced the Seychelles and the Belize situation, where the Nature Conservancy are formulating these instruments. There are also blended financing options and insurance schemes such as the Caribbean COAST scheme for fisherfolk and CCRIF for disasters, aside from various accelerators and incubators, that were spoken of in general, without individual examples cited. The Earth Defence Fund have also published a Wild Capture Fisheries Scorecard and the Climate Bonds Initiative, guidance on green sustainability bonds and climate finance as further possible metrics for Caribbean governments to investigate.

Aside from needing to ensure more widespread commitment to these investment principles, her concerns were the challenges of developing blue economy impact indicators that could sufficiently cater for value added risk, cumulative impacts and blue economy sectors that were interrelated in terms of risk exposure, benefits and valuation of ecosystem services or other financial implications. In the future, the wave of investor interest has led her to optimistic prospects as their appetite for ocean sustainable products, ideas, services and developments is accelerating, so she is confident that if Barbados, Grenada and St Vincent and the Grenadines do locate anything and present it in alignment with a recommended framework and these Blue Economy Finance Principles, then there is a fair chance of it being supported. However this would be highly conditional upon a firm leadership entity (like the Committee and Blue Economy Champion), being especially proactive in this approach. She indicated that WWF were open to learning, potentially seeking to provide additional support, mentoring, finance, conservation expertise and other support if needed, even though their presence is not in the three countries of this consultancy.

Response XXVI, Tuesday 19 October 2021, 13.00 to 13.50 pm, World Bank Representative

This emissary of the World Bank Latin America and the Eastern Caribbean is highly versed in the practical implementation and financing of the blue economy in the region, including working with the Organisation of Eastern

Caribbean States in developing their Eastern Caribbean Regional Ocean Policy framework under the Unleashing the Blue Economy of the Eastern Caribbean current project, especially with Grenada and St Vincent and the Grenadines. He is also investigating the problems of marine pollution and the circular economy, especially within the need to align to greater gender mainstreaming and create more sustainable livelihoods, encouraging female participation in recycling activities. In St Vincent and the Grenadines, there is greater evidence of this then for Grenada and Barbados. All three countries in this report also qualify for access to blue economy financing under the World Bank direct support and its more recent PROBLUE donor trust fund process. This fund can also be donor driven -depending on the interests of the supporting funders. He indicated that the criteria for application remains demand driven -based on the projects and interest or will of the various countries themselves. This application process would work in cooperation with the respective Ministry of Finance and other areas. He therefore favoured he concept of a centralised Blue Economy Observatory or research repository or updated website, so the World Bank did not have to squander further resources in conducting preliminary, unnecessary studies. The World Bank does not have blue economy specific impact indicators, screening criteria and metrics but does insist on certain risk management approaches following suitable environmental, social, financial and other safeguarding measures, expecting the equivalent information to be furnished. He was especially indicated in developing suitable agreement on impact indicators for governments and the World Bank to consider. In the past this has included improvements in fisheries yields, the number of beneficiaries, poverty reduction and links to the Sustainable Development Goals. Corporate debt and standard financial or investment indicators can also reassure more traditional investors if agreed to, although some information for these processes may remain entirely contingent upon that provided from other ministries. Climate change is also receiving greater attention from various funders.

He concedes the challenges of obtaining consensus on related blue economy investment impact indicators such as those suggested in the Caribbean Blue Economy Finance and Investment Framework in Report 2. For example even a metric such as the number of hectares of marine protected area added or biodiversity within designated area, as ignoring the extent of true resilience, vulnerability and values from ecosystem services. He is fairly buoyant in spirits concerning the increasing interest of financing and supporting the regional Caribbean blue economy through all these projects and increasing investor interest. More nations are looking to diversify from tourism, reducing their dependency, promoting sustainable fisheries and aquaculture for improved food security rather than for tourists. He advises that UNDP and the national governments are really urged to reach out more to the private sector instead of continuously reaching out mainly to governments and multilateral organisations such as the World Bank to consider their investments. This creates even more dependency on those with quite complex entry barriers, rather than looking for a more varied range of impact investing and other blue economy opportunities.

Response XXVII, Tuesday 19 October 2021, 2-3 pm Barbados time, (Interview), The Nature Conservancy Eastern Caribbean Representative

This respondent represents the nongovernmental organisation The Nature Conservancy across 7 nations including Barbados, Dominica, Grenada, St Lucia, St Kitts and Nevis and St Vincent and the Grenadines. Her previous experience has been involved with supporting the Grenada Conservation Fund, developing marine spatial planning in Barbados and a related blue bond for marine conservation, whilst striving towards the sustainable financing of marine protected areas across all three nations. She has also been quite actively involved in supporting an ocean ecosystem valuation based approach to the blue economy for the Organisation of Eastern Caribbean states. This is in its final stages considering the environmental, social and economic contributions of tourism and other activities.

From conception in 2018 but operationally only starting to be designed in 2020, she indicated that the Nature Conservancy were working with the Barbados government to look at devising a blue bond debt for nature swap, in exchange for a government commitment to protect 30% of oceans within Barbados's Exclusive Economic Zone by 2030. They started working with government with a marine spatial planning and possible design process including preliminary stakeholder consultations, to consider any possible legislative changes, institutional arrangements and other resources that would be required. The Inter-American Development Bank has also expressed potential interest as a later funding partner. Although the actual design process, instruments and impact indicators are only conjectured to be finalised later, she indicated that part of the funding for the marine protected area would be committed to a specific endowment fund to see a more sustainable baseline for covering related operating costs.

This move to protected 30% of territory under conservation areas by 2030 was voiced at the Caribbean Challenge Initiative as early as 2012. She identified the formation of this target as actual marine protected areas covered has been slow to be implemented by all three countries within this study for a number of factors including insufficient political and bureaucratic will, vested fisheries and tourism interests and other issues. These have subsequently led to the current status quo where Grenada and St Vincent and the Grenadines still remain without a clear viable protection plan to extend beyond less than 1% of their marine territory as formally legally protected, despite being among the greatest observed opportunities to contribute to the blue economy, protect marine environments, whilst generating revenue. The respondent identified the specific example of looking for sites for seamoss farming in St Vincent and the Grenadines as an example of a climate resilient and sustainable blue economy livelihood opportunity. They ae hoping to attract even more local community interest in defending marine parks and supporting blue bond/marine spatial planning, information gathering and conservation objectives in return for this cooperation and creating associated opportunities. Although premature to consider specific rubrics for determining whether the Barbados blue bond and protected area will be effective, the Nature Conservancy have previously used several scorecards with associated targets. There may also be a need to consider the implications of climate change, nature based solutions and other risks or solutions criteria.

The Nature Conservancy at this point are not seeking any additional funding support or resources beyond perhaps aid in improving local institutional capacity, although they seemed highly interested in communication, possible partnership support, a copy of these research results and possible involvement in any related UNDP or other workshop. Information systems for data could be improved as they conduct their own assessments but as an organisation are also based on government's approach. There are also anticipated challenges in relation to ensuring adequate enforcement of marine protected areas. She concluded by affirming that there will always be a need for marine protected areas as the basis of the blue economy, as the most historically proven means to ensure resources remain sustainable and survive for the future of economic, ecological and social functions of ocean ecosystem services.

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Response XXVIII: Thursday 21st October (Survey), Republic Bank Barbados Representative

The Republic Bank male representative has 12 years' experience with a Batchelor Honours and Master of Arts qualification. He considers himself slightly aware concerning the prospects presented by the blue economy and ocean health, because although the Bank itself has not engaged in this area, he is somewhat personally keen as a scuba diver and from general personal research and reading. The Bank has no involvement with the National Blue Economy Implementing Committee or any related government entity nor been involved previously in any stakeholder engagement roles. He was hesitant to provide suggestions for improvement aside from alluding to the fact that greater ocean awareness and education could be improved on a far broader scale in Barbados. No apparent signs of efforts

to engage by the Committee or the government to reach out to the commercial banking sector had been witnessed. He indicated the need to start with basic education and literacy, involving stakeholders in a meaningful and tangible way. He remained unaware of the core Blue economy policies, documents and consulting studies, noting that these need to be more publicly available and centrally stored.

Within Barbados and across the Caribbean he identified certain sources of sustainable green/blue/circular economy/climate or other development funding, insurance, support for entrepreneurship and other areas. Examples include grant funding or Equity support from Ralph "Bizzy" Williams and support from CARICOM/CDB and other Caribbean based institutions providing guarantees or expertise for loans to the sector. The banking group itself Republic Group has given a public commitment of US$200,000,000 in the next 4 years to the Green Economy across the Eastern Caribbean including the 3 countries in the study to support potential related investments in sustainable/ renewable Energy). Republic Group has also signed onto the Net Zero Initiative to be carbon neutral by 2050. While not specifically tied to entrepreneurship, these will inevitably have some form or part of entrepreneurship involvement. He is emphatic in not identifying any blue economy priority recommendations for finance, investment, development or conservation of the blue economy, as no one has been able to articulate sufficiently how the bank can be involved. No barriers or issues in regards to financing or implementing the sustainable ocean sector were noticed, across any sector.

From a commercial banking perspective, his particular concerns included that the major risks to the bank focus around credit risk. Many items to finance are not commercially able to repay a loan on its own. E.g. coastal rehabilitation or preservation of coral reefs is not easily monetized so banks are unable to structure transactions based on their regulatory/accounting guidelines. In contemplating the future of the blue economy and the traditional financing sector in Barbados, he viewed the need for greater awareness of what opportunities there are, the catastrophic impact of a failure to act now and ways in which both individuals and private entities can get involved; should be focused on as priorities. The Bank may have to look at supporting specific sectors in aquaculture, fisheries, tourism, maritime industry, desalination plants, oil rig construction, operations, maintenance and repairs. As a group operating across the Caribbean, Republic Bank have been involved in desalination plants (Desalcott in Trinidad) and support to the maritime and rig maintenance and repair sectors in Guyana and Trinidad given the large oil and gas industries).

. From UNDP in particular, the bank would like their expanded involvement in working alongside government in regards to informing people as to ground up education, as to what the blue economy actually is and what is happening within it. Given the government has limited financial capacity, it should prioritise commercially viable projects and opportunities that can provide a real, tangible monetary return. The private or financial sector could similarly investigate these emerging areas, given other limited investment opportunities, the organisation noted existed within Barbados. He ruminated that aid agencies, the UN and governments were prudently advised to consider ways in which banks can be involved, but understanding the various needs of banks from a collateral and other credit related matters and also from a regulatory perspective. For any further workshops and activities, basic training was necessary connecting the government, banking and other stakeholders to decide what areas of the Blue economy Barbados should focus on. He commented: "*Technocrats will not think commercially, the private sector will require mostly solid profits and banks need a balance of all ingredients to consider it*."

Response XXIX: Friday 22nd October (Survey), St Vincent and the Grenadines Senior Fisheries Representative Ministry of Agriculture, Rural Transformation, Forestry and Fisheries.

This female senior government fisheries representative has 30+ years of experience being highly aware of the blue economy and environment sector. The Fisheries Division was established to implement appropriate measures, consistent with regional and international standards, for the effective management, conservation, sustainable utilisation and development of fisheries and aquaculture resources and related ecosystems. The Division also plays a role in the optimisation of the social and economic contribution from fisheries in collaboration with all stakeholders within the fisheries sector. From experience, she indicated various sustainable, blue, green economy, climate change and circular economy sources included but are not necessarily limited to the following bullet points. The respective screening and eligibility criteria or application process depends on the individual agencies Nationals of Saint Vincent and the Grenadines are eligible for funding. The Fisheries Division is usually informed of these sources of funding through workshops and meetings that officers attend. The media and word of mouth (informal discussions) are also an important source of information sharing.

- Donor Funded Projects: Food and Agricultural Organization (FAO) and other UN agencies, World Bank,
- National Financial Institutions: National Development Foundation of SVG (NDF), Farmer Support Company (FSC), Center for Enterprise Development (CED)
- Not for Profit Organizations: Saint Vincent and the Grenadines Conservation Fund, Mustique Charitable Trust, Saint Vincent and the Grenadines Environment Fund
- Government Funded Initiatives: PRYME (Promoting Youth Micro-Enterprises)

Barriers include to finance/implementing the blue economy in St Vincent and the Grenadines and in the Caribbean regionally include:

- Stringent criteria for receiving financing which may fall outside the scope of stakeholders who are applying;
- Limited and intermittent funding opportunities which does not allow for all stakeholders who are in need to benefit
- Goals of the parent/donor organization may not align with the goals of the applicant/country
- High interest loan repayment rates for financing initiatives

One local success story within the blue economy and marine conservation includes the Tobago Cays Marine Park**.** The Fisheries Division of the government of St. Vincent and the Grenadines (SVG) designated the Tobago Cays a conservation area as part of the Fisheries Regulations of 1987. In 1997, the SVG government promulgated the Marine Parks Act, which declared the Tobago Cays a marine park and created a marine park board to oversee the management of the TCMP and any future marine parks. In 1998, the SVG government formally adopted marine park regulations. A year later St. Vincent and the Grenadines purchased the Tobago Cays, which had until that time been privately owned, from the Tobago Cays Holding Company for US$1,025,000, well below market value, with the stipulation that it would remain a national park in perpetuity. In 2005, the TCMP was selected as one of six protected area demonstration sites for the Organization of Eastern Caribbean States (OECS) Protected Areas and Associated Livelihoods (OPAAL) project. The OPAAL project, funded by the Global Environment Facility through the World Bank; the Fonds Francais de L'Environnement Mondial (FFEM); and the Organization of American States (OAS), currently in its fifth year of implementation, has provided St. Vincent and the Grenadines and the TCMP with resources for and technical assistance in strengthening protected area management, the development of sustainable livelihood opportunities, and capacity building. With the support of the OPAAL project, a new management plan was drafted in 2006 and endorsed in early 2007 by Cabinet. Also in 2006, the TCMP was relaunched as a marine park. This was concurrent with the establishment of a user fee system and the gazetting of park boundaries, In the last four years, the TCMP has worked to achieve its objectives of protecting the resources of the Tobago Cays for the people of St. Vincent and the Grenadines.

In citing an example of a poor investment decision in the blue economy, she provided the following case study. Under a project funded by the Caribbean Community Climate Change Centre (CCCCC) in 2017, a pilot project to demonstrate the economic feasibility and scalability of using a Salt Water Reverse Osmosis (SWRO) plant powered by a renewable photovoltaic system in a water scarce island. The size and geography of Bequia made it an ideal site for the project. Of the various options considered, salt-water desalinization was the only viable solution to Bequia's serious water problems. It replaced a rudimentary rainwater harvesting system which was only able to provide fresh water during the rainy season and left the residents with no other option than that of shipping in water from neighbouring islands during the dry season. In the establishment of this project/initiative, there was insufficient training for persons from the area in site maintenance and presently the output of water is of poor quality. The costs for upkeep of this system is very high as it consumes a lot of electricity and this does not seem to have been factored into the project design at the time of execution.

For the Fisheries Division and the future of fisheries and the SVG blue economy, success can be measured through, but not limited to:

- Sustainable use of natural resources, inclusive of Maximum Sustainable Yield (MSY)-based decisions on Total Allowable Catches (TACs)
- Improvements in monitoring, control and enforcement within the Fishing Industry
- Increasing the contribution of the fisheries sector to poverty alleviation and the overall Gross Domestic Product (GDP) of the country, inclusive of equitable access among the vulnerable of society.
- Protection of critical marine habitats through protected areas or other effective area based conservation measures.

With limited resources, UNDP can prioritise:

- Build capacity within the fisheries sector to assess the status of resource base (living marine resources);
- Investments in pre and postharvest fisheries to increase the value of fish and fish products inclusive of meeting phytosanitary standards throughout the fisheries value chain;
- In the midst of growing concern for energy and greenhouse gas linkages in climate change mitigation, initiatives towards a reduction in the dependency on fossil fuels and increase in renewable energy incentives.

With limited resources, the government can prioritise:

- The implementation of remedial measures, so as to facilitate the removal of the European Commission's identification of SVG as a "non-cooperating third country" in the fight against IUU fishing;
- Increasing fishing capacity and the introduction of appropriate fishing technologies. The focus of this assistance is the acquisition of vessels, appropriate fishing gear and the development of the skills of fisherfolk in their operations. It is anticipated that the improved vessel capacity and fishing technology will transform the daily operations of fisherfolk to sustainable commercial enterprises thereby facilitating increased productivity and aiding economic recovery
- Investments in pre and post-harvest fisheries to increase the value of fish and fish products inclusive of meeting phytosanitary standards throughout the fisheries value chain;
- Improving cooperative ventures between the public and private sectors (Public Private Partnerships) thus building on the expertise of each partner that best meets clearly defined public needs for services or infrastructure. This allows for the arrangement to provide public services whereby there is a transfer between partners of resources, risks and rewards. The risks are allocated to those best able to manage them and value is added to public services by using private sector skills and competencies.
- Introduction of an individual transferable quota management system for heavily exploited species can result in the sustainability of catches around an annual yield, and have the added benefit of long term biological sustainability

for species within the waters of Saint Vincent and the Grenadines. A compliance programme to allocate and monitor the quota system will also be necessary as without this holistic approach, a quota system can run into operational difficulties.

In respect to private sector investments in fisheries and the blue economy in St Vincent and the Grenadines, she indicated it's contribution to Gross Domestic Product is highly reliant on trade with outside markets. Establishing partnerships with the private sector can assist in addressing implementing relevant regulations gaps which traditional market states, such as the European Union and the United States of America, place on the Caribbean region. The private sector can also assist in finding new and previously unexplored markets for fish and fish products. It can further boost the economy via construction and infrastructure development. This not only limited to fisheries centres and markets which serve as a central location for the purchase of fish and fish products, but also access roads to these establishments and jetties which are used by vessels to offload products. Infrastructure development generates considerable local value-addition through the provision of local building materials and labour. Strategic interventions from the private sector can boost activities and supplement government initiatives. She answered that; "*Saint Vincent and the Grenadines' fisheries sector has grown significantly in recent times and this growth is driven by increased demands by mid-sized processing and marketing operators for seafood. This demand however will sooner rather than later far exceed the ability of the current fleet to supply. If that situation remains unresolved, the country can lose marketing opportunities to neighbouring islands such as Grenada and Barbados. Private sector investments can go into the upgrade boats, infrastructure, as well as fisher's capacity to effectively harvest fish and deliver quality catch to buyers.* "In Small Island Developing States and developing countries on a whole, post-harvest fisheries losses can be attributed to a number of factors. These include: poor handling processing methods that expose fish to contaminants, lack of proper storage facilities and poor/irregular transportation for fish and fish products. Private sector involvement and co-management in post-harvest initiatives addresses not only industry costs, but also the overall sustainable production along the supply chain, all the way to consumer's plates.

In respect to the UN and aid agencies, her suggestions were that with the current economic fallout from the COVID 19 coronavirus pandemic coupled with the adverse effects of the volcanic eruption, it is necessary to develop capacity of fisherfolk (in areas such as harvesting, processing and packaging) and re-outfit them with equipment necessary to restore their fishing operations. This includes improving awareness of and access to blue economy finance and investment mechanisms such as the proposed Framework. Shock-responsive social protection aims to manage the risks and impacts of shocks that usually affect a wide cross-section of the population all at once, but should also be able to reduce the disruption of shocks to livelihoods experienced at the individual and household levels. In dealing effectively with large-scale risk events, therefore, it is important that existing social protection programmes and their delivery mechanisms are organized in a manner that allows them to be able: to increase their services during periods of shock, and to work seamlessly and efficiently with other programmes that are targeting specific aspects of the shock response. In Saint Vincent and the Grenadines, it is important plans and partnerships among agencies and institutions concerned with assisting stakeholders within the Fishing Industry, have anticipatory actions that could reduce the impacts and hence the burden of response and recovery demands as well as actions that can adjust the emergency response in real time.

Priorities for the respective UN partner agencies reflected a continued focus on ecosystem (e.g. coral reef ecosystem) based management and building the capacity of the marine resource management agencies to assess the status of living marine resources such as improved surveys, education, data collection, pilot projects and marine protected areas/access to finance support. Safeguarding entire habitats are important in safeguarding potential spawning

grounds, nursery areas for juvenile fauna as well the various life stages of different commercially important organisms. Ecosystem based initiatives include increased research to inform management as well as on the ground initiatives such as increased surveillance and enforcement of marine conservation regulations (no spearfishing in marine conservation areas or use of prohibited fishing gears etc). Additionally, it could help facilitate support with investors and the private sector, given investments in pre and post-harvest fisheries to increase the value of fish and fish products inclusive of meeting phytosanitary standards throughout the fisheries value chain Although technology by itself cannot solve particular issues within the fishing industry, embracing new technology can be a catalyst for the transformation of fisheries practices and policies, especially in a Small Island Developing state such as Saint Vincent and the Grenadines, which is looking to keep up with the rest of the globe . Using a sustainable approach, technological innovations offer an opportunity to improve fisheries management practices, while empowering fishers to become more efficient and providing more information to consumers so that they can make more responsible seafood choices. If held. workshops should be formulated to including focused meetings and consultations with fisherfolk and other groups of key stakeholders to develop and evaluate the initiatives being put forward. With the onset of the Covid-19 pandemic, these can be one through an online format using any available virtual platforms.

Response XXX: Sunday 24th October 7.30 to 8.30 am, Investable Oceans.

This US based impact investor, also acts as an experienced advisor to several accelerators and incubators such as a 1000 Oceans Startups, Katapult Ocean and GEOSS Ocean Visions which all accept global applicants including from the three countries within this study. He is also conducting a detailed study in partnership with Duke University on the requirements of blue economy entrepreneurship globally, and so is well positioned to understand the sector. He also serves as an advisory member of the working group for the UNEPFI Blue Economy Finance Principles and related investor guidelines and an advisory member to Blue Finance and its blended finance approach to raising sustainable financing for Caribbean and global marine protected areas. He has also set up the Investable Oceans platform which provides numerous related resources to blue economy finance and investment, to aid the public and subscribers to understand this area and identify promising investment projects for greater exposure. As an independent investor, a networking connector to find other impact investors and to improve ocean financial literacy; he has expressed a willingness to further assist Barbados, Grenada and St Vincent and the Grenadines independently to access global markets and for its entrepreneurs to receive associated support.

He concedes the challenges of the inexperienced and uninitiated in accessing blue economy finance including for aspirant entrepreneurs, with multiple divergences in application processes and requirements from the Alaska Ocean Cluster to Sustainable Ocean Alliance. The challenge remains that many of these accelerators, incubators and financiers are in themselves, continuously evolving in their changes and requirements, complicating intended applications from individual entrepreneurs, businesses and governments. In selecting entrepreneurs and companies more likely to receive investment and support; aside from sound financials and the chance to make a clear profit with a visibly effective market and exit strategy, he argues the need to consider management, the nature of the team involved, the drive or ambition of the individuals concerned; is it scalable, replicable by competitor rivals and ca it be protected? Another question is how innovative is it? What problems does the product, service or investment solve? Those who succeed are far more likely to listen to and have access to professional advice. However more funders seek to establish personal relationships beyond just extending the capital itself. Therefore engagement efforts to personally reach out and establish connections initially are far more likely to prevail. From the perspective of this sector towards government, tangible commitments to blue economy specific investments and funding frameworks with a clear

commitment to the SDG's, the UNEPFI Blue Economy Finance Principles and concrete investment indicators, projects and instruments, would provide further reassurance.

He expressed a particular interest in any related financing instruments or mechanisms such as blue bonds, that Barbados, Grenada and St Vincent and the Grenadines might be investigating. There is a market gap around the size of investments that Barbados's government might be looking for around $10-50,000,000 for blue bonds. This may only be limited to the interest of comparatively few subscribers such as in Asia or the Seychelles, including private philanthropy or multilateral organisations before even reaching the commercial market. Many small scale investments are prepared to look at below that, whilst larger one's are primarily interested in impact scale of a minimum of $50-100,000 to attract the large scale investments. The blue carbon market however, offers opportunities for the Eastern Caribbean, replanting mangroves, coral reefs and other sources, as more companies such as Google and Microsoft look towards seeking to verify their pledges towards global carbon neutrality. He is not so familiar with the Caribbean but imagines the obvious areas of opportunity also include fisheries, aquaculture, tourism and ocean renewable energy. These would have to be backed up with corresponding data systems that focus more on ecological survival and prosperity in the long term. This would include quantifying impact, to ensure investors felt they were contributing towards their sustainability agenda. It would have to be especially sensitive to reassuring investors over market, credit, reputational, environmental, climate and sovereign risk issues to entice major investors or the commercial finance sector. A clear investment framework, incentives, protection and respect for private property rights and past history with the finance sector are also paramount if these three countries cited under this consultancy are especially serious. He also noted the challenge of traditional financing institutions, microfinance and entrepreneur based incubators/accelerators to achieve this, making it even more conditional upon governments and instruments such as the National Oceans Coordinating Committees to ensure adequate, timely access by external parties to the information contained within data systems and generally related to the blue economy.

His initiative under Investable Oceans seeks to simplify the process of accessing blue finance more globally through creating a portal to connect associated investors, with projects. Therefore it could potentially aid not just government, bu private businesses and individuals within the three countries to gain additional visibility and market exposure. He remains jubilant over the forthcoming prospects for blue finance not just in the Caribbean but globally, as signalled through the growing voluntary independent expressions of interest in the various areas in which he is engaged in including platform subscribers. In his investments, he is always looking out for the best practises and selection criteria as well as the methods and impact indicators of others, rather than being prescriptive. The same applies to relying upon other entities such as Schmidt Marine, World Economic Forum and the various accelerator/incubators and investors themselves for supporting promising sustainable marine start-ups and companies. Although currently free, the Investable Oceans platform is looking at receiving donors as well as a sponsorship/subscriber based model given the time opportunity costs incurred in operating and supporting investors. At the moment, only 6-24 funds such as Oceans 14 and Blue Oceans Partners are reckoned to have major experience and the development of guidelines, criteria, actual projects, financial instruments and impact indicators is still ongoing.

Very few countries actually have a blue finance and investment framework strategy in his perspective, it still remains mostly up to the independent resolve of the respective individual private sector firms. Aside from the funds, this might mean interacting with private family and traditional funders, with far less direct experience as to the specific priorities, risks and returns associated with the sector. These can be far opaquer as to their specific rationale and criteria used to make decisions, more reticent to reveal their track record successes and failures. Reasons previous entrepreneurs and investable projects fail include breakdown in relationships -communication is cardinal and running out of money -

not paying attention to developing sustainable sources of finance. Climate change and the COVID19 pandemic has also highlighted the need to consider contingency reserves and factor in disruption risks that may emerge. At other times, these enterprises fail in seeking to expand into new markets or geographic regions too rapidly or in committing to products, services and areas that lack sufficient commercial appeal, to make them viable to operate.

His thoughts are that future of blue finance is not only expected to take into account climate change, marine pollution and other risks to the marine environment, but pressures and interest will raise concern about equity, justice and social dimensions to sustainable development, which has yet to be fully investigated with equivalent indicators. Current emphasis where existent; is slanted towards the economic/financial, the technical/administrative (i.e. do systems, resources, people etc exist or not?) or the ecological. More relationships would have to be generated and sustained on a much broader timescale and those in the Caribbean might have to accept it will be a long term process. He also values the need for investments to be accompanied by an active government approach (including the possible Blue Economy Implementing Committee or ministry equivalent) to devise a marketing, communication, media and outreach strategy. Podcasts to meet experts, local NGO's and businesses could also be a radical technique for these Caribbean states to explore apart from setting up a blue economy themed electronic newsletter that gets circulated to interested parties. This might include more regular engagement sessions, progress reports, documentaries and social media along with physical and virtual events. More globally, the growing awareness of the blue economy via media releases such as My Octopus Teacher, Seaspiracy, David Attenborough's Blue Planet series and others; are seeking to awaken not just investors but more of the public and businesses into being committed to more sustainable oceans, the need to fund and support it. Aside from these, he felt insufficiently conscious of local Caribbean conditions to cite specific examples of projects or recommendations relating to finance, coordination, governance, data collecting, monitoring and evaluation.

Response XXXI, Monday 25th October, 2021, IUCN Barbados and Eastern Caribbean Representative

This nongovernmental organisation female participant has 18 years' experience in natural resource management/ marine conservation, environmental education and protected areas management. She is involved in the BIOPAMA programme for the IUCN ORMACC. Barbados, Grenada and St. Vincent and the Grenadines are beneficiary countries of BIOPAMA, which supports improved management and governance of protected and conserved areas through better use and monitoring of data and information and capacity development. Specific support that has been provided so far include helping sites identify, through protected area management effectiveness assessments, how well they are being managed and what improvements in management, monitoring, planning are required. Through the Caribbean Protected Areas Gateway, data and information management training has occurred and additional capacity enhancement opportunities are being looked at for implementation in the next year. Also, IUCN through BIOPAMA is contributing to the elaboration of a full analysis on the state of protected and conserved areas in the wider Caribbean Region in cooperation with the University of the West Indies, to be launched soon.

She perceived herself to be moderately aware of the blue/oceans economy and well/very well aware of the coastal ecosystems. Her early work focused on coastal management and research so she is familiar with the related the Caribbean ecosystems. Although unaware of specific funding for blue economy entrepreneurship in the region but she is aware of organisations that provide or channel support in some of these areas e.g. TNC, Caribbean Biodiversity Fund, CANARI. Some of them are IUCN Members. However she had no information about their screening/application process and related indicators. She found barriers existed around local blue economy development. "*I think the main challenges would be around human capacity and existing enabling environments to support the implementation of the*

blue economy nationally and regionally. The technical persons that would lead implementation, especially in the government agencies, are usually "swamped" and have a difficult time balancing their many responsibilities. Enabling environments, i.e. legislation, understanding/buy-in at all levels of society, are usually not in place to facilitate the easy transition to and implementation of new concepts such as the blue economy. Also, mainstreaming blue economy practices and approach in non-environmental organizations is still a challenge, in particular with those sectors that make use of the coastal and marine ecosystems (e.g. tourism)."

Although no other specific blue economy projects or investment opportunities were noted, she identified several activities in relation to marine protected areas and conservation. During 2016-2018, activities funded by KfW /CCCCC–IUCN provided technical assistance and allowed the preparation and execution of small projects for Local Adaptation Measures (LAMs). These were granted to governmental, local/national non-governmental organizations and Universities in Grenada, St. Lucia, St. Vincent & the Grenadines and Jamaica. Investments were directed toward: better protected coastline, through restoration, infrastructure and climate change adaptation practices; technical assessments of key habitats and species for decision making on their management and conservation; equipment to enable monitoring of variables contributing to ecosystem and species population health. This included increased capacities and surveillance through technical training of Marine Protected Areas (MPA) rangers and stakeholders and more efficient patrolling using drones and boats. It extended to developed or updated planning instruments including MPA management and climate change adaptation plan, with aims to construct tourism and visitation infrastructure contributing to local income generation and awareness raising. No examples of failed projects were cited.

IUCN's contribution is currently low in the consultancy's three countries as the support being provided is primarily through the BIOPAMA programme which has a specific focus and scope of work. Her/IUCN's main concerns to Caribbean marine ecosystems and the blue economy include pollution, oil spills, climate change, marine biodiversity, coastal erosion, development, sand and seabed mining, population and resource pressure, illegal and unregulated fishing plus alien/invasive species to be threats. "*As Small Island Developing States are highly vulnerable to the impacts of climate change (increased intensity of natural disasters, sea level rise, etc); the type of coastal development (usually large hotels, marinas, etc) usually has negative impacts/alters the landscape and neighbouring coastal/marine ecosystems."* Her main recommendation for the UNDP and governments was the need to improve and strengthen capacities on both technical and managerial management of investment from local organizations, alerting them to blue finance opportunities and assisting them to prepare their own priority area and project needs.

Response XXXII Monday 25th October 2021 (Interview), Thomas Greer of Aquanauts Grenada/Grand Anse Artificial Reef Project)

This Grenadian dive tourism operator and family business since 2020, is involved in a number of blue economy initiatives with a growing fascination for the blue economy. He is also the pioneer of HydroSoul which has a number of different initiatives seeking blue economy finance and support. Examples include a five year project promoting local entrepreneurs through access to the digital economy, especially with marine/coastal environment and context along with getting youth in schools and communities to be more interested in swimming and diving. This would include directly working with primary and secondary schools. This is considered valuable to reducing fear of the oceans, which he considers locally a major hurdle towards developing appreciation, interest and support for the blue economy. He is also looking at funding and support for his projects on mangrove replanting and conservation, especially around True Blue Bay Resort and other conspicuous tourism areas. He is also trialling a project which simultaneously aims to grow elkhorn and staghorn corals but also deploys the artificial structures or reef balls to fabricate an artificial reef project off Grand Anse Beach. He also serves as President of the Grenada Scuba Divers Association.

In relation to report 2, he is especially curious to find out a financial framework that will simply awareness over funding sources and enhance accessibility. This would link not only to supporting local marine conservation efforts to be upscaled to greater areas but be able to channel resources towards sustainable financing of protected areas and in encouraging local entrepreneurship. He is looking to expand collecting ocean ecosystem and fisheries data through mobile apps and other digital system refinements. This would make it easier to not only monitor health, resilience and other related information for addressing threats and attracting investments but also could be modified to identify more accurate eco-friendly operators such as True Blue and Spice Isle and projects supporting ecosystem conservation. At the moment, he is trying to deal with the COVID19 pandemic and travel restrictions that have curbed his business plans, having not received any external funding. Normally the dive business would involve 13 employees and 3 boats, with over 380 certifications.

Aside from his own work and prioritising the enforcement and expansion of marine protected areas in Grenada, other opportunities for UNDP, governments, external aid agencies and donors to possibly consider investing in include the conservation, ocean literacy and livelihood work undertaken by Sustainable Grenadines and the Grenada Conservation Fund. There is also the admirable work undertaken on the northern side by Ocean Spirits to protect the leatherback turtle from stolen eggs and consumption, given only 1 in a thousand on average, manage to survive. They operate community environment and education programmes but are highly vulnerable to fluctuating donations and tourism numbers as their primary source of income. Into the future he is encouraged by the recent employment of a more environment minded and experienced head of the local tourism ministry as perhaps offering greater political/administrative support to prioritise sustainable ocean sector based initiatives. There are a series of events planned from May 2022 onwards including Conservation and Dive Festivals, which will seek to showcase these marine protected areas and biomes, to inspire more global interest in their conservation and funding their survival. He will continue aiming to promote more socially conscience based eco-tourism. Into the future he earnestly hopes for investment and funded solutions favouring ocean renewable energy, efforts to reduce burning of fossil fuels and decarbonisation and addressing the issues of excess refuse been generated and deposited in landfills, rather than favouring a circular economy based recycling facility.

Response XXXIII, Tuesday 26th October, (Survey) Canadian High Commission Representative

This female diplomatic representative of the Canadian government has a Master's degree, aged 45-50. The Canadian government has been involved in directly funding and supporting a number of initiatives related to the blue economy such as in Table 3.1 below so she is moderately aware of the sector and related funding sources. Additionally, she affirmed Of note is the support to COMPETE Caribbean and the ProBlue Fund at the World Bank. Other climate change and disaster risk management programming may be of relevance to development of a sustainable blue/green economy depending on what countries choose to do with those projects. For example, EnGenDER with the UNDP is strengthening sector National Adaptation Plans and some countries have chosen to look at agriculture and fisheries. Each facility would have different geographical scope and eligibility, but many are limited to overseas development aid eligible countries, which means that Barbados may be not be eligible in certain situations but Grenada and St Vincent and the Grenadines could be. However for programmes such as Compete Caribbean, applicants from all three countries are relevant. Each project would have a different lead project officer who would be able to address specific questions. Or specifics can be obtained directly from the implementing partner. In terms of access to sustainable and blue economy finance, her assessment was the region on the whole struggles with a small public service in key sectors such as Ministry of Environment and limited cross-sectoral development planning. High levels of debt also prevent

some countries accessing finance and/or investing in new directions. Countries who are not overseas development aid eligible are reluctant to take on new loans, even when highly concessional.

Table 3.1: Illustrative List of Canadian Government Supported Initiatives with Blue Economy Element in the Caribbean (CARICOM) Region

#	Title (Implementer)	Blue Economy Activities	Budget	Duration	Recipient Countries
1	**COMPETE** (IADB)	Five 'Blue-Tech Challenge' proposals selected to initiate project design Bahamas - "*Marpol Port Reception Facility*" – Clean Marine Group Limited Barbados - "*Totally Traceable Tuna*" – Ten Habitat Belize -"*Market-based Incentives for Sustainable Fishing*" – Oceana Haiti - "*Ayiti Blue Ocean Plastics Solution*" – Environmental Cleaning Solutions S.A. and Pan American Development Foundation St. Lucia - "*Convert Sargassum Seaweed from Problem to Industry" – Algas Organics*" Technical support to Belize Shrimp Growers Association: Previous support under COMPETE 1 ($20M, 2010-2017). Helped 9/10 Belizean shrimp farms achieve Aquaculture Shrimp certification, allowing it to export to high-value markets, including Canada. Increased exports from $20M to $45M, and led to 300 jobs being created. Support to Jamaica's Ornamental Fish Cluster. Prior to COMPETE's involvement, ornamental fish was sold mostly to the local market, now it is one of the top 5 agricultural exports in Jamaica	$10,000,000	2018-2022	All CARICOM
2	**Canada-Caribbean Disaster Risk Management Fund** (Various)	Two community-level micro-projects involved the Blue Economy Jamaica – Mangrove replanting in Portland Bight, CAD$15,780, Caribbean Coastal Area Management Foundation. Suriname – Sediment trapping for coastal mangrove restoration, CAD$96,206, University of Suriname.	$3,000,000	2007-2020	Jamaica Suriname
3	**CARICOM Education for Employment** (Colleges and Institutes Canada - CICAN)	Closed in March 2019. Built capacity of Caribbean institutions in Technical, Vocational Education and Training (TVET) through partnerships with Canadian universities. *Some aspects of project had blue economy elements* Antigua – 101 trainees student in Yacht Repair courses "*The program was a true turning point in my life. Before this program, I never pictured myself being able to work on a boat or knowing how to do the things I am now able to do. No*	$20,000,000	2011-2019	Antigua Jamaica Dominica Suriname Grenada Guyana

#	Title (Implementer)	Blue Economy Activities	Budget	Duration	Recipient Countries
		one in my family or friends has ever worked in Yacht Maintenance before." - Kevin Williams, Pre- Technology Graduate, Antigua & Barbuda St. Lucia – 97 graduates of pre-technology course in sailing/marine industry			
4	**Skills to Access the Green Economy** (CICAN)	Successor to above C-EFE project. New project is just starting so there could be opportunity for engagement on what skills might be needed to in region to support a blue economy (E.G Guyana's point about the lack of Marine Biologists) This initiative will offer training to more than 1000 students, including in the areas of water and coastal management and ecotourism.	$15,000,000	2018-2022	Belize Jamaica Dominica St. Lucia Grenada Guyana
5	**Support to the Energy Sector in the Caribbean** (CDB)	This fund remains open to proposals for energy-related Blue Economy initiatives. Sponsored CDB-organized Caribbean Blue Economy Event at CREF 2018 Provided TA to advance Sea Water Air Conditioning	$5,000,000	2016-2020	All CDB borrowing member countries
6	**Eco-Micro** (IDB)	TA facility established to facilitate green finance access for MSME's, including blue-economy focused ones. Belize - $1.7M to Belize Credit Union to offer adaptation finance to agriculture and fisheries sector Guyana – Institute of Private Enterprise Development – Will develop green loan products Jamaica – Support Jamaica's largest Credit Union, COK Sodality, to pilot mitigation finance	$7,200,000	2015-2020	ALL CARICOM members
7	**Climate Change Action for Gender-Sensitive Resilience** (UNDP)	Will help countries develop their National Action Plans (NAPs) and Nationally Appropriate Mitigation Action (NAMA), which include blue economy elements. A second component of the project will help build capacity to develop project proposals to access climate finance from funds such as the Green Climate Fund (GCF) and Global Environmental Facility (GEF). Antigua – Canada's contribution supported the participation of Antigua & Barbuda at a May 15, workshop in SVG on developing concept notes to access climate financing.	$15,000,000	2018-2022	Antigua Guyana Belize Jamaica Dominica St. Lucia Grenada St. Vincent Suriname
8	**Cooperation for Climate Change Adaptation and Resilience in the Caribbean** (FAO)	This project will help Caribbean countries to access GCF and GEF funds through supporting the development of project proposals for submission.	$350,000	2019-2020	Antigua Guyana Belize Jamaica Dominica St. Lucia Grenada St. Vincent

#	Title (Implementer)	Blue Economy Activities	Budget	Duration	Recipient Countries
9	**Regional Advancement of Statistics in the Caribbean** (StatsCan)	This project improves the ability of CARICOM National Statistics Offices to develop and provide solid social and economic statistics, including on measuring the blue economy.	$20,000,000	2014-2022	All CARICOM
10	**Support to SBEC**	Canada contributed to a UNDP fund to support the participation of over 650 delegates, including from the Caribbean. In the lead-up to the Conference, William Crosbie, Canada's Ambassador for the Sustainable Blue Economy Conference, visited Trinidad & Tobago, Guyana, Jamaica and Belize, seeking input and encouraging participation.	$2,000,000 (US)	2018	All CARICOM
11	**Green Climate Fund (GCF)**	Canada provided $300M to the GCF since 2015-2016	$300,000		Global
12	**Global Environmental Facility (GEF)**	Canada pledged $228M to the 7th replenishment of the GEF	$228,000,000		Global
13	**ProBlue (WB)**	Canada contributed $65 million for plastic waste management and infrastructure in developing countries through the World Bank's PROBLUE Fund in 2018	$65,000,000		Global

Source: Canadian Government/Respondent October 2021

She did not specifically refer to any examples of project successes or failures. In regards to financing the blue economy, she stated: "*The environmental sustainability of investments in the blue space must be prioritised. Poor decisions taken on economic grounds alone can have long-lasting implications for coastal protection and ecosystem survival that underpins many other critical sectors, including fisheries and tourism*." As a respondent she had no comments to share regarding the specific aspects of improving existing government/organisational institutional capacity is to coordinate and implement the blue/ocean economy. Nor did she share feedback concerning improving government communication, outreach and engagement with other stakeholders including any chances of a workshop. She chose not to answer about any possible changes to monitoring and evaluation frameworks and any related data necessary to support such a system. No other recommendations for government, UNDP or other stakeholders were offered. She was encouraged by the concept of developing a local country specific and regional Caribbean blue economy finance and investment framework. Her main insightful suggestion was the necessity of an institutional capacity analysis to consider any resources, policies and other factors required to actually implement the blue economy. It was valued as a critical step and should lead to the relevant recommendations being made to include the necessary human resources to support implementation. And the governance structures needed to be efficient and effective.

Response XXXIV, Tuesday 26th October 2021, 1015-11:22 am, (Interview) Barbados Time, , UK High Commission Representative Barbados

This UK High Commission Representative has 13 years working experience related to the marine/environmental sectors having previously worked with entities such as The Nature Conservancy in the Caribbean before three years in the Foreign and Commonwealth Office/Department of International Development. She covers a number of divergent UK blue economy, climate change, sustainability and environment aid related projects and initiatives, including, liaison

under the Commonwealth Marine Economies Programme and supporting the United Kingdom Department of the Environment to investigate setting up related blue economy policy initiatives. This excludes a primary role in helping to set up the Caribbean elements of the Blue Planet Fund which will have ring fenced 500,000,000 pounds towards various areas of the blue economy including tourism, fisheries, aquaculture, marine conservation and the circular economy. This process will be open to the three countries in this study. She also considers herself well aware having sat as a funding advisory member on the board of the UNDP Accelerator Lab for the Blue Economy and its respective rounds of entrepreneurship incubation, mentorship and seed capital support.

However, the Blue Planet Fund is still only in conceptual design phase, projected to be launched and announced at the upcoming COP26. It will be open to Caribbean countries including the 3 in this report but has yet to determine which instruments, selection criteria, application processes and indicators to track progress will be chosen. Her expressed hope was that marine protected areas could be extended and possibly considered incorporating into sustainable financing models, receiving necessary guidance and support to ensure processes existed that resonated with funder impact and performance indicators. She referenced the example of the Nature Conservancy as an NGO with Caribbean expertise, with a successful track record. A particular marine conservation model success was the reference to the Tobago Cays National Marine Park. She was encouraged by the existence of Barbados's Ministry of Maritime Affairs and the Blue Economy and hoped Grenada and St Vincent and the Grenadines especially followed suit in according the blue economy such prominence in government through the existence of directly focused structures but considered that they needed more implementing resources, to be extended and more prominent involvement in blue economy decision making.

Previous involvement in the UNDP Accelerator Lab expressed favourable support to its design of incubating blue economy entrepreneurs. However, the scope appeared to be Barbados dominant in terms of the applicants favoured rather than the other Eastern Caribbean nations. Given how popular and oversubscribed it was, she earnestly recommended that UNDP could prioritise securing an extension of funding and support. There still appears a shortage of entrepreneurship based funding, other then the Inter-American Development Bank's Compete Caribbean. Concern was also expressed as to its current status as she had not received any communication updates over the past year as to how operational it was or how effective the initially selected entrepreneurs were progressing. Her recommendations for both UNDP and the government centred significantly around aspects of communication, outreach and engagement. There should be people with designated responsibilities to undertake minutes, arrange invitations and convene events regularly, providing updated status reports with consistent formatting that could be utilised as the basis of monitoring and evaluation. In the interest of transparency and accountability, not just funders but the public and various concerned/interested parties are viewed as being vital to be informed regarding the blue economy. She contemplated that the existing system lacking a formal structure, did not incentivise stakeholders to actually progress the blue economy, to fund or support it, as they could not see direct outcomes as a result of heir involvement, as demotivating. Consequences needed to exist if progress stalled or failed, otherwise the funders would be even more disinclined to support further funding. Seeing success in the blue economy would inspire more students, activists, members of the public, businesses, financiers, entrepreneurs and individuals to be suitably committed. Therefore the presence of an electronic newsletter, dedicated social media posts, regular WhatsApp groups and website updates by a specific communication and marketing officer would improve common awareness and understanding to formulate suitable responses in a user friendly format. She also advised the need to recruit specialist blue finance but also knowledge management specialists.

Her concern with blue economy governance and implementation is that it remains very fragmented with sectors such as energy, offshore oil and gas; maritime security and surveillance and others are not really planning jointly their approach to ocean governance and the blue economy. These also need to share their data availability into a coordinated database to ascertain trends, risks and future planning, policy, funding and decision making priorities continuously. Funders too and donor aid agencies would benefit from a Committee structure and Technical Secretariat allowing for additional meetings and workshops so that they could avoid overlap of projects, selecting initiatives and entrepreneurs that were not being supported by others. Improved communication and cooperative partnerships would be beneficial to external parties and internal government entities. She also considered that UNDP and its host partners under the SDG Fund could seek to include and align themselves with other structures such as UNECLAC, the World Food Programme, UN Women and other entities, to be more aligned to the social element of the blue economy. It could offer greater chances of mainstreaming, youth, gender and other social issues into facilitating the blue economy and SDG's simultaneously.

Climate change and disaster risk reduction, resilience and vulnerability also matter, given the COVID19 pandemic and other uncertainty, which alternative development plans such as Grenada's Blue Growth Plan and other policies are counselled to implement. Into the future, she cautioned that due to funding cuts and realignment of priorities towards a COVID19 pandemic, many sources of traditional philanthropy are being highly curbed in their budgets. For example, the Commonwealth Marine Economies Programme for Grenada and St Vincent and the Grenadines ended their existing role in March 2021 but are looking to develop viable financial models under a second phase. It will be rebranded as the Commonwealth Sustainable Blue Economies Programme at COP26. Therefore, pressure exists to maximise the impact of existing investments and aid, especially through the formation of metrics and indicators. Her finding was that the private sector had to be involved far more and that any proposal needed to give serious consideration to ensuring the question of sustainable financing. She concluded by earnestly expressing a willingness to consider working with the UN agencies and respective governments with these initiatives, especially in regard to the Blue Planet Fund but also continuing to support entrepreneurs. The UK government are also looking to support other funding such as the World Bank Pro-Blue framework and the Ocean Risk and Resilience Action Alliance's funding and Action Plan.

Response XXXV, Tuesday 26th October, 2021, 11:22 to 12:30 pm, (Interview), Food and Agricultural Organisation Caribbean Representative.

This FAO representative is currently engaged in coordinating several fisheries and aquaculture projects within the Caribbean region. Her corresponding blue economy awareness is very high. As part of this process, they are looking to develop their own blue economy investment and financial framework to support fisheries and aquaculture specifically in the Caribbean, rather than any other blue economy sector. However, she was not in a position to share any related material concerning findings, best practises and projects, screening criteria, framework components, impact indicators and other criteria, as she has only within the past week, received the initial consultancy draft report. She also has been actively involved in seeking to provide technical fisheries and aquaculture advice in screening technical proposals under the InterAmerican Development Bank's efforts to establish Caribbean blue economy clusters and partnerships. These clusters aim to develop not only projects but overall markets and their access. The FAO are also looking to support developing related blue economy strategies to overcome any existing policy gaps. Her efforts also include looking at improving fisheries resilience to climate change under the CC4Fish initiative with a initial budget for US $5,700,000 and improving access to social security protection and insurance.

She has identified the need to encourage greater awareness of blue economy finance opportunities to people, so they have a fairer chance to benefit. The interviewee argued the need for a Blue Economy Investment and Finance

Framework that would overcome the mismatch between divergent initiatives, projects, blue economy sectors, regions and application processes. It therefore needs clear communication and articulation to guide stakeholders as to the sources, the application processes and the sector based opportunities. This framework should result in a subsequent pipeline of investable market related proposals, to encourage capital inflows and commitments. The dilemma remains adapting any such framework to the realities and constraints of small island states, whether developing or not. The FAO primarily serve as grant funders not loans so they have been experiencing challenges as to how to adapt their scope of responsibility, to be an enabling, facilitating catalyst in providing grants. This in addition to their active interest and functions in providing training, awareness, capacity building, scientific expertise and information to the governments of Barbados, Grenada, St Vincent and the Grenadines. One way they are looking to provide grants similar to commercial loans and credits, is to move towards insisting upon set criteria aligned to attaining certain metrics or impact indicators i.e. the number of beneficiaries trained, proportion of area protected and other considerations. The FAO are also working to develop climate resilient livelihoods and microprojects such as aquaponics, seamoss and conch farming in St Vincent and the Grenadines and Grenada in partnership with locals. Currently they are seeking measures that factor in the social dimensions such as changes in risk perceptions and behaviour of individuals, businesses, organisations and communities, especially in relation to climate change and various ocean or environment related issues. In identifying the need for baseline data and recording any alterations, the FAO are seeking to improve local data management and recording capacity, including training, access to systems and recording technology, enhancing resilience and foreknowledge of any potential disruption risks. Specific guidelines for which she has interest in linking to commonly agreed impact indicators include the SDGs and UNEPFI Principles.

She is broadly in favour of the concept of a blue economy champion and committee to establish not only marketable projects but identify policies, agencies, risks and other barriers to blue economy finance, investment and prosperity. For example, in all three countries clear property rights exist only for land based projects. This complicates ownership rights and security of tenure/investment as assets, whether developing an offshore tourism operation, mariculture farm or ocean energy project. Permission for a long term lease could be conditional upon adherence to proper ocean ecological stewardship and sustainable blue economy principles. She recommends that the equivalent of the National Ocean Coordinating Committee and the associated Ministries/related investment frameworks and guidelines incorporate this area. Her principal suggestion is to advise these governments and the UN host partners investigate improving upon awareness and other technical capacity constraints traditionally observed in accessing and scaling up sustainable finance. This includes improving upon access to centralised, easily accessible information; especially in regards to plans, policies, trends, risks and developments related to the blue economy. The FAO is further investigating improving fisheries data collection systems through the support of mobile based Apps in Grenada and other locations after piloting in Trinidad and Tobago. Processes focus more on the technical, ecological and basic economic but could be improved to incorporate the oceans, climate change and other risks simultaneously. A need exists to not only improve access to data and the quality of that data but also improving the associated analysis capacity, to filter the most relevant information. More existing internal databases could be connected to one centralised Cloud and repository, to streamline various queries and blue economy direct needs. No further solutions or advice for UNDP, governments and other stakeholders was offered.

Response XXXVI: 29 October 2021 9:30 to 10:30 am (Interview), Caribbean Biodiversity Fund Representative

The Caribbean Biodiversity Fund was established in 2012, derived from under the Caribbean Compete Initiative Challenge. Mostly funded by Germany, Canada and a handful of developed countries now currently offers financing support to establish national level conservation trust funds in respective countries, currently at 9 including the 3

countries in this study. These have been traditionally focused on terrestrial conservation, biodiversity and ecosystem based approaches in their selection guidance. However, the Fund is in the process of developing its own ocean/blue economy financing framework or Blue-Fin initiative, currently under conceptual note stage. They would therefore find it especially helpful to have access to the respective Framework developed under this consultancy as a concept template and example of best practise to emulate. At this point, no elements of their framework were sufficiently developed for the respondent to share but it may offer another valuable source of future guidance. Third, they are seeking to establish a parallel funding process for the circular economy, given the recurrent costs to marine environments or plastic and other pollution.

She answered that her vision of a framework should be to assist aid agencies and others to understand the various sources and types of funding, how to design, implement and monitor/record progress, directly related to the oceans/marine environment. UNEPFI's Blue Economy Finance Principles can also offer some guidance. Again she mirrored other respondents in needing to move away from a grant based philanthropy model to one which created sustainable financing mechanisms for marine protected areas, given funding constraints and the fact that most funders seek to keep changing their interests and wish to intervene in new projects, rather then appreciating the value of needing to retain continuously generated income. With the Organisation of Eastern Caribbean States the Fund is researching the potential lucrative opportunities of the blue biotrade, with biotechnology, aquaculture and sustainable fisheries, especially for the conch sector in Grenada and St Vincent and the Grenadines, sargassum seaweed in Barbados and elsewhere. The implementors of this blue economy may also need to see if species and sector specific value chains and financing mechanisms can be directly linked to the respective social, ecological and economic indicators that have been recommended not just by the experiences and respondents of this one. Into the future she hopes to ensure support towards the autonomous funding of all 37 Caribbean countries and autonomous territories. This includes not just passing frameworks but moving beyond "paper parks) with funds clearly allocated to enforcement, pooling resources and expertise where necessary. Linking to more stakeholders and providing physical support; can serve as the basis for attracting more diverse sources of funding.

There remain coordination challenges, which she frames in the nature of how the respective national ministries and Ocean Coordinating Committees will respond to issues of investment, ocean governance, research, training, risk response and opportunity. From experience, she found that few of the 37 respective Caribbean nations directly engaged with each other on direct blue economy, conservation and transboundary risk issues. There need to develop effective communication and interaction processes could be fair more recognised. Her inclinations were also for the respective state entities in each nation to consider just how frequent such processes should be, who should be involved and whether in addition to informing stakeholders about the blue economy; it would be tactful to share them with designated counterparts in neighbouring Caribbean nations. According to her, the value of the coordinating committee is that it can serve as an invaluable link to those comparatively few specialists in the ocean/blue economy space if regularly constituted. Additionally, she has observed that not only funders looking for new chances to enrich themselves, whilst serving as effective marketing plays; but more of the Caribbean private sector such as shipping and fishing companies are starting to gradually express interest.

Her prime recommendation is that many of the various conservation funds are better off with having some form of government minority representation and level of contact; but should be mostly autonomous as an nongovernment organisation. The greater the freedom and flexibility to operate professionally, the more likely they are to succeed. Recognising the challenges these funds can have in designing sustainable sources, she emphasises that without being insistently limited and prescriptive in pushing a preferred approach, the Caribbean Biodiversity Fund has aimed to help

not only with the actual funding itself but even more guidance in response to project management. At present they are looking at Dominica and Cuba. They have also fostered the growth of a regional Caribbean and global network of protected areas and conservation endowment funds, to meet periodically to exchange information, best practises, information and a viable funding source strategy. This may include seeking to persuade funding and investment to be more aligned to the needs and priorities of other applicants.

Response XXXVII. 11 November 2021 (Survey), Blue Finance Representative

The Blue Finance female representative has around 30 years' experience, specialising in coral reef ecology and MPA management with a PhD in progress. She therefore offers very high degree of awareness and experience in the sector. The private organisation Blue Finance she works for support and develop projects aimed at producing revenue at MPAs in the Caribbean, East Africa and Southeast Asia. They focus on MPAs that can generate revenue for self-sufficiency. Our criteria is based on a set of certain indicators, without being more explicit as to what those indicators might be. The main challenges she has encountered are primarily psychological, revolving around people including civil servant egos and their interest in being obstructive, rigid, conservative approaches unable to embrace ideas "out of the box," and sheer challenges with government apathy and inertia or decision making paralysis.

Her experience has led her to discover many examples of successful blended finance for the blue economy, and funding conservation and marine protected areas. Conversely, she has noted many examples of poor investment decisions and project failures, mostly linked to reliance on grant and public funding, although she chose not to furnish case studies. She greatly believed in impact investment as the future of her sector. She classifies a successful MPA or project not only in terms of actual applied for blue finance secured, released and available but the actual victory of the project attaining its objectives. For the reasons alluded to above, she remains not very confident as to Caribbean government interest and institutional capacity to implement the blue economy, where she has personally observed it. Impact investing has led her to be fairly aware of monitoring and evaluation processes. She is highly in favour of civil servants attending more sessions on blue economy awareness -the risks, the opportunities -but also the types of finance and what investors are looking for. Moving forward, her main concern as a blue finance and MPA specialist was the need for a review such as this one and proposed Blue Economy Finance and Investment Framework as to quote: "*We don't know enough about investment opportunities and how to structure and access funds for the blue economy."*

Response XXXVIII: 29 November 2021 (Survey), St Vincent and Grenadines Sustainable Development Unit Representative

This Sustainable Development Unit female representative in her mid-30's offers a Master's Degree in environmental management and sustainable development. She considers herself very well aware of the local blue/oceans economy and ecosystem. She expressed some awareness of the 2020 National Ocean Policy and Strategic Action Plan, and the Unleashing the Blue Economy in the Caribbean discussion paper but not the Draft Maritime Economies Report - Commonwealth Marine Economies Programme, 2013 National Ocean Policy and Strategic Action Plan and first Blue Economy UNDP consultancy report by McCue 2021. Currently she is part of the National Ocean Coordinating Committee for St Vincent and the Grenadines, which she indicates meets quarterly. No indication of confirming evidence for the existence of the committee was provided however, via examples of reports, plans, projects, budgets, initiatives etc. Her suggestions for improving the existing coordination of the state's ocean governance is to advise formulating a Blue Economy Sub-Committee. It would also improve focus if both the Committee and the Sub-Committee

had their legal and operational mandates clarified. She indicated the government makes some effort towards greater representivity and inclusion of others in communication and participation as NGOs and Private Sector representatives serve on the committee. She proposed the need for a budget for communications and public awareness campaigns.

She is not personally familiar with any blue, climate, sustainable or circular economy related finance. Her priorities for developing the local blue economy in St Vincent and the Grenadines include sustainable fisheries (including aquaculture), blue/eco-tourism, waste management (especially Waste to Energy) and sargassum utilization. In the future she hoped that: "*The Blue Economy either has the potential to lead to stronger, more robust environmental governance or 'green washing', where there is increased extraction of marine resources but limited attention to the environmental impacts. It depends to some extent on regional collaboration to prevent a 'race to the bottom' in terms of environmental regulation on key sectors (e.g. cruising, hotels, fishing, etc.).*" Pollution, oil spills, climate change, coastal development, population and resource pressures, IUU fisheries, alien and invasive species along with maritime safety and security endanger securing this blue economy. The main challenges to accessing finance include the following:

- Private sector investment is still limited
- Weak environmental legislation does not promote internalisation of environmental costs
- High risk environment for investors

Moving forward, it was conceded that currently monitoring and evaluation is somewhat weak for St Vincent and the Grenadines. She alluded to a National Environmental Information and Data Platform that will be developed under the GEF 7 SVG Coastal and Marine Ecosystems Management Strengthening Project. This activity will include the definition of the baseline data and proposed targets for the next 2 years. No specific indicators were provided by her. She had no specific recommendations or priorities for UNDP or others.

2.5.4: Concluding Reflections on Stakeholder Engagement

The Stakeholder responses contained a great number of helpful and illuminating comments and recommendations, of which only a sample have been included above in order to shorten the report. More details around these can be found in the stakeholder responses found in Annexure III. A summary of the respondents' suggestions regarding the funding of and investment in blue economy projects, can be found in Table 2.5.2.3 under.

Table 2.5.2.3: Stakeholder Recommendations To Support Funding and Investments.

Sector	Requirements/recommendations regarding funding of blue economy projects
Private / NGO	Coordination between funders Streamlined procedures, simplified procedures for small organizations More funding opportunities for small projects Increased focus on marine conservation, ecosystem-based management Promote projects that address degradation of mangroves, sea grass, coral reefs, regeneration of ecosystems Promote projects that address alien invaders, lion fish, sargassum seaweed Need to support job creation and women owned projects Support projects that address pollution reduction and recycling Address risks from pollution

	Address risks from climate change Limit coastal development and resource pressure Fair, transparent and equitable procedures Limit adverse effects of excessive tourism Feedback to unsuccessful projects, and mentoring Recognition of indigenous and traditional activities and knowledge Support for feasibility, risk impact and market feasibility studies prior to submission Provide letters of support for funding applications
Investors / Funders	Need a business-friendly environment Streamlined, predictable taxation Allow projects to be demand driven, within environmental constraints Policy certainty Support for training, logistics, research and development Technical support to identify suitable sites Standardized investment criteria and measurements of success, as far as possible given different funders priorities Adaptive and efficient MSP processes, public consultation and buy-in; Include Polluter Pays and other principles Public private partnerships, and risk sharing by government. Risk guarantees and Insurance provision e.g., COAST Sound land zoning and marine spatial planning Contributes to each country's national plans and development strategies Project incorporates M and E mechanism Increase skills levels

Source: Dyer J.A., This study

In conclusion to this section, these participants identified the following possible funding sources in Table 2.5.2.4 below, including specific Caribbean and global sources. They also provided certain examples of their recommendations for certain indicators that could be used for measuring the impact of investments or monitoring and evaluating progress of various blue economy related projects and initiatives as in Table 2.5.2.5 below. Appropriate indicators that they have proposed form the basis of Section 2.6's subsequent Blue Economy Investment and Financial Framework to provide both global, Caribbean regional and local Barbados, Grenada and St Vincent and the Grenadine specific customised priorities.

Table 2.5.2.4.: Stakeholder Identified Blue Economy and Other Sustainable Funding Sources

Local	Global
SVG/Grenada Conservation Fund	Waitt Institute
Sustainable Grenadines	MPA Connect
Blue Finance	Ocean Rescue Alliance
UNDP Blue Accelerator Labs	World Bank - PROBLUE, direct loans etc
Compete Caribbean	Caribbean Development Bank
FAO	Caribbean Biodiversity Fund.
Republic Bank-Potentially	UK Blue Planet Fund as forthcoming and CMEP Phase 2/Canada government -their own people.
Barbados Fund Access	Rockefeller Asset Management Ocean Engagement Fund

Youth Enterprise Scheme	Schneider Family Office -Potentially
Resilient Capital Ventures -investigating	WWF (Blue Economy/Seafood Finance)
IUCN	Valerie Capital - Potentially, still investigating
Mustique Caribbean	A Thousand Startups
Grenada Sustainable Development Fund	GIZ
UNDP Small Grants Programme	Althelia Ecosphere Sustainable Ocean Fund
Aquanauts Grenada	Investable Oceans
COAST - parametric insurance scheme, CCRIF - insurance scheme	European Investment Bank
Barbados Environmental Trust	

Source: Dyer J.A., This Study.

Table 2.5.2.5: Examples of Respondent-Identified Blue Economy/Marine-Related Impact and Monitoring Indicators

Respondent	Indicator
Respondent 2	Efficient fishmeal ratio -quality and quantity, Marine Ecosystem Resilience, Ocean Health Index, decreases in fisheries bycatch waste, reductions in pollution, changes in fisheries yield and species numbers and composition, quality and quantity, linking and attainment of Sustainable Development Goals or SDGs, reduction in greenhouse gas emissions
Respondent 3	Gender equity and involvement, alignment to the SDGs
Respondent 4	Biological species growth in number and marine biodiversity cover, increase in coral reef cover and quality, ocean health and resilience, alignment to the SDGs
Respondent 6	Ability to withstand external events, risk pressures such as marine pollution, natural disasters and climate change, reduction in pollution volumes discharged and collected, reef health increases, reductions in greenhouse emissions and carbon/resource footprints; % of GDP exposed to climate change/disaster/ocean risks
Respondent 8	Alignment to SDGs
Respondent 9	A legal formal commitment to protecting 30% of land and marine EEZ by 2030 including in law, allocating resources for enforcement and implementation, Proportion of area designated as a Marine Protected Area
Respondent 10	Alignment to the SDGs and the UNEPFI Sustainable Blue Economy Finance Principles
Respondent 11	Access to and the actual sustainability of the financing of the blue economy; the ability to attract new private sector, nongovernment and non-NGO/multilateral institution funding, Environmental Sustainability, Degree of Innovation
Respondent 16	Commitment to the 30% by 2030 goal legally and % of EEZ as a marine protected area; existence of equivalent budget and monitoring/enforcement capabilities; Changes in species biomass and biodiversity cover, Measured changes in community perceptions towards the blue economy and their behaviour to capture the human, social, psychological aspect
Respondent 18	Number of marine protected areas, % of EEZ protected, ocean/reef health and productivity, No of sustainable businesses, employment and revenue/funding streams generated.
Respondent 19	Return on Investment, profit, clear dividend/payout ratios and alignment to the SDGs.
Respondent 20	Presence of species numbers and biodiversity, changes in reef resilience, ocean health, presence of risks; changes in turbidity and sediment.
Respondent 21	Carbon footprint and emissions reduction
Respondent 22	Alignment to SDG14, rate of return on investment, sustainability and sustainable based profitability
Respondent 25	Alignment to 30% by 2030, SDGs, Value Added Risk, emissions reduction, reduced loss of habitats/coral reef/mangroves, species etc
Respondent 29	Reduction in marine pollution, reduction in emissions, climate change disruption risks, access to sustainable finance; proportion of MPA protected.

Source: Dyer J.A., this study.

2.6: Recommendations for New and Improved Tools, Sources and Screening Criteria/Sector Priorities Related to Evaluating, Implementing, and Designing Blue Economy Investment/Finance Mechanisms (Activity 2)

2.6.1: Summarising Best Practices

To undertake Activity 2, this Report's next primary objective is to synthesise the above research sources to subsequently provide the common elements for a proposed Caribbean and Global Blue Economy Finance and Investment Framework. Current literature evaluation and stakeholder consultation has revealed a lack of harmonisation in this area. Although many claim to base it on sustainability and impact investing, there appears inadequate coherence on the tools, screening criteria, mechanisms and impact indicators or guidelines that national governments, communities, individual businesses, entrepreneurs and investors can utilise to link to the blue economy. This statement concerning a fragmented approach to related blue economy impact investing, with limited agreement, is verified through reviewing over 120 peer reviewed and governmental/organisation sources on the topic, through past research and related consulting experience; as an active member and Co-Convenor on the Global Blue Economy Innovation and Incubation Network and Blue Economy Investor Roundtable forums of the World Ocean Council, and through at least 36 interviews and surveys conducted with various stakeholders including impact investors and other financing sources. To overcome this, the following framework will attempt to provide greater certainty with possible components to incorporate in stakeholder decision making, in relation to prioritising and implementing the blue economy via finance, irrespective of source and location. This will include the best practices, principles, methods and experiences as detailed in the report above, from networking and engagement with various qualified entities and in reviewing over 115 existing sources. Uncertainty over these factors, combined with an absence of suitable, market and investor friendly projects, is currently among the foremost of inhibiting factors to not just funding blue economy implementation in Barbados, Grenada and St Vincent and the Grenadines but globally.

In response to the Terms of Reference, this consultancy contributed the following components towards a potentially integrated Blue Economy Finance and Investment Framework:

I: Identify existing potential sources of blue economy and sustainability themed funding and best practises through a literature review of global and Caribbean specific stakeholders.
II: Consider the development of potential screening criteria.
III: Consider the various instrument types, tools and mechanism criteria.
IV: Identify motivations of the associated stakeholders involved as a basic risk assessment.
V: Consult stakeholders for their experiences and insights
VI: Identification of a pipeline of investable opportunities, projects and initiatives
VII: Establish associated distribution channel mechanisms to simplify access to finance and investments
VIII: Development of the implementing mechanism and stages
IX: The formation of associated impact indictors to monitor the extent of progress towards the blue economy.

The following framework represents this consultant's contribution to this research and therefore any assumptions, benefits and limitations need to be qualified and understood accordingly. It is necessary to note that any subsequent revisions to the model, criteria, methods, indicators may need to be undertaken not just with UNDP and partner UN organisations, but blue economy, finance and other related stakeholders and requirements. The full framework is detailed in Section 2.6.2. It is proposed to include a methodological sequence in this framework, incorporating a number of stages, with associated factors, principles, metrics and/or indicators to consider. To develop the blue economy, stakeholders need to decide which areas are to be prioritised and whether individuals, governments, the private sector or others are to take the lead for Stage I: *To Identify and Prepare Suitable Projects/Investment Opportunities - A Clear Vision for the Framework*. Communicating with stakeholders has

revealed their concern that, too often, inappropriate, unsuitable opportunities are unrealistically or problematically recommended. Yet these projects have to be of initial interest or exist in concept, to determine any overall subsequent interest through the rest of the stages. Sometimes, the source of the funding, may just wish to support any individual, business or other entity with their own ideas via financial incentives, enabling legal policies and political, social, data, information sharing, site and or other assistance. At other times they may seek a more interventionist partnership. For this specific consultancy, certain specific initial investment opportunities are provided as potential priorities to convert to this blue financing framework for the scope of Barbados, Grenada and St Vincent and the Grenadines in Section 2.5.1.

As detailed in the following section, it is therefore crucial for whoever is applying this framework to examine which funding source, instrument and approach they wish to pursue, as each has its own benefits, restrictions and method/monitoring singular requirements as well as those more generally contained within this framework. Stage II is therefore to: "*Identify and Investigate the Potential Sources of Funding, Target Audience, Timeframe and Size of Investment*". Certain sources are more appropriate for microscale entrepreneurs and activities favouring more localised blue economy opportunities such as those identified in Section 3. Corresponding investments in infrastructure, tourism resorts and marine protected areas, for example, require suitably more financially endowed options to participate. The anticipated duration of the project and the beneficiaries will also correspondingly influence not just the scale of funding that needs to be factored in but the resources that may be needed to be planned to monitor and implement it, the information needed, any refinements of the framework and methods. Stage III encapsulates the pragmatic with the psychological. It entails: *Conduct An Initial Screening Criteria Assessment to Devise Appropriate Project, Instruments and Investor Types.* Once the overall opportunities and approach are initially determined; both investors and the ones seeking investment have their own criteria as to which projects should be included and which ones rejected. The most common indicators provided by insight are outlined in Table 2.6 in the next section. Subsequently, these can be modified to address any concerns, requirements and screening/investment criteria, which will determine a far higher probability of a commitment by the parties involved. Suitable projects and specific instruments types and methods can be selected and designed.

However, the investor perspective remains that, with every decision, there is an opportunity cost associated with that decision which may have yielded a higher blue economy, social or other impact investment return. Before committing this framework suggests conducting basic research to ascertain if there not just any ecological/social need, but also financially to determine the probability that they are likely to get a projected rate of return on investment. The framework includes this under Stage IV: *Undertake an Initial Pre-Market Feasibility Study including Potential Customer Input."* Even if significant profits are generated, participants wish to have some idea that costs will be possible recovered and that their personal, professional and funding allocation of time and effort is also likely to be worth it. This research will also help initially engage if the actual project investment is appropriate - in terms of type, the extent, the timeframe and any other basic risks, information and marketing impressions. It will also help engage whether the local individuals, businesses, communities as potential beneficiaries, may actually support the concepts or prove hostile towards the idea, which may deter further investment. Equally, it may be found to have expected or unanticipated adverse externality costs to these stakeholders and their environment.

However, as the blue economy and its prospects remain fundamentally based upon the concepts of sustainability and a recovery-based prosperity; one of the most crucial stages is to consider to what extent this specific investment opportunity will influence the underlying dependent marine ecosystems (Figure 2.1), resources, species, biodiversity and other dependent activities, economic, ecological and social functions. More specifically the framework aims to cover this in Stage V: *Calculate Natural Ecosystem, Economic, Social and Other Baseline Valuations of marine/ocean resources/activities related to the blue economy sector for the proposed investment. This includes identifying/linking to national ocean accounts, fisheries and other statistics and other information necessary to determine potential ocean/ecosystem health, productivity, profitability/contributions and other factors.*

This may include assigning and quantifying values, where possible for the economic and ecological functions previously identified in Table 2.2. There are several ecological economics processes based for doing so based on natural capital evaluation and ocean accounting, although these have not been comprehensively developed fully in relation to the blue economy. Certain of these indicators may be identical or similar to those used for the impact assessment indicators in the next section, the distinguishing characteristic being that, it is necessary to use this data as a baseline trend to identify just how much ecosystems contribute in value to the blue economy and how much the blue economy is potentially worth.

Initial stages for developing a blue economy financing mechanism include to actually utilise national ocean accounts and other sources, to identify the magnitude of the blue economy that exists - as potential revenue and that needs financing in order to be protected.[150] This also includes quantifying any associated economic, social, ecological and other functions or services. One Philippines case study estimated a minimum value of $966,600,000,000 to the blue economy as an example of this ecosystem based natural capital account valuation that the three countries within this study could use as a baseline for determining requisite investment values in restricting nature based blue carbon and other ecosystem based approaches and how these values could change over time as a result of the investment impact.[151] Proposed indicators included changes in marine environment such as seagrass, blue carbon sequestration, mangrove, coral reef, and species value. These received a minimum, medium and maximum use and non-use value calculating based on quantifiable indicators such as revenue where these existed. Environmental economics such as contingent valuation and hedonic pricing including people's willingness to pay versus actually paying can cover less quantifiable social costs. It quantified the income from various activities such as fisheries, aquaculture, tourism, shipping and ports and other areas. To calculate this from national ocean accounts may require simultaneous reconfiguring of available existing data systems and processes, along with professionally training the relevant people.

Another Philippines source based its calculations of ocean economy estimates via the UNESCAP System of Environmental and Economic Accounting.[152] However these accounts are constrained on mainly dealing with economic value adding and output. Existing data challenges that it warns against, from experience, include obtaining many data challenges for proxies and values such as maritime education and training and specifically marine/coastal tourism. Many data estimates that exist are often aggregated and not in an individualised format, easily measurable and applicable to sustainable key performance indicators. The next stage is to determine the associated risks and impact costs, considering how these will change over time and with additional risks/pressures being created. The net annual contribution per hectare in a designated currency can also be specified. The various types of blue economy financing sources need to be carefully considered such as bond, subsidies, tax, credit, loan, blended finance, hybrid investment, mezzanine and equity loans or other instrument types, linked to previous method stages. Marine spatial planning and improving ocean governance also is critical.

The following stage is the most technical and can vary in relation to the actual specific tools favoured or information, timeframe and resources available, but it ultimately aims to consider if any potential risks and associated impact costs are anticipated as a direct result of the study. Specific examples of methods, risks and impacts are indicated under the Framework in the next section. It is advised that these approaches investigate anticipated risks/impacts as far as possible so that potential mitigating measures can be designed when executing the project. This aims to minimise any disruption, impact or other associated costs. Stage VI of the Framework therefore advises stakeholders to: "*Conduct a Potential Ocean, Ecological, Economic/Market, Social, Policy, Technical and Other*

[150] NLA International 2021, "The Blue Economy in Practise: Raising Lives and Livelihoods," *Blue Economy Pulse*, Portsmouth
[151] Azanza R, Alino P, Cabral R, et.al., 2019, "Valuing and Managing the Philippines Marine Resources Towards a Prosperous Ocean Based Blue Economy," Ateneo School of Government Publications, Manilla.
[152] Bersales L, et. al. 2019 "Measuring the Ocean Economy. Towards the Compilation of the Philippine Ocean Economy Satellites," 14th National Convention on Statistics, Quezon City

Risk and Impact Cost Assessment. This may include Cost Benefit Analysis, VaR and other risk and economic impact- based methods." Additionally, investors can conduct their own parallel searches to see if any localised, regional or other legal and fiscal related incentives exist to favour certain activities, investment types, locations and beneficiaries over others. Equally, conducting this process will help avoid any associated disincentives, fines and penalties. It is highly advised that processes operate on ecosystem-based management, Precautionary and "Do No Maximum Harm" Principles incorporating marine spatial planning, scientific investigation and local legal processes where necessary.

If the above stages have confirmed the need and validated a committed investment decision, then prior to actual implementation this resource highly recommends the related parallel need to alter any previous blue economy finance related concepts accordingly. Whether government, aid agencies, the private, financial sector or communities; the target, the beneficially and all parties are advised to consider Stage VII: *Consider an Institutional Capacity Analysis and Resources Required for Implementation. Ascertain any potential policies that may need modifying, Evaluate and Prioritise Risks, suggesting changes."* Initially this includes ascertaining the extent to which existing processes, human resource capacity, technical, finance, data gathering, monitoring, coordination and communication systems, along with other resources may require changes to successfully deliver the project. Will external consultants need to be hired or will local capacity remain sufficient? Previous stages may have identified certain risks, impact costs and particular subprojects or activities that may need to be considered but given timeframes and the constraints of the recipients or funders (especially Small Island Developing States), these may need to be effectively prioritised and planned for, to allocate resources most potentially optimally.

Following these stages, the proposed blue economy finance/investment project can actually be executed and undertaken as considered in the Framework's Stage VIII: Enact Implementation of the Actual Project/Investment Proposal, Simultaneously Incorporate Stakeholder Awareness and Marketing, Consultation and Engagement." Once the project is being developed, via assessing market feasibility and product testing, initial testing and legal processes, between Stages VII and VIII it is highly advised to ensure that those external parties are informed and consulted actively, protecting traditional uses, respecting local cultures and indigenous rights where applicable. The idea is to not only see if any popular support and interest can be committed to the project to maximise its success, but provide commercial local markets if necessary and lead to their potential eventual support in monitoring impacts against any emerging risks. It also can offer chances for any concerns or interests that many stakeholders may have, whilst maximising the associated benefits as participants may be able to gain from employment, trade, income, skills development, improved ecosystems and oceans etc. Independent appeal and judicial systems of recourse can ensure that any problems that are justified, or perceived to be, can be subsequently addressed. This method stage also identifies the need to identify any impact implications across blue economy sectors, supply chains, scenarios, timeframes and risk types.

Stage IX requires a more detailed analysis for those seeking to understand the full more accurate implications of any blue economy investment related decision. It states: "*Consider Direct, Indirect and Intangible costs, Cumulative, Transboundary and Other Impacts."* Most forms of impact investing seek measures to convincingly determine whether or not they have made successful progress. These impact investors each have their own screening criteria which are not always transparent, hence the inclusion of specific indicators in the following section. This stage subsequently advises to measure and ascertain potential impacts of investments based on pre-set impact investment criteria is in the following indicators and stakeholder concerns/requirements. This can also be aligned and assessed against the extent to which it progresses the UN Sustainable Development Goals, the UNEPFI Sustainable Blue Economy Finance and UN Global Compact 9 Sustainable Oceans Principles and others. Therefore, the associated indicators will draw upon these as well as existing investor/other best practices and personal experience to propose some initial impact indicators for communities, governments, investors and others to determine the extent to which blue economy progress is being implemented.

A committee of technical experts and one of finance/impact investment experts are needed, to provide expert professional judgement of their impressions of the proposal. This ensures that independent, external parties alongside other potentially affected people can also ascertain the relative merits versus risks and uncertainty of any decision. Above all, the primarily considerations other than the Precautionary Principles, must be the ones to "Do No Further Maximum Harm," the need to improve overall ocean ecosystem health and productivity, reduce vulnerability and increase resilience to climate change, marine pollution, IUU fisheries, unsustainable resource pressures and other related threats. To be even more effective, part of this process can ascertain scenarios of investing, with these risks and costs against the opportunity costs of not intervening, selecting alternative decisions or inaction cost. If the benefits are significantly higher and the costs lower, then the decision to intervene should be supported by as many stakeholders, even suitably publicised where necessary.

This logically follows onto Stage X: "*Subsequent Investment Decisions to halt, alter, cancel or grow the project can be determined*." This can be based on the previously mentioned criteria as well as more individual, activity or location specific requirements and help determine not only the survival of the project initially but its long-term growth, development and restructuring prospects over a certain timeframe. This is critical so the management and use of proceeds of the finance are actually not only undertaking their original task but can be used as best practise examples and a basis for this and any future related developments. Finally Stage XI, considers a greater impact to be monitored, by the funders/investors; by local communities/businesses and those potentially affected; by media, NGOs and governments/regulators to ascertain if any risks/impact costs need to be addressed - based on the strict liability of the Polluter Pays Principle. Stage XI states to*: "Undertake Performance Monitoring and Evaluation Based on Pre-Set Impact Investment Indicators*." How to implement and monitor the mechanism is also paramount via employing, testing and modifying the aforementioned impact indicators that assess blue economy sectors, problems and concerted progress. If successful, considerations also need to be considered for its scalability/replicability potential elsewhere both locally and internationally as best practices. Given the scale and scope of the blue economy, efforts need to be made to reach out to international partnerships. Additional related blue economy investment and finance opportunities may subsequently be developed.

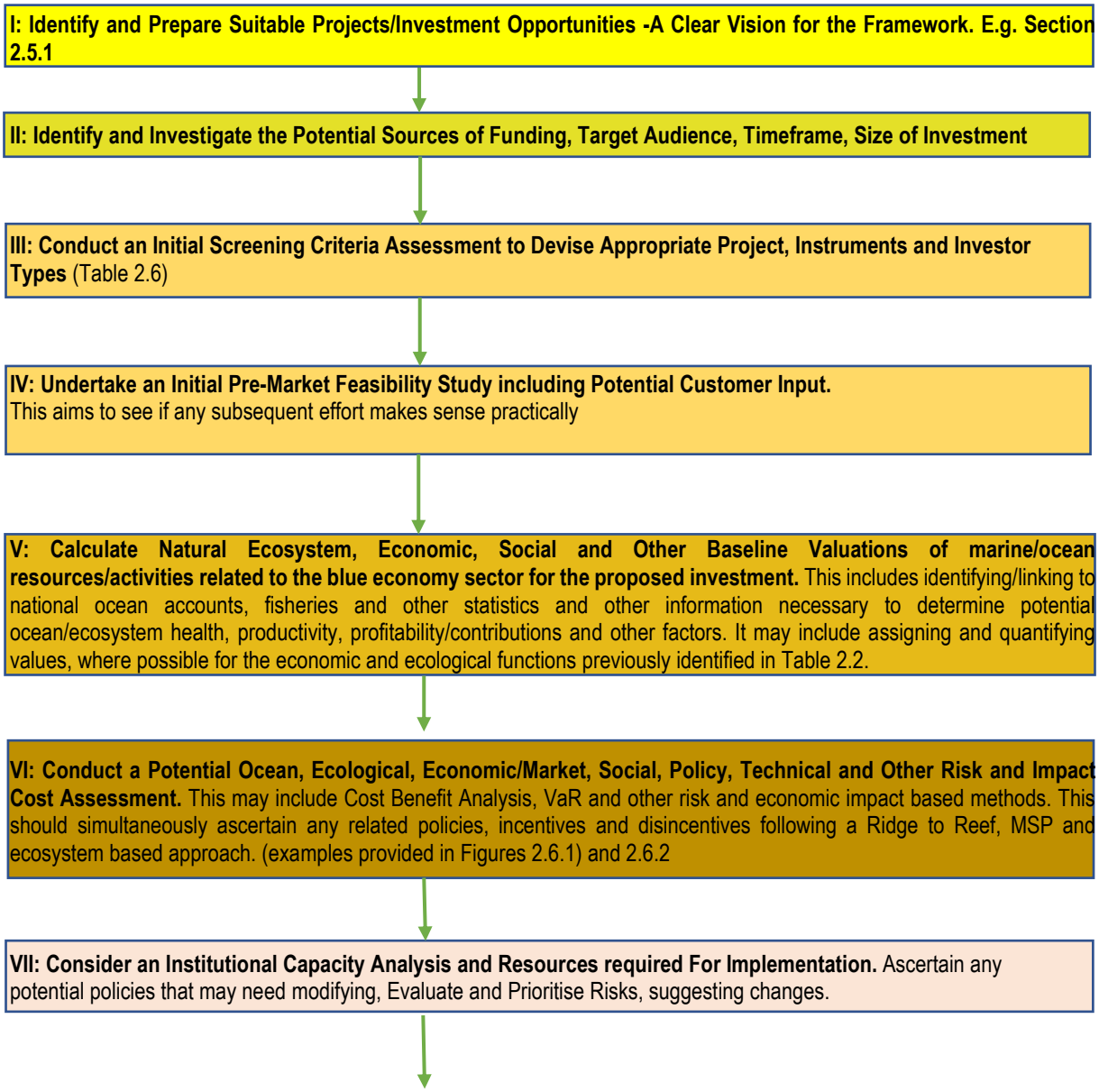
2.6.2: The Proposed Caribbean/Global Blue Economy Finance and Investment Framework

Therefore, the above elements can be considered necessary to incorporate into the proposed Caribbean and global blue economy finance and investment framework or Figure 2.6. As stated elsewhere, the framework itself may need further adapting to the local Barbados, Grenada and St Vincent and the Grenadines' respective national country contexts, priorities, constraints, requirements and projects. As of the 15th October 2021 Version 2 submission, virtually none of the 22 responsive stakeholders had provided any specific comment relate to adapting the framework. Due to survey finalisation delays, only Barbados's national Blue Economy Implementing team had received the questionnaire on the 12th October. For Stage II the sources of finance include those stated in previous sections such as from international financial institutions, vertical funds, multilateral organisations and the local/global banking, finance and insurance sector. It extends to possible pension and sovereign wealth funds, microfinance entities, exchange trade funds, hedge funds, infrastructure funding and other entities. It can include private philanthropy from individual donors, trusts and endowment funds, aid and NGO agencies, governments and others. Others include traditional venture capital and impact investors; those related to supporting entrepreneurs, seed financing, academic research grants and crowdfunding from the public. Blended finance can combine deals as can public-private partnerships. The instruments participants could potentially choose from include blue, green, park, resilience, social impact, project and sovereign bonds along with Debt for Nature or Equity restructuring. Further mechanisms for financing include commercial and other types of loans, insurance

products, fines, taxes, tax credits, import fee and other reductions, discounts, revolving loan funds, research related grants, public or private procurement of products and services. There are also carbon, blue carbon, pollution and biodiversity loss credit offsets that can be designed for purchase to restrict adverse damage.

Additionally, various parties could fund scholarships and other forms of training, education and skills support; equity investment arrangements, subsidies in favour of certain activities or to discourage others. For governments and other asset owners, particular tools can involve various prospecting and other licensing or user fees, exemption from interest, dividends or other normal payments. From consultation with various investment sources and recipients; this consultant has also ascertained certain screening criteria that are often used by funding sources or by those determining whether to accept, reject or insist upon a conditional approval based on certain modifications. These screening criteria summarised in Table 2.6, provide motivations that can ultimately determine the probability of success and support in Stage IV of the framework, to ensure the funding matches parties' expectations, prior to wasting expensive and time consuming preparatory work.

Figure 2.6. The Proposed Caribbean/Global Blue Economy Finance and Investment Framework



VIII: Enact Implementation of the Actual Project/Investment Proposal, Simultaneously Incorporate Stakeholder Awareness and Marketing, Consultation and Engagement. Stakeholders will feel more reassured if independent judicial/appeal and representative processes exist to represent the interests of legal equality and a fair chance against the project, if desired.

IX: Report back to successful and failed applicants as to why they were successful or failed, with productive feedback and advice. Consider identifying mentoring or support to find other investors and funders, particular, smaller community based organisations

X: Consider Direct, Indirect + Intangible costs, Cumulative, Transboundary + other Blue Economy Impact Indicators of intervening; against opportunity costs of not intervening, selecting alternative decisions or inaction cost. Consider implications across sectors, supply chains, scenarios, timeframes and risk types.

Measure and ascertain potential impacts of investments based on pre-set impact investment criteria, as in the following indicators and stakeholder concerns/requirements. This can also be aligned and assessed against the extent to which it progresses the UN Sustainable Development Goals, the UNEPFI Sustainable Blue Economy Finance and UN Global Compact 9 Sustainable Oceans Principles and others. A committee of technical experts and one of finance/impact investment experts are needed, to provide expert professional judgement of their impressions of the proposal

XI: **Subsequent Investment Decisions to halt, alter, cancel or grow the project can be determined based on the Polluter Pays, Do No Further Harm and Precautionary Principles, along with protecting indigenous and human rights.** This decision needs to be evaluated in the short run/1 year, medium and long term. The management and use of proceeds for the finance are needed

XII: **Undertake Performance Monitoring and Evaluation Based on Pre-Set Impact Investment Indicators**

Source: Dyer J. A., 2021; based on research undertaken for this report as described above.

This framework proposes a risk-vulnerability evaluation process based on Figure 2.6.1 for stakeholders, but flexibly adjusted to the blue economy, standardised across climate change scenarios, emissions growth rate and time horizons. This is capable of identifying risks autonomously of stakeholder, supply chain and company type, size, location, resources and number. It evaluates systematic and individual implications of a projected increase in the frequency, duration and intensity of events on supply chain or specific activity risk. It aims at effective adaptation. It targets achieving stakeholder requirements. It considers vulnerability, resilience and adaptive capacity. This method aims to aid stakeholders to adjust to uncertainty conditions among projected risks. This creates a dynamic method framework and criteria; allowing information, risks, time, demographics, adaptive capacity, resilience, vulnerability and ecosystems to change. With empirical, impact cost estimates, this method emphasises the significant, direct and personal cost, consequences of ignoring climate change. Unlike others, it enables environmental sustainability; improved technical efficiency, training and maximised opportunities across blue economy investments. This aims for a world that retains functioning, cost-competitive supply chains and the physical survival of marine resources with highly vulnerable, coastal communities.

Table 2.6: Blue Economy Finance Screening Criteria Motivations to Select Investments

Profit, cost recovery and IRR (Internal Rate of Return)	Replicability
Financials - cashflow, solvency, liquidity of proposed target	Potential market size, revenue potential, demand and supply
Scalability	Appropriate skills, capacity, or supports skills development and training.
Innovative - concept proven, uses innovative technology or methods	Environmental impact potential. Impact on identified local areas of concern e.g. invasive species, coral reefs, pollution, waste, coastal degradation, MPAs, ecosystems.
Social and employment impact potential; involvement of women, traditional activities/knowledge.	Governance/economic/other impact potential; import substitution or foreign exchange impact.
Degree of Competition/Market Barriers to Entry	Public/Community/Responses
Degree of Government interest, support, incentives, risk-sharing	Potential policy framework and certainty
Relevance - fits profile needs, timing, scope and screening	Perceived risks - Country, Project Specific, investment risk, economic, financial, market, environmental/ocean, social
Ease of Monitoring and Evaluation	Links to SDGs, UNEPFI/other global and internal criteria, links to National development plans, policies and goals.
Degree of IP/Patent protection and capacity	Climate Change offset - mitigation, adaptation
Ecosystem/Supply Chain Resilience, Vulnerability	Timing - State of readiness
Data availability	The Need for a Clear Exit Strategy/Ease of Disposal

Source: Dyer, J.A., 2021, based on research for this report and stakeholder engagement.

This risk assessment method emphasises creating a new risk perception stage (III). This ascertains stakeholder awareness of risks, when compared to actual data; to evaluate their psychological capacity to accurately determine, value and understand risks sufficiently. Given risk perception bias, this stage is proposed to consider the extent to which stakeholder awareness is measured accurately. This minimises risk omission, under and over-estimation. It advises stakeholder identification of past risk frequency, duration and intensity/impact costs. This can be combined with asset failure against existing risk events, to provide objective, risk identification criteria. Once risks are identified and combined with projected impact costs and calculated through the proposed impact cost analysis in Figure 2.6.2, stakeholders may more effectively establish stage VI (risk adaptation and treatment). As an effective risk assessment framework would integrate climate change and other blue economy risk mitigation, adaptation, retreat/surrender, relocation and ocean health with ecological rehabilitation. Stage VII advocates

prioritising risks with potentially more urgent or significant impact costs. This risk-assessment methodology may need to include interconnected, indirect/direct impact costs along with a final monitoring and evaluation Stage VIII. This stage needs repeating to prepare stakeholders to continuously identify emergent risks, over future time horizons, as risks fluctuate in duration, intensity, frequency and impact costs. It is also necessary to assess each adaptation strategy's value through the extent to which it resolves key risks and associated impact costs, whilst preserving stakeholder requirements.

Figure 2.6.2 summarises its combined method conceptual framework through a joint climate change risk and impact event tree. It summarises key blue economy activity and maritime supply chain stages (orange), climate change risks (green), factors affecting the probability of a risk occurrence (blue), factors which influence supply chain vulnerability/resilience. These factors connect to risks (pink/red), direct (brown/orange) and indirect impact costs across the supply chain (green). Long term risks are highlighted in Figure 2.6.2. Sudden risks include climate change-related events. Other less investigated risks include solar radiation, increases in humidity, changes in pH salinity; cloud cover, evapotranspiration rate and fog. Climate change, risk event occurrence and vulnerability are conditional upon non-climate related drivers in Figure 2.6.2, e.g. population/economic growth, technological progress, production and consumption. These are held at constant growth rates autonomous of the climate change rate, scenario, time horizon, supply chain stage and stakeholder. This isolates direct risk attributable, impact costs for a blue economy investment and its dependent marine ecosystems with supply chain. However, this tree and conceptual framework's advantage includes flexibility to consider additional dimensions as information becomes increasingly available. This reduces uncertainty over projected climate change. This proposal also outlines factors which influence the extent of risk for a blue economy investment, supply chain, asset vulnerability and economic, impact cost sizes via Figure 2.6.2. These are not covered by formal safety assessment and other risk methods. Factors include projected design, material (labour, capital, technology, equipment and infrastructure), life expectancy, location and distance to event risks/pollution. Others include asset condition, past risk exposure, degree of climate-proofing and the extent to which effective repairs and maintenance are conducted as per the identification of which risks to prioritise in the below criteria in bullet points. Existing coastal erosion, topography, demography and developments or land use may also affect a blue economy activity or maritime supply chains, physical risk-vulnerability, to consider in forming an integrated methodology.

Stakeholder Criteria in Evaluating Which Risks to Prioritise and Why

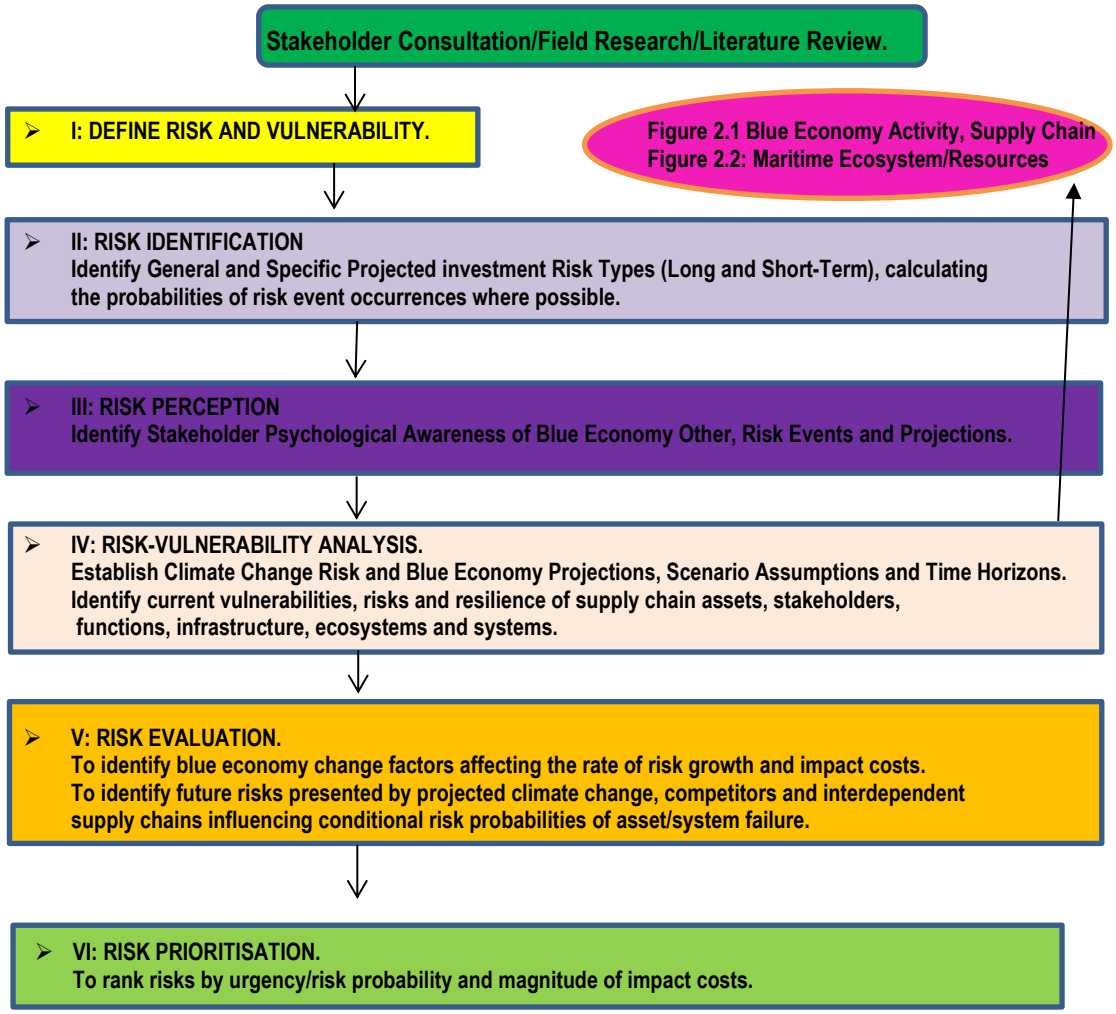
- Probability of Blue Economy Risk Occurrence
- Size of Impact Costs/Consequences.
- Historic, Current and Future Risk.
- Factors affecting asset condition, resilience and vulnerability.
- Physical Location. Time Horizon; Climate Change Scenario.
- Stakeholder Requirements.
- Other Supply Chain Stakeholders.
- Competitors.
- Capacity for Redundancy.
- Extent of blue economy interdependent and exposure.
- Contractual obligations.
- Legislation/policy guidelines.
- Fiscal/donor funding incentives/disincentives.
- Potential for research innovation/technical progress.
- Changes in demographics/migration, tax and legislative policy.
- Identify Physical environment
- Identifying accumulative impacts from past and current events.
- Updated communication/information systems and sources.

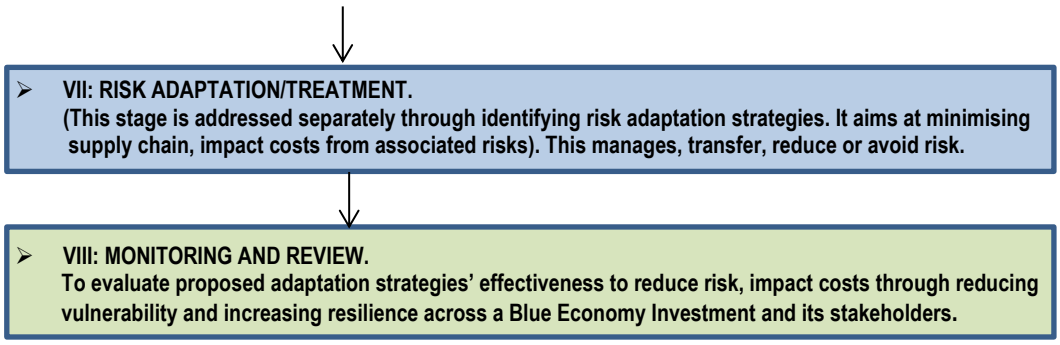
- Physical changes in species/ecosystems/climate.
- Resources available and other adaptation constraints.
- The extent and effectiveness of mitigation/adaptation as factors potentially affecting the extent/probability of risk and risk factors.

Standardised Cost Benefit Analysis may provide an example of another applicable tool. Traditionally it involves the following stages:

- Theory of Change – Outline objectives, backgrounds and approach.
- Step 1: Specify the set of options. - including background factors and recent developments that may influence a CBA.
- Step 2: Decide whose costs and benefits count.
- Step 3: Identify the impacts and select measurement indicators.
- Consider NPV, discounted values and rates.
- Consider potential beneficiaries and those losing out, policy, risk and other incomes.
- Step 4: Predict the impacts over the life of the proposed regulation.
- Step 5: Monetise (place dollar values on) impacts.
- Step 6: Consider alternative scenarios; opportunity costs and benefits of intervening versus not intervening.
- Step 7: Consider possible modifications if circumstances/conditions change.
- Repeat if necessary.

Figure 2.6.1: Proposed Vulnerability-Risk, Analysis Stages For a Blue Economy Investment





Source: Dyer J.A., 2019.

For Stages VII/VIII, stakeholders can be asked to provide input through workshops and online submission via emails, questionnaires and phone/virtual meeting link interviews given the COVID19 pandemic. From engaging with stakeholders, common concerns relating to blue economy investments are similar to any other activity in terms of people and entities - they have concerns about the possible implications to local economies, ecosystems, communities, societies, heritage, lives and livelihoods. People want to provide input; be assured of the product, service or activity meets their expectations and service in relation to demand, time, quality, cost, safety, security and other factors. They wish to be reassured that they are familiar, aware and sufficiently informed about accessing any finance or supporting resources available. Alternatively, they may seek certainty over the potential benefits, any incentives or disincentives, legal requirements and adverse externality costs or risks hazards, are appropriately undertaken. Impact indicators need to be publicized and parties may seek confirmation on any updates related to the project timeously and accurately, including evidence that parties are complying, contributing towards sustainable impacts.

Given the challenges upon agreeing on standardized impact indicators in relation to the sustainable ocean/blue economy, and risks such as climate change, marine pollution, IUU fisheries, seabed mining and others, this Framework and section have proposed a several-fold series of indicators, which may be altered based on the specific data available, priorities and interests of the government, community, individual businesses, impact investors and others. Several of these originate from published best practices and stakeholder consultation, Others are provided by this consultant as proxies, as a conceptual contribution based on experience, and the need to quantify/align to specific metrics, requirements and methods. This may, in alignment with the framework and several other core series of Principles, help to overcome the overall problem of the lack of a comprehensive global framework mechanism to identify, monitor and measure progress in financing and implementing the global and Eastern Caribbean blue economy To align it to a more user friendly format to those stakeholders in the Caribbean, the initial Table 2.6.1 provides impact investment examples to measure progress, but classified in terms of blue economy activities, risks, opportunities, general indicators and other. In alignment with the framework however, international best practice has advised the linkage to a few, specific and more internationally accepted series of metrics. However, these too often have gaps, being stated as just principles.

Table 2.6.1 Proposed Blue Economy Activities Impact Investment Indicators for Framework Stages IX-XI

Blue Economy Activity, Risk, Opportunity or Other Factor	Impact Indicator Examples
Ocean Health and Marine Ecosystem Resources	Ocean Health Index; Changes in species growth and volumes, biodiversity patterns, % growth changes and quality of mangroves, coral reefs, seagrass, kelp; blue carbon generated and offset in volumes such as tons per year. Changes in ecosystem and real estate values, hedonic pricing, Species richness/biomass; increased air, water and soils quality, conservation and biodiversity Changes in natural capital valuation/economic/ecosystem values over time
Fisheries	Bycatch reduction in terms of volumes and costs; usage of more sustainable fisheries technology and methods; number of related offences; proportion of economic activity. Reduction in unsustainable yields; increase in certified harvests; .5 ROI (%) of alternative livelihood initiatives supported; Fisher income (US$/year) from sustainable fishery job vs. fisher income (US$/year) from non-sustainable fishery job. Additionally, ratio of fishers employed in sustainable fisheries vs non-sustainable fisheries; Mean standard length of caught fish (cm/fish) vs. baseline measurement at starting time of project (t=0); Number of locals (total # of individuals) and women (# of women) employed in businesses with a direct or indirect positive impact on coral reefs and associated ecosystems vs. baseline (t=0); Number of local entrepreneurs (total # of individuals) and women managing (# of women) businesses with a direct or indirect positive impact on coral reef and associated ecosystems vs. baseline (t=0)
Aquaculture	Growth in number of farms; % contribution of total consumed domestic and export fisheries; reduction in imports; growth in employment, Gross Value added activity, production etc. link to export potential and revenue; commercial value per production time required, feed requirement, mortality-resilience and hatchery feasibility; seed stock supply, farming method, feeding regime and market; environmental impact mitigation, social impact and communities, economic and market potential) and Business and Investment Risks (biotic production risks, production system risks, market and supply chain risks, financial risks, political and legal risks) dependence on overexploited wild stock for seed supply, profitability, unmitigated food safety hazards or inability to secure tenure by relying on harvesting in public places
Coastal, Marine, Recreational, Cruise and Eco Tourism	No of existing entrepreneurs/activities; contribution to GDP; tax revenue; employment, exports; compliance; existence of further environmental/marine outreach activities, conservation areas; pollution cleaned; sustainable tourism activities No of total versus marine/eco specific visitor arrivals and proportion; Participation in related activities
Marine Renewable/Ocean Energy	Contribution to grid; potential existence of policy; contribution to economy - KWh/MWh; existence of research; associated economic/value chain contribution
Blue Biotechnology	Growth in IP/patents; research, bioprospecting licenses, no of graduates; businesses, entrepreneurs; species/discoveries; exports, revenue, employment, taxes
Desalination	Existence of desalination plants; proportion contribution to water supply; associated economic activity; versus other water costs; volumes and value of salt and water extracted, Proportion of Sustainable water footprint
Marine Protected Areas	Commitment to the 30% by 2030 goal legally and % of EEZ as a marine protected area; existence of equivalent budget and monitoring/enforcement capabilities; Changes in species biomass and biodiversity cover, % of area/size of MPAs formally/informally protected; growth over time; species biodiversity cover, increase in funding available, resources available; Area (ha) of new climate refugia and priority sites designated as MPAs or LMMAs for coral reef and associated ecosystems (i.e., mangroves and seagrasses) protection; Annual capital expenditures (US$/yr) for strengthened management and enforcement capacities of MPA and LMMA networks; Species richness (# of species/ha) and fish density

	(# of fish/ha) in protection areas compared to previous level; Integrated local threat index is decreased from high and very high levels (3,4,5 on the index) to low and medium levels (0,1,2 on the index), Number of coral reef protection resolutions, declarations and laws passed for governing bodies. Including allocated national budget to implement coral reef protected area management and enforcement. Ratio of protected area costs covered by the private sector vs. the public sector or grants (e.g. costs for management, monitoring and enforcement), Ratio of grants versus investments on a conservation basis
Ports, Shipping and Maritime Transport	Existence of port sustainability/decarbonisation plans; emission control areas; slow streaming; renewable energy; alternative fuels/volumes; localised emissions; on electric; presence of climate change mitigation, adaptation; pollution Vessel Energy Efficiency Index, EMP; proportion of renewable energy for vessels/ports; Growth in green port and shipping related investment and numbers
Coastal Development	% of coastline protection; proportion of offences and fines; extent of penalties; existing of ICZM/MSP; existence and effectiveness of enforcement officers, penalties; changes in property values; hedonic pricing; growth in ecotourism/sustainable versus unsustainable investment,
Ocean Monitoring and Surveillance	No of patrols versus interception rates; number of offences versus prosecution and conviction rates; % of technology detecting offences versus numbers, Enforcement capability
Marine Research Education and Training	No of research institutions growth, no of students and academics growth, growth in number of research output, patents, technology discoveries; subsidy costs versus revenue
Circular Economy -Waste Reduction	Number of circular economy activities and entrepreneurs, volumes and % recycled; associated employment; crime and social problem reduction; reduced litter clean-up costs; improved income, consumption, revenue, reduced ecological costs; Substitution of associated products
Risks	Proportion (%) of crisis conscience loan terms and deferment plans incorporated into loan agreements for businesses and initiatives at sites vs. baseline (t=0) Proportion of workforce (%) retained in linked initiatives and businesses during major shocks compared to non-linked businesses in similar sectors and geographies
Climate Change/Decarbonisation	Number of coral species resilient to climate change identified or created through breeding and genetic modification, Carbon footprints, $MtCO_2e$ per year sequestered through protection and/or restoration of threated mangrove and seagrass ecosystems; Carbon footprint of private sector (tons of CO_2/business/year) vs. baseline (t=0); CO_2, SOx, NOx, MH_4 reduction in tons per year Project lifetime emission reductions (in tonnes of CO_2 equivalent). Adaptation impact indicator ort the expected change in loss of lives, value of physical assets, livelihoods, and/or environmental or social losses due to the impact of extreme climate-related disasters and climate change in the geographical area and number of direct and indirect project beneficiaries. Degree to which resilience/vulnerability exists through potential risks, impact costs; insurance premium, asset values and associated changes over time Reductions in adding to Nationally Determined Contributions;
Marine and other Pollution	Proportion of waste recycled; pollution and waste volumes reduced; increased number of employment and revenue in circular economy; Number of waste management and water quality initiatives implemented by the reef-linked business vs baseline (t=0)
Illegal, Underreported and Unregulated Fisheries	Signatory to Port State Measures Agreement or not No/% growth of offences versus convictions Proportion of fines/penalties
Ocean Acidification	pH balance/Salinity levels; $/volume growth of coral cover and recovery; Success rate (%), speed and efficiency (e.g., m^2/year) of coral reef restoration efforts (use past restoration efforts in the same region as a baseline); Government and private sector investments (US$) into coral reef restoration efforts and coral reef restoration businesses; Coral cover (%) that survives bleaching events after restoration efforts compared to past bleaching events of similar severity and location; Number of crisis plans incorporated into reef-linked businesses and initiatives to mitigate and be more resilient to impacts of large shocks such as intense storms, disease

	outbreaks, severe bleaching events, etc. vs baseline (t=0), Number of parametric reef insurance schemes put in place vs. baseline (t=0)
Seabed Mining	Existence of policies -yes or no; existence of exploring and prospecting activities - worse score, reduces sustainability
Offshore Oil and Gas	Existence of policies -yes or no; existence of exploring and prospecting activities - worse score, reduces sustainability; associated economic activity versus number of incidents; ecological and other externality costs/indicators Proportion of budget or dependency on oil/gas versus alternative revenue streams; dependency on oil and gas versus other alternative fuels
Biodiversity and Illegal/Alien Species	Growth of sargassum seaweed and associated congestion/performance costs. Changes in alien species migration, volumes, associated biofouling, maintenance, insurance and other impact costs
Other General Indicators - Replicability/Scalability	Spinoff or Impact Potential -increases in additional employment; revenue; research; funding, investors and opportunities that have derived as a consequence of this investment; Increase in access to finance and applicants Efficiency and effectiveness
Degree to which it contributes to sustainable development	SDGs and indicators, 9 Ocean Principles, UNEPFI; Gross value/percentage of budget/revenue invested in causes. Ease of accessing financing; number of completed funding agreements.
Gender, Youth, Disabled	Proportion/percentage and number growth of each category relative to proportion of population demographics; the existence and effectiveness of related mainstreaming policies and initiatives
Stakeholder Engagement and Inclusivity, Existence of traditional rights and recipient needs/priorities	No of stakeholder consultations and forms, No of legal challenges and judicial cases; existence of a stakeholder engagement and communication policy; publishing and dissemination of necessary materials; existence and implementation of risk management and mitigation measures; social/community programs
Social/Equity where applicable	Who are the beneficiaries; are they able to pay; is there free, prior, and informed consent for project activities; how is access to benefits managed, and by whom? Numbers. Social co-benefits, such as improvements in health and safety, access to education, cultural preservation, improved access to energy, social inclusion, improved sanitation facilities and improved quality of and access to other public utilities such as water supply;
Psychology/Social	Measured changes in community perceptions towards the blue economy and their behaviour to capture the human, social, psychological aspect
Duty of Care and Accountability.	All users of the marine environment should act responsibly and be transparent about their actions' impacts on the environment.

Source: This Study

Thus, this consultant has linked where applicable, certain indicators with principles or goals. Table 2.6.2 will cover this for the UNEPFI Sustainable Blue Finance Principles. Table 2.6.3 will suggest indicators relating to the 9 Sustainable Ocean Principles and Table 2.6.4 will outline indicators that have been proposed for Sustainable Development Goal 4 as directly linked to the oceans; although it has been recommended for investments to include other Sustainable Development Goals as much as possible. Aside from the various indicators suggested for SDG14, impact investors could also consider which metrics may apply for the other Sustainable Development Goals such as ensuring access to sustainable energy (SDG7), promoting sustainable economic growth (SDG8), building resilient infrastructure (SDG9), reducing inequality among countries (SDG10), making cities sustainable (SDG11), ensuring sustainable consumption and production (12), combating climate change (SDG13), protecting terrestrial ecosystems (15) and strengthening the means of sustainable development implementation (SDG17).

Table 2.6.2 Proposed Blue Economy Impact Investment Indicators for 17 UNEPFI Principles

1: Productive: We will ensure that the projects we support restore, protect or maintain the diversity,	Changes in species growth and volumes, biodiversity patterns, % growth changes and quality of mangroves, coral reefs, seagrass, blue carbon generated and offset in volumes such as tons per

productivity, resilience, core functions and value of marine ecosystems.	year. Changes in ecosystem and real estate values, hedonic pricing,
2: Compliant: We will ensure the projects we support are compliant with international, regional and national and voluntary frameworks which underpin sustainable development and ocean health.	Existence of these frameworks and policies; the commitment to resources in terms of number of committed staff, proportion of funding versus enforcement and interception rates; changes in the number of court cases, convictions, penalty collection rates and existence of plans; Ocean Health Index, SDGs
3: Risk aware: We will ensure the activities wesupport have identified the social and environmental risks and impacts and have management plans.	Undertaking of various social, environmental, ocean, technical, market, economic and other risk impact assessments, existence of reports; extent to which how transparent it is; quantification of risks and direct, indirect and intangible costs; monitoring of various risks such as climate change, IUU fisheries, sand and seabed mining, coastal erosion and over development, marine pollution and alien with invasive species.
4: Adoptive: We will adapt our decision-making processes and activities to reflect new knowledge of the potential risks, impacts and opportunities associated with our investments.	Increase in the identification of new risks; new investment opportunities; proportion of changes in activities
5: Systemic: We will ensure that the projects we support have identified the systemic and cumulative impacts of their activities including across their value chain, across different sectors, across borders and between land and maritime based activities.	Identification of direct, indirect and intangible impact costs, systemic and cumulative impact costs
6: Incisive: We will ensure that the projects we support engage with, include, support and enhance local livelihoods and that they have a stakeholder engagement.	Type of stakeholder engagement, the frequency and the proportion of valid feedback actually considered or incorporated into changes. No of stakeholder consultations and forms, No of legal challenges and judicial cases; existence of a stakeholder engagement and communication policy; publishing and dissemination of necessary materials; existence and implementation of risk management and mitigation measures; social/community programs
7: Holistic: We will make investment decisions based on a long-term assessment and accounting of economic, social and environmental values, quantified risks and systemic impacts.	Ocean accounting methods; including of baseline blue natural, human, social and other related capital
8: Cooperative: We will cooperate with other financial institutions to promote and implement these Principles, best practises, lessons learnt, perspectives and ideas.	Development of information sharing processes; participation rates and numbers of alliance
9: Transparent: We will disclose our investments and their social, environmental and economic impacts (both positive and negative). We will also report on progress in implementing these Principles	Existence of published impact indicators; the criteria utilised and baseline assumptions across a blue economy supply chain and marine ecosystem The actual% of our investments that follow these Principles.
10: Purposeful: We will endeavour to direct investment that contribute directly to the achievement of Sustainable Development Goal 14 (Life Below Water) and other Sustainable Development Goals which contribute to the management of the oceans.	Direct proportion of investment that links to SDG14 including its indicators -Table 2.6.4. The monitoring of measures changing over time.
11: Impactful: We will ensure that the projects we support provide social, environmental and economic benefits to current and future generations.	Measuring impacts -as per the indicators elsewhere including improvements in ecosystem resilience, numbers and diversity; proportion of marine/land areas conserved and how these impacts change over time; changes in associated economic growth such as employment, tax growth etc; reductions in social issues such as crime, conflict, poaching/littering; increased investment returns
12: Precautionary: We will ensure that the projects we support have assessed the environmental and social impacts of their activities based on sound	Existence of various risk and impact cost frameworks; the volumes and output/existence of scientific data and systems to collect baseline information and subsequent changes/fluctuations

scientific evidence. Where scientific data is not available, the precautionary principle will prevail	Considering awareness of the Precautionary Principle and its application
13: Proactive: We will actively seek to develop knowledge and data on the potential risks and impacts associated with our investments as well as sustainable investments in the blue economy.	Quantification and implementation of supported risks, management frameworks and mitigation measures to become involved.
14: Diversified: Recognising the importance of small and medium enterprises in the Blue Economy we will endeavour to diversify our investment our investment instruments to reach a wide range of sustainable development projects.	The proportion/percentage growth of blue economy small and medium enterprises; the volumes of available funding available versus that implemented; the changes in the number of associated direct and indirect employment, exports, trade volumes, market share, revenue, profits or losses/costs
15: Solution driven: We will endeavour to direct investments to innovative, commercial solutions to maritime issues (both land and ocean based - including circular economy approaches that have a positive impact on marine ecosystems and ocean dependent livelihoods	Increase in IP and patents; increase in number of graduates, volume and type of research and commercialised developments from working prototypes.
16. Partnering: We will partner with public, private and nongovernmental sector entities to accelerate progress towards a sustainable blue economy.	Number of new partnerships formed; the timespan of their duration; subsequent lead to any new potential investment and funding, tax revenue, employment, exports, protected areas. The percentage/proportion of public versus private versus other funding and support.
17: Sharing: We will endeavour to Invest in and share scientific information and data on the marine environment.	Volume of data shared and format -number of reports, publications etc. Number of requests versus those who obtain data, existence of verified data access and management policies

Source: This Study

Table 2.6.3: The Sustainable Ocean Business Platform 9 Ocean Principles of Impact Investing

OCEAN HEALTH AND PRODUCTIVITY PRINCIPLE	INDICATOR
Principle 1: Assess the short- and long-term impact of their activities on ocean health and incorporate such impacts into their strategy and policies.	Ocean Health Index, national ocean accounts, ocean biodiversity, changes in risks such as pollution volumes, emissions reduction,
Principle 2: Consider sustainable business opportunities that promote or contribute to restoring, protecting or maintaining ocean health and productivity and livelihoods dependent on the ocean.	Reduction in bycatch, growth in sustainable aquaculture and fisheries; Increase in number of certified small and medium businesses, increase in training, products, community projects, revenue
Principle 3: Take action to prevent pollution affecting the ocean, reduce greenhouse gas emissions in their operations to prevent ocean warming and acidification, and work towards a circular economy.	Proportion of waste recycled; pollution and waste volumes reduced; increased number of employment and revenue in circular economy; pH balance and acidity tests; rate of coral bleaching/exposure, Volume in CO_2/other gas emissions reduction in tons per year
Principle 4: Plan and manage their use of and impact on marine resources and space in a manner that ensures long-term sustainability and take precautionary measures where their activities may impact vulnerable marine and coastal areas and the communities dependent upon them.	Existence of an MSP policy. Inclusion of MSP in planning; allocation of specific resources - funding/training etc; percentage and distance growth in marine protected area coverage and effectiveness, existence of risk management plans
GOVERNANCE AND ENGAGEMENT	
Principle 5: Engage responsibly with relevant regulatory or enforcement bodies on ocean-related laws, regulations and other frameworks.	
Principle 6: Follow and support the development of standards and best practices that are recognized in the relevant sector or market contributing to a healthy and productive ocean and secure livelihoods.	

Principle 7: Respect human-, labour- and indigenous peoples' rights in the company's ocean related activities, including exercise appropriate due diligence in their supply-chain, consult and engage with relevant stakeholders and communities in a timely, transparent and inclusive manner, and address identified impacts.	No of stakeholder consultations and forms, No of legal challenges and judicial cases; existence of a stakeholder engagement and communication policy; publishing and dissemination of necessary materials; existence and implementation of risk management and mitigation measures; social/community programs
DATA AND TRANSPARENCY	
Principle 8: Where appropriate, share relevant scientific data to support research on and mapping of relevance to the ocean.	Volume of data shared and format -number of reports, publications etc. Number of requests versus those who obtain data, existence of verified data access and management policies
Principle 9: Be transparent about their ocean-related activities, impacts and dependencies in line with relevant reporting frameworks.	Existence of frameworks and information published; inclusion of stakeholders and consultation; willingness to incorporate changes; transparency over extent of impacts; existence of external consultancy/audit/M+E processes and legal compliance via the number of associated events

Source: This Study

Table 2.6.4: Sustainable Development Goal 14 and Blue Economy Investment Metrics

Goal	TARGET	IMPACT INDICATOR EXAMPLES
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	Index of coastal eutrophication and floating plastic debris density; volumes versus volumes of persistent organic pollutants, nitrogen and others removed and changes over time
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	Proportion of national exclusive economic zones managed using ecosystem-based management approaches
14.3	Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels	Average marine acidity (pH) measured at agreed suite of representative sampling stations
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	Proportion of fish stocks within biologically sustainable levels Restoration of fish stocks -growth in volumes, biomass, revenue, reductions in species extinctions
14.5	By 2020, conserve at least 20% of coastal and marine areas, consistent with national and international law and based on the best available scientific information. By 2030, conserve 30%.	Coverage of protected areas in relation to marine areas
14.6	By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the World Trade Organization fisheries subsidies negotiation	Progress by countries in the degree of implementing of international instruments aiming to combat illegal, unreported and unregulated (IUU) fishing Existence and reduction of subsidies and other support Reduction in fishing bycatch loss
14.7	By 2030, increase the economic benefits to Small Island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism	Sustainable fisheries as a percentage of GDP in small island developing states, least developed countries and all countries
14.a	Increase scientific knowledge, develop research capacity and transfer marine technology, taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to	Proportion of total research budget allocated to research in the field of marine technology

	improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries, in particular small island developing States and least developed countries	
14.b	Provide access for small-scale artisanal fishers to marine resources and markets	Progress by countries in the degree of application of a legal/regulatory/policy/institutional framework which recognizes and protects access rights for small-scale fisheries
14.c	Enhance the conservation and sustainable use of oceans and their resources by implementing international law as reflected in UNCLOS, which provides the legal framework for the conservation and sustainable use of oceans and their resources, as recalled in paragraph 158 of The Future We Want	Number of countries making progress in ratifying, accepting and implementing through legal, policy and institutional frameworks, ocean-related instruments that implement international law, as reflected in the United Nation Convention on the Law of the Sea, for the conservation and sustainable use of the oceans and their resources

Source: United Nations Website 2021.

In determining which indicators to utilise and methods to follow, stakeholders may rely upon their own judgement but certain factors can assist in a final decision:

- *Reputable/Credible*: These align to internationally recognised, scientific, financial and other sources.
- *Accuracy:* The impact indicators have proven to accurately monitor, measure and ascertain the anticipated risk or impact.
- *Consistent:* These scenarios retain consistency across many research sources. Relying on this approach ensures a standardised methodology. It avoids data fragmentation and variable differences across a range of projected causes, impact costs and disruption risks.
- *Comprehensive:* These scenarios and assumptions consider both climate and non-climatic, interdependent causes or drivers of risks and impact costs to the blue/ocean economy.
- *Autonomously Verifiable/Reduce Complacency:* Certain studies are based on scenario assumptions but do not independently verify them for consistency/accuracy. These increase further stakeholder uncertainty, wishing to swiftly adapt but also to avoid wasting scarce fiscal, time and other resources. Without doing so, divergent impact metrics, risk and impact cost method approaches and data further multiply systematic error, uncertainty and maladaptation costs. They increase the significant opportunity costs associated with risk underestimation, through failing to justify scenario evaluation/selection criteria and underlying theoretical frameworks.
- *Accessible:* The greater institutional research, information gathering/analytic, technological and skilled professional capacity of developed countries in climate change projections can aid emerging SIDS countries including Caribbean nations, with similar constraints through accessible data. This allows countries to benefit without wasting scarce resources in isolated efforts and implement adaptation strategies more swiftly, to minimise impact costs.
- *Relevant:* To the screening criteria, investment or development priorities and stakeholder interests.
- *Simple/Transparent*: minimising litigation, miscommunication, translation and adaptation costs.
- *Effective:* These data sources provide the basis of myriad existing efforts in adaptation for stakeholders. They are advocated in a significant number of existing research sources.
- *Equity:* Data/scenarios are openly accessible to all and simple to verify.
- *Robust/Costs:* It provides autonomously verified, consistent climate change projections, that are international government accepted downscaled to Caribbean regional and individual island examples. This minimises individual stakeholder research, training, business forecasting, administration and adaptation costs. Data needs to be succinct, accessible, and affordable.
- *Flexibility:* The framework and indicators can be adapted to available data, timeframes, various risk scenarios, implementation available, financial instrument type and blue economy activities.

- *Data Availability:* Newly present high spatial-temporal resolution models combined with satellite imagery for individual islands improves downscaling from general circulation models to regional scale models. It improves data quality.
- *Practical:* It matches computational, institutional and informational capacity; given funders, organisations and governments' resource constraints.
- *Comparable/Generalisability:* Utilised by myriad stakeholders, these assumptions, scenarios and method techniques can be applied to different case studies with a common standard of evaluation

3: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

In conclusion, the timing and opportunities have never been more apt for restructuring Caribbean economies towards a truly sustainable, blue economy-based future, favouring economic diversification, ecological conservation and resilience and social welfare, following the COVID19 pandemic recovery. There has been a surge in interest among potential investors in their search for marketable products; methods and impact indicators that not only deliver profitable returns, but favour a socially inclusive, long term ecologically sustainable, climate change resilient and improved ocean/blue economy future. Equally promising has been the commitment by governments and policymakers Grenadines to undertake supporting specific blue economy policies (still in draft), reviews of existing legislation; development of National Blue Economy Coordinating Committees and to review potential finance; incentives, institutional capacity, resources needed and data/monitoring processes required. A review of recent developments identified a number of significant achievements in marine conservation, fisheries, aquaculture, tourism, ocean energy feasibility studies and others, across this consultancy's scope of 3 countries within the Lesser Antilles. However, it and a systematic, sectoral analysis based literature review of over 120 documents and stakeholder engagement; recognised the current implementation gap of determining which types of funding mechanisms were available, the screening and selection mechanisms, the motivations and principles utilised by stakeholders, their concerns or need to overcome existing barriers to accelerating finance and to measure impact via physical indicators; to focus on practical implementation of the actual blue economy, through accelerated availability of finance.

As identified in a diversity of sources from national/public sector, to international and multilateral development finance institutions, to NGOs, private sector impact investors, entrepreneurs and others, myriad opportunities exist. This report and source's conceptual contribution is to map progress towards sustainable ocean finance for the blue economy and to strive towards overcoming uncertainty as one of the greatest barriers to solving the global challenges facing the oceans - access to finance within the scope of all the consultancies recently undertaken. Those within the three countries and by extension, the Caribbean and globally need to be able to utilise investments proactively to fuel innovation, ecosystem protection, enterprises and other solutions. Equally, investors are becoming more and more committed, seeking guidance. In response this source provided a partial identification, summary and analysis of blue economy developments, risks and challenges that provide a basis upon which funding and other forms of support can be channelled before. It also provides a brief update on identifying certain investors, their approaches and analysing trends to identify existing gaps, guidelines and inspirations to ascertain the sincerity of existing efforts.

3.1: Summary of Existing Knowledge and Gaps

Existing knowledge of blue economy investments and the financial landscape reveals an increasing concern with the notions of sustainability, and not just economic but other social, environmental and other indicators or returns. Impact investing, whether through the blue economy, green economy, climate finance or other processes reveals a corresponding wave of interest since 2018, including attention in the media and through webinars. This review

has included the more relevant and eligible blue investor candidates. However, this research recognises the superficiality of the associated analysis as a limitation, but recognises many participants and entities, such as those surveyed, have only primarily started since 2017/2018 to prioritise this area, hence only a limited sample was provided. They hence often provide minimal information as to how successful their investments have been, the criteria and the methods, thus undermining several of the 17 core UNEP Sustainable Finance Principles, including Transparency (9), proving their impact (11) or contribution towards achieving Sustainable Development Goals (10), or a sufficient rate of return on investment for the most part. Many do not publicise the scientific evidence considered indispensable for the Precautionary Principle (12) or risk management (3) or identifying systemic risks (5).

However, the participants who have participated as recipients and providers of funding identified in this Report, several of whom have provided insights, are gradually demonstrating at least an intention towards the other Blue Economy Principles, whether through providing publicity on the subject and adopting related practices, methods and the UNEPFI Principles; along with the Framework. These principles include: productivity in preserving marine ecosystems (1), legal compliance (2), the need to be adoptive for new opportunities as they emerge (4), incisive for local livelihoods and communities (6), consider economic, social and environmental values (7) and cooperate with other stakeholders (8). Several, such as the World Bank, International Blue Carbon Initiative, Blue Natural Capital Financing Facility, Commonwealth Marine Economies Programme and Ocean Assets Institute are being especially committed to additional research and information being proactive (13). Others such as the Fishing Accelerator, Blue Bio Value and Mermaid Investments focus on small and medium enterprises and initial entrepreneurs (14). When scaling up funds such as Althelia/Mirova become more committed. Many are committed to solutions to core problems and risks (15) and prepared to partner with others (16) including data sharing such as the Blue Prosperity Coalition. Sources are frequently self-publicising, skewed away from any adverse potential impact, even where mistakes and certain experiences, can be invaluable to learn from.

In investigating the sources, the structures, the various screening criteria, methods and other types, the aim is to assist stakeholders in determining the most relevant approach to undertake blue economy finance and investment. This includes providing insights, wherever possible, to aid access to these sources; to understand investors and local projects' best practices, case study successes and failures of what worked and what failed. Existing knowledge concludes that, whilst all agree on the value of impact investment and sustainability, few truly consent on the definitions and processes to take. Many agree on blue, green and impact bonds and user fees as common instruments, the user Pays, Precautionary and "Do No Harm Principles". There are certain factors and principles often repeated such as the ecosystem-based approach, UNEPFI, Sustainable Development Goals, UN Global Compact 9 Ocean Principles and a few others, which are recurrent often enough to be considered in any future approach.

This was further confirmed through consultation with an initial 22 stakeholders via interviews and surveys out of a sample poll of 300 stakeholders, 50 total responses and 40 provisionally interested in cooperating. Of those, responses were received to provide a total of 37. Some of the sources and participants also indicated insufficient awareness or expertise at converting to the blue economy; a lack of fiscal incentives or administrative/political support; a lack of clarity over a comprehensive investment framework and the frequent absence, of suitable, investment ready and marketable products. Although the sample is small; it is hoped that it can be increased in future research. Stakeholders still have a number of unresolved challenges in existing research. Aside from disagreement over the most effective instruments, methods, screening criteria, sectoral priorities and impact investment indicators; these include challenges of restructuring existing economies, financial, legal, administrative and other systems or people. Other challenges or questions include but are not limited to the following:

- *How can investments worldwide be shifted towards activities that help build a strong and healthy blue economy, with particular reference to the 3 Caribbean countries under this report?*
- *Integrating natural capital in financial markets: debt-for-nature transactions for small island developing states?*
- *What are the drivers for sustainable Blue Economy investments?*
- *Defining the value chain of sustainable Blue Economy Investments.*
- *How to develop innovative finance and legal approaches to reduce liability and ESG greenwashing risks?*
- *Public Private Partnerships using innovative finance and legal approaches to scale investment.*
- *What legal & regulatory tools are missing or could be strengthened to accelerate private investments in the blue economy?*
- *For the Fund Managers, what are the best ways to select the good sustainable companies?*
- *What is needed for Ocean Funds to deliver scalable impact as well as competitive market returns?*

3.2: Developing the Blue Economy Finance and Investment Framework. Highlighted Risks: Additional Model Refinements and Considerations and Mitigation; Recommendations

In response to Activities 1 and 2 and motivated partly to overcome the existing research gap, combined with the lack of global consensus, a detailed methodology has been devised and presented as the basis for a Blue Economy Finance and Investment Framework in section 2.6. This included the following 12 Stages:

I: Identify and prepare suitable projects/investment opportunities - a clear vision for the framework; e.g. Section 2.5.1.
II: Identify and investigate the potential sources of funding, target audience, timeframe, size of investment.
III: Conduct an initial screening criteria assessment to devise appropriate project, instruments and investor types (Table 2.6).
IV: Undertake an initial pre-market feasibility study including potential customer input. This aims to see if any subsequent effort makes sense practically.
V: Calculate natural ecosystem, economic, social and other baseline valuations of marine/ocean resources/activities related to the blue economy sector for the proposed investment.
VI: Conduct a potential ocean, ecological, economic/market, social, policy, technical and other risk and Impact Cost Assessment.
VII: Consider an institutional capacity analysis and resources required for implementation. Ascertain any potential policies that may need modifying, evaluate and prioritise risks, suggesting changes.
VIII: Enact implementation of the actual project/investment proposal, simultaneously incorporate stakeholder awareness and marketing, consultation and engagement. Consider implications across blue economy sectors, supply chains, scenarios, timeframes and risk types.
IX: Report back to successful and failed applicants as to why they were successful or failed, with productive feedback and advice. Consider identifying mentoring or support to find other investors and funders, particular, smaller community-based organisations
X: Consider direct, indirect and intangible costs, cumulative, transboundary and other blue economy impact indicators of intervening; against opportunity costs of not intervening, selecting alternative decisions or inaction cost.
XI: Subsequent investment decisions to halt, alter, cancel or grow the project can be determined based on the Polluter Pays, Do No Further Harm and Precautionary Principles, along with protecting indigenous and human rights. This decision needs to be evaluated in the short run/1 year, medium and long term.
XII: Undertake performance monitoring and evaluation based on pre-set impact investment indicators.

The above Blue Economy Investment and Financing model is advised to need further refining following consultation with specific investors and other stakeholders, in being potentially flexible in relation to specific constraints, investment project priorities and other concerns. It aims to be flexible to allow for baseline variables, assumptions and indicators to be adapted to changing circumstances and risks not only to changes to marine ecosystems. Other factors include the size/scale of the project and capacity of the participants, which differs significantly between larger multilateral organisations, governments and NGOs for which have more of the capacity needed to

undertake such a framework. Simpler aspects and fewer impact indicator metrics may be needed for smaller projects, investments, entrepreneurs, businesses and community-based organisations. Several stakeholders referred to capacity constraints with small project leaders. The High Level Panel for Sustainable Ocean Economy favour monitoring continuous changes in oceans, ecosystems and climate. These may not only clearly indicate whether or not interventions are working, but also how effectively they can contribute to overall ocean health or ecological balance sheet, income and benefits. The challenge to overcome is the lack of homogeneity over being able to centrally provide comparable ocean accounts statistics, baseline quantification of potential investment benefits along with associated risks and impact costs during the implementation stage. Ultimately there is a need to measure the effectiveness of this investment intervention through the provision of certain impact indictors, such as the examples provided above.

It may be insufficient merely to establish the financing mechanism, without stakeholder input and impartial reviews to determine the effectiveness of its impact. Many nations will need technical guidance and support to profit from the blue economy including domestic resource mobilisation. Sovereign wealth and pension funds are used to seeking stable long term returns and yet committing to future economic, ecological, climate and social stability via the oceans is resoundingly shaping up to be among the soundest strategies, simply at curtailing disruption costs, aside from any other revenue, carbon sequestration and other benefits. Many nations across Africa, the Caribbean, Southeast Asia and the Pacific may be dependent upon aid; yet restructured philanthropy could have even greater impact if it were to be restructured around many of the principles developed here for this proposed blue economy finance and investment framework. The challenges remain for any proposed investment to overcome traditional aid/foreign capital flow dependency and existing constraints, such as those across SIDS including Barbados, Grenada and St Vincent and the Grenadines.[153] . Another includes converting notoriously limited, risk-averse financial and insurance sectors in these islands and others.

In developing blue bonds and other financial instruments the argument is for transparency in their efforts to attain nature-based solutions and other targets. Many investors will not be familiar with them, but will be more likely to be conscious of and experienced with, their sustainable, green and climate finance counterparts. [154] These instruments need carefully determined projects and precise, publicly available information as to which projects are eligible, which criteria is used for selection and why - i.e. its links to furthering the SDGs, UNEPFI Blue Economy Principles and UN Global Compact, 9 Ocean Investment Principles. Fundamentally, these measures succeed on the extent to which they attain improvements in ocean/coastal/climate ecosystem resilience, health and productivity. Any direct blue economy, social, community, cultural and other function is secondary - for without protecting the oceans, we lack the others. Therefore, blue carbon and other ecological indicators are simple-to-include metrics. Developing communication and awareness via ocean literacy may help to convince more to convert and participate in a sustainable, round of investments. Not only do these and other entities need to identify individual and joint de-risking of investments in the blue economy, they may be willing and able to cooperate. It concedes the need for more information sharing, coordination and cooperation, as only through these approaches is a completely new framework able to be successfully deployed, with aware stakeholders who can actively utilise it for enabling true ocean survival, linking to prioritised risks, their own concerns and blue economy/marine ecosystem needs. Not only may new funding be required but existing financial systems, projects and institutional capacity may need to be subsequently converted.

3.3: Proposed Ocean/Blue Economy Finance and Investment Opportunities

[153] UNDP, 2017, "Financing the SDGs in the Pacific Islands: Opportunities, Challenges and Way Forward," viewed 6 September 2021, https://www.undp.org

[154] Blue Natural Capital Financing Facility, 2019 (b), "Blue Bonds: Financing Resilience of Coastal Ecosystems," BNCFF Report, viewed 6 September 2021, https://www.bncff.org

As an initial area of focus for the above framework and the cultivation of potential market ready investments, Section 2.5 identified initial areas to which the above investment framework can be applied, suitable funding sources applied for and instruments developed

Although not directly mentioned, several other possible investment projects are proposed by this consultant based on observation.

18. Investigation into aquaculture and blue biotechnology potential
19. Investigating offshore wave, wind, current, tidal, salinity gradient and Ocean Thermal Energy Conversion across all three nations. Ocean/Marine renewable energy has recently been identified as having potential
20. Investigating the feasibility of extending ferry links across Caribbean
21. Considering coral reef restoration/other area marine protected area, conservation restoration and coastal recovery e.g. Artificial Reef and mangrove restoration
22. Investigating setting up basic marine education and research - not only to support blue economy courses including finance and entrepreneurship and community courses/vocational colleges addressing sustainable fisheries/aquaculture etc.
23. Investigating blue carbon/biodiversity offsets and markets across all nations
24. Investigating maritime transport and port decarbonisation
25. Investigating cabotage possibilities and any opportunities to develop further local cargo shipping, boatbuilding and repair facilities.
26. Investigate any marina, eco and cruise tourism recovery prospects and local value chain development given the COVID19 recovery pandemic/travel restrictions.
27. Development of local blue economy entrepreneurship and innovation.
28. Investigation into desalination and any water security implications
29. Developing marine exploration, research and innovation, finalising policies related to seabed mining and offshore oil and gas prospects to provide certainty over the extent of their sustainability.
30. Developing the circular economy and investments into recycling/waste management etc to reduce and reprocess sources that can endanger coral reefs and the marine environment
31. Investments into securing sustainable fisheries, linked to the circular economy, local marine management and import substitution such as introducing local seafood into supermarkets and other products.
32. Investigating the potential prospects of sargassum seaweed and associated value adding opportunities.
33. Focusing on campaigns against turtles and dolphin meat being harvested -supporting related NGOs to become tourist and research centres
34. Working with local NGOs to favour decentralised control of marine management funding as an option for leveraging access to alternative funding sources, information and technical expertise and others.

Aside from the above investment related opportunities, there may be a number of professional vocations needing training, research and entrepreneurs in need of support; large, medium and small- scale enterprises in demand for any form of financial, technical, legal or other support. This would remain conditional upon increased awareness and support. For example, this could include certain funding opportunities linked to marine conservation or protected areas such as in Table 3.2.1.

Table 3.2.1: Potential Funding Solutions for Marine Conservation/Protected Areas

MPA Atlas	Terra Viva Grants Directory
Waitt Foundation/Blue Prosperity Coalition	Funds for NGOs.org
Open Channels.org	Contacts.ramsar.org
Funding the Ocean.org	Marisla Foundation
Blue Action Fund	Conservation Finance Alliance
African Foundation Oceans Without Borders	Peace Parks Foundation
Leonardo de Caprio Foundation	Pew Charitable Trusts
Gordon and Betty Moore Foundation	Ocean Foundation
Save Our Seas Foundation	Oceana
Coral Reef Alliance	Surf Rider Foundation

Bertarelli Foundation	WWF
IUCN	Project Aware Foundation
Blue Ventures	World Bank Pro Blue

Source: This Study.

3.4: Recommendations for Future Research and Moving Forward/Report on Activity 3

In conclusion this consultancy combined the following elements to develop the nucleus of a potentially integrated Blue Economy Finance and Investment Framework.
I: Identify existing potential sources of blue economy and sustainability themed funding and best practises through a literature review of global and Caribbean specific stakeholders.
II: Consider the development of potential screening criteria.
III: Consider the various instrument types, tools and mechanism criteria.
IV: Identify motivations of the associated stakeholders involved as a basic risk assessment.
V: Consult stakeholders for their experiences and insights
VI: Identification of a pipeline of investable opportunities, projects and initiatives
VII: Establish associated distribution channel mechanisms to simplify access to finance and investments'
VIII: Development of the implementing mechanism and stages
IX: The formation of associated impact indictors to monitor the extent of progress towards the blue economy.

Moving forward, Caribbean and other nations may each need their own specific Blue Economy Investment Strategies and Roadmaps sufficiently integrated into their Blue Economy Roadmaps. It is also further advised that the proposed Blue Economy Finance and Investment Framework is customised further to reflect the specific requirements of various stakeholders for all three nations, as briefly proposed above. Public, private sector, aid agency and entrepreneur project requirements are advised to be identified as soon as possible and every manner of political, legal, financial and technical support necessary to support the implementation of these projects is highly recommended. The Blue Economy Implementation or Ocean Coordinating Committee and respective government ministries are advised to consider some form of centralised coordinating investment and finance support agency, specifically for the blue economy, not only to develop these projects but increase awareness and support for the framework; look to develop associated financing instruments, extend marine protected areas towards the 30% by 2030 to attain funding, and work with various funding/business agencies to improve success and interest. It will need to sufficiently examine the proposed mechanisms, tools and recommended best practises of blue economy implementation through financing.[155] These may need to investigate a variety of sources and blue economy instrument types. Without a centralised responsible agency; related databases, the development of specific instruments, projects, research, marketing and investment opportunities, many stakeholders will lack the necessary certainty and will to invest. The developed framework advocated in this Report concedes the need to consider accurate ecosystem valuations and a supportive accompanying policy framework, so investment flows into blue economy and marine conservation activities.

To implement this framework, this Report advises conducting a further series of workshops and publicising the findings/various sources detailed here to maximise the impact and impetus of this report, overcoming traditionally observed barriers to finance for Caribbean and other large ocean, small island or emerging states. The provision of impact investment metrics and best practices can aim to entice greater interest in converting activities and sectors to truly sustainable blue economies. This may help counteract innate risk aversion based on asymmetrical information, inexperience and other concerns. It also recommends an evaluation of existing blue economy and

[155] Seychelles Government, 2018, "Seychelles Blue Economy Strategic Policy and Framework 2018-2030: Chartering The Future," Port Victoria.

related financing portfolios for existing and future projects or investments to indicate just how resilient, vulnerable or volatile, investment decisions really are. As characterised by the fact that very few of these instruments exist, the very limited global funding committed to oceans and marine conservation and related sustainable business support; the lack of tangible progress on climate change, marine pollution, illegal fisheries and other threats; it appears that few governments, investors, individuals or communities understand just how susceptible existing assets, ecosystems and capital commitments may be to climate change and other ocean/marine risk exposure. There remains a need to encourage widespread dissemination and utilisation of the Framework, its underlying principles, methods, best practices and measured sustainability or impact investment indicators. Those seeking to undertake blue bonds or other forms of financing, with which stakeholders remain unfamiliar, may need cooperation and partnerships to be formed with more experienced entities. Stakeholders will need roles to be allocated, (whether capital providers, financial catalysers, pipeline developers of marketable products, technical advisors, ecosystem builders, investment enablers or other roles). The nature of the investment, its anticipated duration and maturity date, risks and structure all need to be ascertained and weighted in, but adapted to the realities of a COVID19 and postCOVID19 recovery, among other factors.

Given the scale of the challenges faced by Caribbean nations, from hurricane and volcano recovery, to reduced tourism from the pandemic; to a surge of climate change, sargassum seaweed, marine plastic and other pollution, high risks of unsustainable coastal development and other resource pressures, there is a need to ensure improved access and security related to blue economy finance and investment. However, as with most investors, all are notoriously secretive when it comes to actually disclosing their investment screening, full application process and to publicise metrics related to impact and success. Many are reluctant to actually be contacted as survey/ interview participants.

Table 3.4: Summary of Stakeholder Engagements and Their Application to Barbados, Grenada and St Vincent and the Grenadines Blue Economy Study

Stakeholder	Sector	Potential Relevance to the Blue Economy
Response I -	Consultant/Academic	Specialist in marine environment/blue economy including related opportunities
Response II -	Global Aquaculture and Fisheries Impact Investing	Open to Investing if conditions are right
Response III	Multilateral Finding Organisation	Looking at supporting the three countries through investments, pilot projects, consultant research and institutional capacity building
Response IV:	Nongovernmental organisation and entrepreneur specialising in coral reefs/marine protected areas, tourism and finance opportunities.	Prepared to look artificial reefs/other conservation financing and implementing blue economy solutions, under certain conditions
Response V:	Blue Economy Consultant, Activist and Entrepreneur	Prepared to be involved -aiding to implement; entrepreneur with ideas and potential for support
Response VI:	Academia/Government Technical Advisor; specialist in environment, climate change and renewable energy	Links to government; interested in applying climate change expertise to blue financing/impact solutions
Response VII:	Youth Empowerment, marine conservation/blue economy awareness/training and outreach/NGO	Prepared to help governments in creating awareness, opportunity and involvement around youth
Response VIII:	Specialties in structuring blue bonds, accessing finance and improve capacity	Able to assist in supporting access to blue finance/structuring solutions to 3 Caribbean countries -although Africa, Asia, Pacific or non-Caribbean expertise

Response IX:	Global/Caribbean Funder of marine protected areas	Might be willing to help fund marine protected areas and create sustainable fisheries, blue carbon, aquaculture/tourism opportunities under certain conditions such as community support and political will/commitment to 30% by 2030.
Response X:	Expertise in blue finance/consultant and implementing	Not directly but able to consider providing related advice/support to private sector/state commitment to its Sustainable Blue Finance Investment Principles
Response XI,	International climate/green/sustainable finance source	Not directly to the blue economy but prepared to consider through designated entity if these areas of focus are incorporated into proposal
Response XII:	Nongovernmental organisation/ technical expertise, capacity building and support reef data impact indicators	Willing to work to implement MPAs and support funding applications
Response XIII:	Private ecotourism operator, marine conservationist, reef monitoring and impact indicators data gathering, support artificial reefs	Willing to work w to implement blue economy awareness, MPAs, artificial reefs, ecotourism and support funding applications - small business
Response XIV:	Tourism representatives, blue economy concerned enterprises /individuals	Willing to support engagement, implementation and outreach
Response XV: Multiple Stakeholder Representatives.		Willing to partner with governments to further promote blue economy entrepreneur-based funding
Response XVI:	Funder of blue economy fisheries, blue bonds, aquaculture/other projects	May be prepared to invest in local blue bonds/instruments, focus was in Caribbean but moving to Europe/Asia, may consider investing locally in a few years if projects exist
Response XVII: GIZ	NGO, Marine Funding and Institutional Capacity Building Representative	Willing to look at peer to peer learning or information exchange or provide technical implementation aid
Response XVIII:	Specialist organisation linking access to finance/technical expertise related to sustainable marine protected areas	Willing to help support/improve implementation of MPAs, related governance, data collection and finance
Response XIX,	Serial Investor.	Immediately willing to invest $150,000 to $5 billion for blue economy projects
Response XX:	NGO Representative.	Willing to work to implement MPAs and support funding applications
Response XXI:	Impact Investor	Looking to improve private sector ties with government, improve opportunities for local entrepreneurs/investors and a management consultant for expertise
Response XXII:	Multilateral financing organisation	Actively searching for funding opportunities related to infrastructure, flood management, waste, circular economy, water and blue economy
Response XXIII:	Government ministry in charge of blue economy	Involved in coordinating and implementing the blue economy
Response XXIV:	Government ministry involved in implementing blue economy	Government ministry in charge of Barbados blue economy
Response XXV:	NGO	Rarely offers direct finance but serves as potential supporter in building strategic conservation projects, seafood finance and related blue economy initiatives

Response XXVI:	Multilateral development financial institution	Provides loans, supports entrepreneurship, other projects
Respondent XXVII:	Nongovernmental organisation	Source of support to finance/implement blue bonds and MPAs
Respondent XXVIII:	Commercial banking sector Barbados	Investigating sustainable, green, blue economy
Respondent XXIX:	Fisheries sector government representative	To help support and coordinate fisheries and aquaculture related projects and priorities
Respondent XXX:	Impact investor /advisor/ sustainable and blue finance sector	Impact investor, connector/facilitator of investment with online education resources, advisor to entrepreneurs
Respondent XXXI:	Nongovernmental organisation	Assist in MPA information, monitoring etc
Response XXXII:	Dive shop operator, marine conservation via mangroves, artificial reefs, entrepreneurship	Seeking funding support for various projects
Response XXXIII:	Diplomatic/source of funding and other support	Provided a table of current Caribbean projects engaged in
Response XXXIV:	Diplomatic/source of funding and other support	Links to CMEP, Blue Planet Fund, other finance sources
Response XXXV:	Multilateral organisation	Looking at improving fisheries social security, insurance and CC4Fish climate change adaptation
Response XXXVI:	Funder of National Conservation Trust Funds in Caribbean	Funded Trust Funds, looking at blue biotrade.

Source: Dyer J A; This study. October 2021.

One recommendation for governments and others is the need for centralised repositories -of available information of sustainable local and international funding sources and criteria, along with suitable related government/private sector focal points linked to existing investment promoting agencies. This would be of direct immediate use to individual applicants, needing general and individual guidance. Governments could provide access to the ecological, fisheries and other information needed to model potential risks and profits, through streamlining and reforming existing data-based systems. There is also a need to try and link investment impact indicators and criteria into government and donor related projects. Additionally, centralised databases of blue economy, climate change and other related research and consultancy studies, would clarify any gaps in implementation which could them be clarified. There is also the need to consider developing skills audits related needs to identify whether current skills and institutional capacity remain sufficient for implementation in terms of familiarising stakeholders with the framework, the divergent types of investment and instruments to be determined and the means of structuring and undertaking related investments. There also is advised to communicate directly and more frequently with OECS, World Bank, Inter-American Development Bank, the NGOs and others; as there appears to be the risks of considerable overlaps in relation to improving blue economy finance, investment and governance, between these agents. This suggests a peer-to-peer knowledge exchange and potential collaboration or pooling of resources, rather than more silo-based approach would be more productive, given the evident fatigue of certain stakeholders providing limited indication of willingness to participate.

As stated, there is a significant research gap over blue economy investments and finance. To further improve upon the above Framework, this Report highly recommends the following 10 stages to develop the blue economies. This consultancy's next project stage in Report 3, will investigate whether existing governments, their systems, stakeholders, resources and structures are sufficiently coordinated and effective to actually support and undertake any blue economy policy or finance related investment decision. It will therefore aim to ascertain if certain changes can be undertaken to improve this process, responding to common community and financier

concerns over government willingness and capacity to deliver a true blue economy. It is further recommended to consider responses identified by stakeholders for a clear need to try and work out if any simplified frameworks and criteria can be devised for selecting, implementing and evaluating smaller scale projects. This is especially critical for those projects, businesses and ideas with less experienced, trained or resource equipped project managers and systems.

Recommendations for Implementation:

1. Have a coordinating framework with investor friendly conditions, including a blue economy investment champion who can be approached by entrepreneurs, businesses, aid, other sources of finance, investment and innovative solutions for support and assistance.
2. Improve the coordinating committee to include a Technical Secretariat from a regular and flexible roster of experts.
3: Support updated surveys ascertaining the conditions of the marine ecosystem for blue economy/natural capital valuation, extent of resilience, risks and associated opportunities
4. Identify market and investment ready projects.
5. Apply, refine and test the proposed framework across blue economy sectors, locations, timeframes etc.
6. Identify and reach consensus on standard selection criteria, methods, metrics and impact indicators.
7. Promote greater awareness over finance framework and access.
8. Empowerment via workshops, training and capacity building.
9. Report back to successful and failed applicants as to why they were successful or failed, with productive feedback and advice. Consider identifying mentoring or support to find other investors and funders, particularly smaller community-based organisations
10. Devise or alter systems necessary to accumulate data.
11. Provide sufficient resources necessary for independent monitoring and evaluation.

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List of Entrepreneur Resources

(over page)

List of Blue Economy/Ocean/Marine/Related Clean Tech Startup Potential Accelerators, Incubators, Competitions and Entrepreneur Resources

The following table provides a list of potential resources to serve in financing and supporting Caribbean blue economy entrepreneurs is based on work as both in private capacity and as a World Ocean Council Associate of the Global Blue Economy Innovation Initiatives Network. For more information please consult info@worldoceacouncil.org https://www.oceancouncil.org/wp-content/uploads/2020/11/WOC-News-Release-2020-10-30-Global-Blue-Economy-Innovation-Initiatives-Workshop-FINAL.pdf

Other resources also include The Liquid Grid https://theliquidgrid.com/investment/ and Ocean Opportunity Lab's TOOL https://theoceanopportunitylab.com/

Name	Type	Location City	Operating Body	Website
ADMIRALTY Marine Innovation Programme			UK Hydrographic Office	
Aix Labs				https://www.apollo.io/companies/AIXlabs---Innovation-Ecosystems---CxO-and-startup-advisory-services/5e55d6decffb800001cd8e3d?chart=count
Amplifier	Startup Supporter/VC	Germany		https://amplifierlab.io/
Alliance of Blue Economy	Network	Shenzhen		
Anaxago	Accelerator	Paris		https://www.anaxago.com/
Angel Labs	Startup Incubator			https://www.linkedin.com/company/angel-labs
Angel List	List of startups etc.	US		https://angel.co/
Antler	Incubator			https://www.antler.co
AquaSpark	Investment Fund	Utrecht		https://www.aqua-spark.nl/who-we-are/
Aquaculture Innovation Challenge – NL	Event			https://aquaculturechallenge.com/en/
ArabNet	Events Management	Beirut		https://www.arabnet.me/
Austral Fisheries innovation challenge				
Baltic Blue Bioeconomy accelerator				
Blue Action Lab	Accelerator/Supporting Hub	Freeport		https://www.blueactionlab.com/about
Blue Bio Value	Accelerator	Lisbon, Porto	Oceano Azul	https://www.bluebiovalue.pt/
Blue Economy Solutions			NLA	

Blue Incubator and Blue Institute	Incubator	Plymouth		https://blueincubator.com/
Blue Innovation Challenge 2020			HK MIT	https://hkinnovationnode.mit.edu/2020/09/23/blue-innovation-challenge-2020/
Blue Invest -EU	Incubator, Coach, events	Europe		https://webgate.ec.europa.eu/maritimeforum/en/frontpage/1451
Blue Ocean Leading Drivers (BOLD)		Spain		
Blue Pipeline Incubator (BPI) of Alaska Ocean Cluster (AOC)	Incubator	Anchorage		
Blue Startups				
Blue Tech Accelerator	Accelerator	Portugal	Portuguese Ministry of the Sea, FLAD (Luso-American Development Foundation)	http://bluetechaccelerator.com/
Blue Growth Patras Competition			Aephoria.net	
BlueSwell Incubator	Incubator	New England	SeaAhead, New England Aquarium	https://blueswell.sea-ahead.com/
Blue X	Incubator	Australia		https://www.blue-x.co/
Braid Theory				
Buccaneer Delft	Accelerator	NL		https://buccaneerdelft.com/
Building Global Innovators	Accelerator	Lisbon		https://www.bgi.pt/
CAPP-Commitments Accelerator for Plastic Pollution	Accelerator			
Captain's Table	Challenge Competition	Hong Kong	HK Young Shipping Assn	
Caribbean Climate-Smart Accelerator				

Catapult UK – Offshore Renewable Energy (ORE)	Innovation Center	Glasgow		https://ore.catapult.org.uk/
Catapult UK – Satellite Applications	Innovation Center	Oxford		https://sa.catapult.org.uk/
Centre for Ocean Ventures & Entrepreneurship (COVE)	Innovation Center	Nova Scotia		https://coveocean.com/
Clean Tech Forum	Event	San Francisco		https://www.cleantech.com/event/cleantech-forum-sf/
Conservation Finance Alliance (CFA) Incubator				
Conservation International Blue Accelerator Fund	Accelerator		Conservation International	
Conservation International fisheries innovation hub for S Pacific			Conservation International	
Conservation X Labs	Accelerator	Washington, Seattle		https://conservationxlabs.com/
Creative Destruction Labs - Ocean Stream				
DEVELOP Competition - Ocean Observing Prize			NREL	https://americanmadechallenges.org/oceanobserving/develop.html
Duke University				
Dutch Marine Energy Centre (DMEC)				
Eastern Pacific Shipping Accelerator	Accelerator	Singapore	Tech Stars	
EC Blue Invest Platform	Event	Malta	European Commission	https://blue-invest-mediterranean.b2match.io/home
Emergent Oceans	Entrepreneur Support	Paris		https://emergentocean.com/
End Plastic Waste Innovation Platform			Plug and Play	
Endowment for Clean Oceans	Event	Washington		https://www.endowmentforcleanoceans.org/

EU Startup Prize				
Euromaritime Startups	Event			
Evolen'Up	Industry Assn	La Défense		https://www.evolen.org/
Finnish Maritime Accelerator	Accelerator	Turku	Turku Business Region	https://maritime.turkubusinessregion.com/
Fish 2.0		Carmel, California		https://www.fish20.org/
Fisheries Innovation Scotland	Cluster	Scotland		https://fiscot.org/
Floating Wind Technology Acceleration Competition	One time? Accelerator, Event		Carbon Trust	https://www.offshorewind.biz/2019/09/11/floating-wind-technology-acceleration-competition-opens/
For Sea Invest	Entrepreneur Support/Invest			https://mt.linkedin.com/in/vbollier
Forum Oceano		Portugal		
Fynd Ocean Ventures	Entrepreneur Support/Invest	Scandinavia		https://www.linkedin.com/in/marenhjorthbauer/
GAA Innovation Award			Global Aquaculture Alliance	https://www.aquaculturealliance.org/goal/innovation-award/
GCRF Global Seaweed	Research Program		Global Challenge Research Fund (GCRF)	https://www.globalseaweed.org/
Genesis	Startup Supporter			https://m.facebook.com/genesiscentre/posts/10159213200199658
Global Innovation Lab for Climate Finance	Incubator, Accelerator		The Lab	https://www.climatefinancelab.org/the-labs/global/
Green Tech Challenge	Incubator	Lisbon, Copenhagen		https://www.greentechchallenge.eu/
Hatch Aquaculture Accelerator	Accelerator	Cork, Ireland		https://www.hatch.blue/
Hatch Blue - Aquaculture Accelerator				
Heron Advisory				

IDBG Blue Tech Challenge	Event	Washington DC	Inter-American Development Bank Group (IDBG)	http://callforproposals.iadb.org/bluetechchallenge/home
Impact Hub Stockholm	Innovation Center	Stockholm		https://stockholm.impacthub.net/
Incubation Network by The Circulate Initiative and SecondMuse	Accelerator	Brooklyn	Circulate Capital	https://www.incubationnetwork.com/
InnoCentive	Innovation Center	Waltham, Mass.		https://www.innocentive.com/
Innovacorp		Halifax		https://innovacorp.ca/acceleration-initiatives/global-blue-innovation-challenge
Innovalia Association	Innovation Center	Bilbao	Innovalia Group	https://innovalia.org/en/bilbao/
Innovate UK	Cluster	Swindon	Government	https://www.gov.uk/government/organisations/innovate-uk
Innovation 4.4 Ocean Prize				
Innovation Maritime CA	Innovation Center	Quebec		https://www.innovationmaritime.ca/en
Innovation Norway	Cluster	Oslo	Government	https://www.innovasjonnorge.no/en/start-page/
Innovation Quarter NL	Cluster	The Hague		https://www.innovationquarter.nl/en/
Innovative Solutions Canada				https://www.ic.gc.ca/eic/site/101.nsf/eng/home
InnovFin	Accelerator		European Investment Bank	https://www.eib.org/en/products/blending/innovfin/index.htm
Innovyz - Australia	Incubator	Adelaide		https://www.innovyz.com/
Investible Oceans				
Journey Partners		Ireland		
Katapult Ocean				
Macau Blue Innovation Center	Innovation Center	Macau		
Maine Aquaculture Business Incubator Program	Incubator	Walpole	Maine Aquaculture Innovation Center, University of Maine	https://www.maineaquaculture.org/business-incubator-overview/

Marine Bio-Technologies Center of Innovation (MBCOI)	Innovation Center	Wilmington	Inception grant from the North Carolina Biotechnology Center	http://mbcoi.net
Maritime Blue Innovation Accelerator	Accelerator	Washington State	Washington Maritime Blue	
Maritime Startups Germany, SeaDevCon	Cluster	Germany		http://www.maritimestartups.de/
MATIS Iceland	Innovation Center	Reykjavik		http://old.matis.is/english/
MoMo4Climate	Event	The Netherlands	IUCN National Committee of the Netherlands, Ministry of Foreign Affairs	https://www.momo4climate.org/news
Nature Accelerator - Ecostar	Innovation Center		Ecostar	https://www.ecostarhub.com/
New England Ocean Cluster	Incubator	Portland		http://www.newenglandoceancluster.com
Newport Innovation Hub	Innovation Center	Newport	Newport County Chamber of Commerce, Economic Development Foundation of Rhode Island, City of Newport	https://www.facebook.com/NewportInnovationHub/
Noah Regen/Blue Fund	Incubator/Funder co-eworking space/platform	Bordeaux		https://noah.blue/applications/
Ocean Exchange	Incubator, Accelerator			https://www.oceanexchange.org/
Ocean Hub Africa				
Ocean Impact Org		Sydney		
Ocean Opportunity Lab	Floating entrepreneur lab			https://theoceanopportunitylab.com/

Ocean Startup Project (Ocean SuperCluster)		Halifax		https://oceansupercluster.ca/news/2020/ocean-startup-project-update/
Ocean X Labs	Accelerator	Washington	World Wildlife Fund, Conservation X Labs	http://www.oceansxlabs.org
Greentown Labs Offshore Wind Challenge			Greentown Labs	https://www.vineyardwind.com/offshorewindchallenge
Optima-X	Accelerator	Vouliagmeni, Attica		https://www.optima-x.org/
Our Oceans Challenge	Accelerator	Leiden, The Netherlands		http://www.ouroceanschallenge.org/
Pier 71	Accelerator	Singapore	MPA, NUS	https://www.pier71.sg/
Pole Mer Bretagne	Cluster	Plouzané, Brittany		http://www.pole-mer-bretagne-atlantique.com/
Pole Mer Med	Cluster	Ollioules		https://en.polemermediterranee.com/
Port XL	Accelerator	Rotterdam, Singapore, Antwerp		https://portxl.org/
ProtoAtlantic	Accelerator	EU		http://www.protoatlantic.eu/
Raa Labs				
Rainmaking - Ocean Ventures Alliance	Incubator, Accelerator		Rainmaking	https://rainmaking.io/
Reticenter				
San Diego Port Accelerator				
SARGASSO	Innovation Platform	Uddevalla, Sweden	Swedish Maritime Technology Forum (SMTF)	https://www.clustercollaboration.eu/cluster-organisations/swedish-maritime-technology-forum
Schmidt Marine Technology Partners	Accelerator	San Francisco	Schmidt Family Foundation	http://www.schmidtmarine.org/
SeaAhead	Accelerator	Boston		https://sea-ahead.com/
SeaFreight Labs	Innovation Center	Newark		https://www.seafreightlabs.com/
Seastainable Ventures	Scaling up entrepreneurs/advice	Blane, Spain		https://www.seastainableventures.com/

SEAstart	Incubator		GICAN	https://www.navalnews.com/naval-news/2019/06/gican-launches-seastart-startup-support-programme/
Seaweed for Europe				
Sky Ocean Ventures	Entrepreneurs in Residence/VC/other support	Islesworth UK		https://www.skygroup.sky/skyoceanventures
Startup 4 Oceans				
Startup Wharf				http://startupwharf.com/
Start-up Yard, COVE			COVE	
Stealth Startup	Startup support	Calgary		https://www.linkedin.com/in/warren-dowd-197a161/
Sustainable Oceans Alliance	Accelerator	San Francisco		https://www.soalliance.org/
Techstars	Incubator, Accelerator			https://www.techstars.com/
The Collaboratory	Incubator	Seattle	University of Washington - Applied Physics Laboratory	https://www.apl.washington.edu/about/about.php
The Dock	Accelerator	Haifa, Israel		https://www.thedockinnovation.com/
The Maritime Alliance	Cluster	San Diego	The Maritime Alliance	http://themaritimealliance.org
TOOL - The Ocean Opportunity Lab	Innovation Center			https://theoceanopportunitylab.com
Thetius	Innovation intel			https://thetius.com/what-we-do/
Trophées de l'Innovation Océan	Event	France		https://trophees-innovation-ocean.com/
True North 72	Innovation Center	Cyprus	Bernhard Schulte Shipmanagement (BSM) and the Cyprus Marine and Maritime Institute (CMMI)	
UK Maritime Innovation Hub	Innovation Center	Tyne		https://www.porttechnology.org/news/maritime_innovation_hub_launches_in_the_uk/

UMass Dartmouth Center for Innovation & Entrepreneurship	Incubator	Dartmouth	UMass Dartmouth	https://www.umassd.edu/innovate/incubators
UNDP Ocean Innovation Challenge				
Wartsila Acceleration Centre, Singapore			Wartsila	
WACA Innovation Challenge			World Bank	
Washington Maritime Blue	Accelerator	Seattle		https://maritimeblue.org/
WiderPool	Incubator, Accelerator	London		https://www.widerpool.com/
X Prize	Accelerator	Culver City, California		https://www.xprize.org/
Yara X			Yara	