Evidence-based and policy coherent Oceans Economy and Trade Strategies

BARBADOS

Coastal and Marine Environmental Services Fact Sheet[1]

DRAFT- Not for Quotation

1. Introduction

The project "Evidence-based and policy coherent Oceans Economy and Trade Strategies" aims to support developing countries such as Barbados, Belize and Costa Rica, in realizing trade and economic benefits from the sustainable use of marine resources within the framework of the 1982 United Nations Convention on the Law of the Sea (UNCLOS). This data factsheet presents detailed sectorial information of one (of the four) ocean sectors selected in Belize to facilitate the identification and informed selection of key sectors to be considered for the next phase of the project:

Sector 1	Sector 2	Sector 3	➡ **Sector 4**
Sustainable Marine fisheries	Seafood manufacturing	Sustainable Aquaculture	**Coastal and Environmental Services**

The coastal and marine environment includes biologically diverse ecosystems such as coral reefs, seagrass beds, and mangroves that provide a range of goods and services such as seafood, coastline protection and sand production by coral reefs as well as tourism (Moore et.al 2014).

Ecosystem services are services provided by ecosystems that benefit humans and all lifeforms (MEA, 2005). They are the processes, conditions and species interactions within a naturally functioning ecosystem that support human life and societies. These include provisioning services

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such as food and water; regulating services such as flood and disease control; cultural services, such as spiritual and cultural benefits; and supporting services, such as nutrient cycling or waste degradation, that maintain the conditions for life on Earth (Adapted from FAO and based on Alcamo et al. 2003). The provision of ecosystem services relies on their processes.

While Ecosystem services are essential to sustain life and have huge economic, environmental and cultural value, many of them are not tradable per se but only when they take the form of raw materials or goods derived from (e.g. harvested fish or extracted corals) or services activities based on those services (e.g. tourism, environmental or recreation services).

In this fact sheet, the focus will be on "***tradable environmental services"*** (environmental activities performed on someone's behalf for a price) and not on ecosystem services (natural capital). While the environmental services build on the existence of healthy ecosystem services, the former also contribute to sustainable use, management and restoration of the later through human intervention.

2. Context - Sector Analysis

There is no internationally agreed definition of "***Coastal and Marine Environmental services***". In the context of the World Trade Organization (WTO) the term utilized is "***Environmental services***", which include ***various tradable services*** such as sewage services, refuse disposal, sanitation and similar services, reducing vehicle emissions, noise abatement services, nature and landscape protection services and "other" environmental services.

The WTO General Agreement of Trade in services (GATS) applies in principle to all service sectors, with two exceptions: "services supplied in the exercise of governmental authority"[2] and "measures affecting air traffic rights and services directly related to the exercise of such rights" (See Art. I GATS and Annex on Air Transport Services, Article 2). The former exception is very important in the oceans context as services directly provided by the government such as coastguard, policing and customs control will not be covered by the GATS. The GATS does not cover government procurement activities in services but calls for multilateral negotiations on the matter (Art. XIII of GATS). These negotiations have not achieved any specific outcome so far. In the WTO Government Procurement is regulated in parallel in a Plurilateral Agreement called "Government Procurement", but its membership[3] is mostly limited to developed countries. Barbados is neither part of the (GPA), nor an observer.

UNCTAD tends to use in concept "***Preferable Environmental goods and services***", meaning those that generate lower environmental harm, lower natural resource use, no or minimum negative impact on human, animal or plant health and level of contribution to the preservation of the environment (UNCTAD, 1995). In the oceans context, this concept focuses more on the environmental performance of a good or a service and is fully consistent with ***UNCTAD's oceans pillars*** (UNCTAD, 2015) and UNEP green economy principles. There are also other proposals that have been made to use a list approach to define both environmental goods and services or

[2] "A service supplied in the exercise of governmental authority" is defined as any service which is supplied neither on a commercial basis, nor in competition with one or more service suppliers.

[3] At present, the GPA has 19 Parties comprising 47 WTO members.

some seeking only to focus on climate friendly one within WTO Doha Round negotiations on environmental goods and services.

3. Environmental and environment-related services: A mapping

The following tables (table 1 and 2) provide a comprehensive mapping and comparison of environmental services and environment-related services under the WTO Services Sectoral Classification List (W 120) and the United Nations Central Product Classification (CPC).[4] These classification schemes aim at reflecting the "perishable, intangible, heterogeneous (variable quality), and sometimes non-storable" nature of services. Services usually refer to activities undertaken on behalf of someone else for a price or a fee. They can be traded through four modes:

- **Mode 1 (Cross-border):** e.g. environmental consulting provided by a foreign firm (the blue prints of a new costal protection system) via the internet to a research centre in Barbados.
- **Mode 2 (Consumption abroad):** e.g. Students of Jamaica go to Barbados University and pay a course fee to take a course on environmental law.
- **Mode 3 (Commercial presence):** e.g. an affiliate of a foreign company incorporated in some country provides water treatment services to domestic consumers for a fee.
- **Mode 4 (temporary personal presence):** e.g. a national UK expert on monitoring and surveillance of marine wildlife is hired by a National Park Authority to travel to Barbados and provide advice in the setting of a new marine protected area for a couple of months.

There is no classification specific to coastal and marine environmental services, so in principle the classifications for environmental services would apply when delivered for the coastal and marine environment (for example, beach cleaning services could be considered as remediation services).

Table 1 includes environmental services as provided in the W120 classification. This classification was compiled by the World Trade Organization (WTO) in July 1991 to facilitate the Uruguay Round of negotiations and is yet the main reference in negotiations and the deposit of liberalization commitments by Members States under the WTO General Agreement on Trade in Services (GATS).

Table 2 provides a selection of environment-related services as proposed by the WTO in its most recent release on the matter ("Background Note on Environmental Services"; S/C/W/320; 20 August 2010).

For each W120 item, correspondence is provided with the first-ever- and most-recent- released versions of the UN Central Product Classification (CPC). Member States can also use the CPC system to deposit liberalization commitments or to make more specific commitments not only under the GATS, but also under other Free Trade Agreement (FTA) or integration schemes. Items

[4] UNCTAD's sector definition, indicators and data sources for ocean-based sectors for the Oceans Economy and Trade Strategies (OETS) project"; working document: https://unctad.org/en/pages/MeetingDetails.aspx?meetingid=2052

marked with asterisk (*) are UNCTAD proposed matchings in the absence of official correspondence.

All the services reported in Table 2 may be provided in connection with an environmental purpose. In some cases, they are used to introduce exceptions within a set of commitments under the GATS or an FTA. For example, "all remediation services" may be considered as "bound" with the exception of those related to "remediation consulting services" in a Member's schedule of commitments under the GATS. Under this example, the Member in question would have to grant to all Members of the WTO national treatment and full market access under the GATS for all remediation services (example: clean-up of oil pollution in a coastal area) except for remediation consulting services, where the Member may establish limitations.

When a Member seeks to deposit "bound" commitments is usually interested in attracting foreign investment, increasing the supply of services that may not be available locally or to increase the level of competition and quality of supply in the sector.

Table 1. Environmental services

WTO Services Sectoral Classification ***W120, 1991***	**UN Central Product Classification** ***provisional, 1991***	**UN Central Product Classification** ***version 2.1, 2015***
6. Environmental services	**940. Sewage and refuse disposal, sanitation**	**94. Sewage and waste collection, treatment and disposal and other environmental protection services**
A. Sewage services	9401. Sewage services	941. Sewerage, sewage treatment and septic tank cleaning services
B. Refuse disposal	9402. Refuse disposal services	942. Waste collection services 943. Waste treatment and disposal services
C. Sanitation and similar services	9403. Sanitation and similar services	945. Sanitation and similar services
D. Other	9404. Cleaning services of exhaust gases 9405. Noise abatement services	944. Remediation services
	9406. Nature and landscape protection services	949. Other environmental protection services n.e.c.
	9409. Other environmental protection services n.e.c.	

Source: UNCTAD analysis based on UN and WTO product classifications and correspondence tables. Selected items and product groups reflect the most-recent available definition of environmental services of the World Trade Organization (WTO) ("Background Note on Environmental Services" S/C/W/320; 20 August 2010).

Table 2. Environment-related services

WTO Services Sectoral Classification List *W120, 1991*	UN Central Product Classification *provisional, 1991*	UN Central Product Classification *version 2.1, 2015*
1. Business Services	**8. Business services; agricultural, mining and manufacturing services**	**8. Business and production services**
A. Professional services	86711. Advisory and pre-design architectural services	83211. Architectural advisory services
	86721. Advisory and consultative engineering services	8331. Engineering advisory services*
	86724. Engineering design services for the construction of civil engineering works	8332. Engineering services for specific projects*
	86729. Other engineering services	833. Engineering services*
	86732. Integrated engineering and project management services for water supply and sanitation works turnkey projects 86733. Integrated engineering services for the construction of manufacturing turnkey projects	8331. Engineering advisory services*
C. Research and Development Services	85. Research and development services	81. Research and development services
F. Other business services	884. Services incidental to manufacturing, except to the manufacture of metal products, machinery and equipment	881. Food, beverage and tobacco manufacturing services 891. Publishing, printing and reproduction services 892. Moulding, pressing, stamping, extruding and similar plastic manufacturing services 894. Materials recovery (recycling) services, on a fee or contract basis
	88493. Recycling on a fee or contract basis	89410. Metal waste and scrap recycling services, on a fee or contract basis 89420. Non-metal waste and scrap recovery (recycling) services, on a fee or contract basis
E. Other services	**51. Construction work**	**54. Construction services; 87. Maintenance, repair and installation (except construction) services**
3. Construction and related engineering services	5133. Construction work for civil engineering; for waterways, harbours, dams and other waterworks	5423. General construction services of harbours, waterways, dams, water mains and lines, irrigation and other waterworks
	5135. Construction work for civil engineering; for local pipelines and cables; ancillary works	5425. General construction services of local pipelines and cables and related works
	5152. Water well drilling	5434.Water well drilling and septic system installation services 8715. Maintenance and repair services of other machinery and equipment
	51620. Water plumbing and drain laying work	54341. Water well drilling services 8715. Maintenance and repair services of other machinery and equipment
	51650. Insulation work (electrical wiring, water, heat, sound)	54650. Insulation services
	5123. Construction work for buildings; for warehouses and industrial buildings	5412. General construction services of non-residential buildings
	5136. Construction work for civil engineering; for constructions for mining and manufacturing	5426. General construction services of mines and industrial plants
E. Other services	**62. Commision agents' and wholesale trade services, except of motor vehicles and motorcycles**	**Multiple applicable**
4. Distribution services	62278. Wholesale trade services of waste and scrap and materials for recycling	***92 Wholesale trade services, except on a fee or contract basis, of metal ores and metal in primary forms ***95 Wholesale trade servD20:G31ices, except on a fee or contract basis, of waste and scrap and materials

Source: UNCTAD analysis based on UN and WTO product classifications and correspondence tables. Selected items and product groups reflect the most-recent available definition of environment-related services of the World Trade Organization (WTO) ("Background Note on Environmental Services" S/C/W/320; 20 August 2010).

Note: The symbol * may stand for 610 and 620 or 611, 612, 621, 622, 623, 624 and 625, depending on the user's needs. However, not all combinations may be applicable.**

4. MFN and specific services commitments by Barbados

Under the GATS and with relation to the Most Favorable Nation (MFN) Clause, the principle is that with respect to any measure covered by this Agreement, each Member shall accord immediately and unconditionally to services and service suppliers of any other Member treatment no less favourable than that it accords to comparable services and service suppliers of any other country (See Article II.1. of the GATS). WTO Members may maintain a measure inconsistent with paragraph 1 provided that such a measure is listed in Annex on Article II Exemptions. Barbados has not deposited a list to the Annex MFN exceptions under the GATS. In consequence the MFN obligation applies to all other environmental services under any mode, unless there are part of a liberalization or integration process under a Regional Trade or an Economic Agreement that complies with GATS requirements (See Article V of the GATS).

In terms of specific commitments under the GATS (national treatment, market Access or additional commitments. Barbados has listed two general limitations applicable to all sectors. These are the following (See document GATS/SC/9 of 15 April 1994):

- On National Treatment: A foreign investor interested in the purchase or sale of land or shares/stocks is subject to a specific tax on the value of settlement (applicable to mode 3);
- On Market Access: Prior to a natural person working in Barbados a work permit must be obtained. Labour market tests are conducted (applicable to mode 4).

These limitations (exceptions to national treatment and market access) apply to all environmental services and other related services. Barbados has not deposited any "bound" commitment for national treatment, market access or additional commitment on environmental services under the GATS, so in principle the country has ample policy space to design any policy it may need to develop or regulate the sector.

Trade in environmental goods and services was deeply liberalised under the Economic Partnership Agreement (EPA) for EU-Cariforum. Under mode 1 (cross border supply of services) the EU lists Environmental services as a "bound" commitment with only one reservation: consulting services. Under Mode 3 (commercial presence), the EU listed all environmental services as "bound" with no reservation by using a more detailed classification scheme under the CPC. The list of sector specific commitments on the Cariforum side is quite disaggregated per sub-sector and commitments differ from country to country. Barbados "bound" commitments tend to be more common in modes 1, 2 and 3 and usually unbound in mode 4.

According to the Organization of American States (OAS),[5] the environmental provisions in the EPA call for promoting capacity building and cooperation to improve environmental management, eco-innovation, and the production of environmental goods and services. More precisely, Art. 117 of the EU-Cariforum Agreement lists specifically environmental management, especially when linked to tourism, as a key aspect of development cooperation and technical

[5] See detailed analysis at http://www.sice.oas.org/TPD/CAR_EU/CAR_EU_e.asp.

assistance. Barbados could use these provisions, to request specific support from the European Union on the data gathering and the voluntary e-register proposals below.

5. The case of the local Response to Coastal and Marine Protection in Barbados

The coastal zone is, for the purpose of this report, the transitional zone where the land meets water extending offshore to the continental shelf break and onshore to the first major change in topography (Scruggs and Bassett 2013). It is manged by the Coastal Zone Management Unit (CZMU) (see Box 1).

Box 1. The Coastal Zone Management Unit

The Coastal Zone Management Unit (CZMU) was formed in 1996 to manage the coastal zone of Barbados.

In 1998 the CZMU implemented the Coastal Zone Management Act and Marine Pollution Control Act to preserve the marine areas within the country (Moore et al. 2014; Government of Barbados). The elements of these Acts are designed to ensure the integrity and sustainability of the marine habitat and resource and provide the basis and foundation of the coastal and marine environmental services sector.

Other laws which affect the work of the CZMU include the Fisheries Act, Cap. 391 Barbados Territorial Waters Act, Cap 386; the Marine Boundaries and Jurisdiction Act, Cap. 387; the Defence Act Cap. 159; the Shipping Act Cap. 296; and the Town and Country Planning Act Cap. 240 which defines coastal setback lines for construction purposes and establishes all planning requirements for development.

The ***CZMU regulates***, makes ***recommendations and educates*** the public on coastal management. In addition, they oversee coral reef monitoring and all coastal engineering projects around the island as well as consultations with the Town and Country Development Planning Office (TCDPO) for onshore and offshore coastal development. The CZMU does the planning assessments and then forwards to TCPDO for the final say. This helps to ensures coastline protection and prevents beach erosion (Scruggs and Bassett 2013).

The CZMU's efforts in integrated coastal zone management as well as the team's technical expertise are lauded as best practices at both a regional and international level.

Barbados currently has ***one marine protected reserve along the island's west coast***: The ***Folkestone Park and Marine Reserve***, also known as Barbados Marine Reserve that was established in ***1981***. The Marine Areas (Preservation and Enhancement) (Restricted Areas) Regulations 1981 provides for the management of the Reserve. It is a no fishing area with four zones: a scientific research zone, a northern water sports zone, a recreational zone, and a

southern water sports zone. There are plans to extend the existing boundaries of this marine managed area. There are also plans to establish a new marine management area on the south coast through the designation of Carlisle Bay with extended boundaries.

Generally, all major coastal works performed on the island's coastline have been implemented by the government. Most projects and activities are carried out under a standard public sector procurement model. Some work conducted on the coastal and marine environment in Barbados is implemented by both the public and private sector. For example, the construction of the Richard Haynes Boardwalk on the South Coast of Barbados was funded by the Government and the InterAmerican Development Bank with the design and construction supervision being implemented by an international consulting firm in collaboration with the CZMU. It provides environmental services such as ground water filtration into the nearshore, shoreline stabilization, storm wave protection to properties, beach erosion control, and is utilized by locals and tourists alike for recreation. Private coastal property owners develop their independent property protection designs for implementation that must be reviewed by the CZMU through the town and country development planning process, to ensure that the proposed work do not negatively impact adjacent properties or sediment distribution pathways along the coast.

With regards to implementation of work, very few public-private partnerships between governments and consultants exist worldwide. One example of such public – private partnership (PPP) approach in the coastal and marine sector is the work of Blue Finance[6] an NGO which promotes and facilitates Co-Management of Marine Protected Areas, including developing Sustainable Financing Mechanisms. They have been successful in their approach in the Dominican Republic through their PPP agreement for the co-management of a protected area. Blue Finance has also held stakeholder consultations in Barbados but the progress has been slow due to previous lack of stakeholder buy in.

6. Measurement challenges and economic implications

Only a few, mainly OECD countries routinely gather statistics on trade in environmental services at a highly-disaggregated level. This is not only due to limited country effort, but also a lack of specification/detail in international reporting frameworks. Not surprisingly, this trend also applies to countries in the Caribbean region and ultimately reduces the scope and quality of sector analysis.[7]

In terms of public sector expenditure, the UN Framework for the Development of Environment Statistics recommends that basic national environmental statistics should include information about how much government is spending on environmental protection (Basic Set of Environment Statistics of the FDES, 2018). However, most countries do not generate this data.

[6] www.blue-finance.org

[7] Most international trade in services databases, such as UNCTADStat, abundantly draw from Balance of Payments (BoP) statistics reported by countries according to the Extended Balance of Payments Services Classification (EBOPS, 2010). As Box 1 shows, such a reporting framework lacks the level of detail that is necessary to capture trade in marine and coastal environmental services. In order to shed light on it, relevant information shall be collected at the firm level. Findings from preliminary data collection in Barbados are presented in section 2.2. Government support in gathering granular BoP data and/or obtaining access to official business statistics (national business registers etc.) is crucial to advance this type of research in the future.

Two major conclusions regarding the trade in Environmental Services in CARICOM are that there is limited appreciation of the existence of an environment industry and there is a dearth of hard data in relation to the environment industry, particularly so in the area of valuation studies on environmental services in Barbados. However, there is no systematic record of environmental services required locally, produced locally or imported (Griffith, 2009).

In line with these trends, officially-reported statistics on services related to the environment in Barbados are limited. A single balance of payment (BoP) record of 2014 reveals the existence of cross-border exchanges in "waste treatment and depollution, agricultural, and mining services".[8] Receipts to (exports) and payments from (imports) Barbados amounted to 10 million USD and 16 million USD respectively. Yet, the broad perimeter of the item – which also includes services incidental to agriculture (including fishing) and mining - doesn't not allow drawing conclusions on the type and nature of traded services. One main (and only) finding is perhaps the existence of domestic demand (and a trade balance deficit) for services related to the environment.

On a different note, balance of payment records may help detecting some (exogenous) drivers of growth of the environmental services industry. For instance, exports of travel services - whose majority is made of tourism - amounted to over 1 bn USD in 2017, corresponding to 54% of Barbadian exports. This signals an important weight of the tourism sector, a primary purchaser of environmental services, in the national economy. A selection of drivers of the environmental services sector, classified according to their nature (environmental and non-evironmental) and geography (cross-border vs domestic), is provided in figure 1.

Figure 1. Drivers of growth of the environmental services sector in Barbados

	Environment-related	Neutral
Cross-border	• SDGs/green demand • Climate + oceans action (oceans clean-up, sargassum) • Business sustainability/circularity	• Regional demand ("hubbing") • Cultural/geographic proximity • Relatively high tradeability
Domestic	• Coastal assets • Transition to renewables • Ratification of MEAs • Green capital inflows (GEF)	• Large tourism sector • Competitiveness (ICT readiness, education) • Public-private momentum

Source: UNCTAD Secretariat analysis

[8] Item 10.3.2 of the 2010 Extended Balance of Payments Services Classification (EBOPS 2010)

7. Services offered in the Coastal and Marine Environmental Sector

A wide range of coastal and marine environmental services are offered in Barbados, the region and internationally. The surveyed companies are based in, have offices or are operational in Barbados with some retaining operations abroad (Tables 3 and 4).

Table 3 List of Engineering Companies and the coastal and environmental services provided in Barbados and the Caribbean region

Engineering consultancies	Local	Regional	International	Services
W.F. Baird & Associates Coastal Engineers Ltd.	X	x	x	• Ports & harbours • Waterfronts • Water quality solutions • Hydropower & renewables • Watersheds& Coastal Management • Hydraulics & Hydrology
Consulting Engineers Partnership Ltd-CEP	x	x		• Structural & Civil engineering • Project & construction management • Land use planning, Studies & investigation/assessments • Damage assessments after natural hazards.
Adams Consulting International	x	x	x	• Structural & civil engineering • Project & construction management • Flooding & storm water management • EIA investigation/assessments • Drainage, hydrology, & other specialised services.
Smith Warner International	x	x		• Beach & shoreline protection • Climate resilience & Hazard mitigation • Coastal process investigation • Marinas & Ports • EIA & Coastal zone management • Flooding & storm water management • Data collection & monitoring.
Stantec Consulting Caribbean Ltd	x	x	x	• Planning • Engineering, Architecture, Interior Design, Landscape Architecture Surveying

				• Environmental Sciences, Project Management & Project Economics for Infrastructure and Facilities Projects.

Source: Author's own elaboration

Table 4 List of Coastal and Environmental Consulting Companies and their services in Barbados

Consultancies	Local	Regional	International	Services
Acclimatise Group Ltd	x		x	• Advises private and public sector on building climate resilience • Advisory services: Climate risk assessment and adaptation, Climate finance, Communication & knowledge management, research and innovation and learning services • Analytical services: Application, Spatial analysis, Indicators & indices and Earth observation & space data.
Blue Green Initiative	x	x		• Developing sustainable solutions for challenges faced socially, economically and environmentally • Projects range from coastal erosion, water access to social and economic monitoring.
Caribbean Sustainability Collective	x	x		• Sustainability & resilience • Idea, People & Resource Mobilization • Practical learning
The Caribbean Environmental Management Bureau	x	x	x	• Services: Corporate social responsibility partner • Innovation project development • Accredited course development/training • Research and data analysis

East Coast Conservation Organisation	x			• Provision of consulting services in marine and terrestrial ecosystems on: • Invasive species research, National campaigns, Environmental monitoring, Histological processing, Biodiversity tracking/mapping and Habitat mapping.
Ecoisle Consulting Inc	x	x		• Specializes in physical planning and natural resources management. • Assist governments, companies, organizations and other individuals. • Offers services in the disciplinary fields of physical planning and natural resources management: • Environmental planning, Environmental policy analysis and design • Institutional analysis, Environmental law • Land use planning, Development planning, Urban design • Project management, Coastal areas management, Tourism planning • Hazard mitigation planning, Environmental assessments • Environmental education and training, Workshop facilitation.
LNW Environmental	x			• Water quality testing (small water quality lab) and Environmental consulting
Sustainable Caribbean	x	x		• Environmental consulting on Sustainable fisheries, Environmental sustainability, Climate change, Ocean conservation, Blue economy.

Source: Author's own elaboration

8. Challenges in sustainable management

Pressures on coastal and marine resources as a result of ***tourism, pollution, coastal development, overfishing and coastal erosion*** in addition to ***climate-related factors*** affecting the decline on coral reefs may have a significant impact on ecosystem services and the tourism product for the island (Schuhmann, Peter Skeete, Ryan Waithe 2017).

Figure 2: Mitigation

Source: Author's own elaboration based on background information for The Ocean Conference 2017 edition

The sustainable management, protection and restoration of coastal and marine environmental services (Figure 2) is important to maintain ecosystems' health and resilience so that it can adequately provide economic, social, cultural and environmental services. The provision and increase supply of environmental services could contribute to respond to increase responsiveness and resilience.

Within the sector, there are a range of governance challenges. The knowledge to mitigate impacts exist but often there is a lack of financial resources and sometimes political will to make the necessary decisions. Another major challenge is the public awareness of the value of the coastal and marine environments.

Greater collaboration of governmental agencies with private sector firms could be more efficient in implementing conservation strategies. The government could continue to lead and be responsible for environmental policies, legislation and implementation process whereas private environmental services firms could continue to assist with providing technical expertise, and other related services. However, there are issues that speak to the propriety of information and its' management. It has been proposed that there will be open access to data and information in the near future but that permission will still be required from Cabinet for the release of the information. There are precautions that have to be adhered to given our reliance on the tourism industry for foreign exchange.

As a government agency, the CZMU may not be able to trade their coastal zone management services and expertise as it is a government agency. However, Barbados could explore the option of creating an independent autonomous institute in addition to their exchange in expertise and technical assistance to other countries, which would be a model to benefit from the capacity created through their best practice CZMU. This independent institute could also become a regional hub for best practices in the Blue Economy. Such an institute could be perhaps housed at the University of the West Indies in order to allow for institutional suitability.

Economy actors in the coastal and marine environmental services is a new area for the newly created Ministry of Maritime Affairs and the Blue Economy. It is necessary for a focused approach to be developed to explore the areas where data may exist but have to be disaggregated from

other existing data. Consideration must also be given to the establishment of new data requirements that need to be collected and the manner in which it should be done. This would be an important area for a research section with in the new Ministry as it starts to formulate policies for determining Blue Economy contributions to the general economy.

Something that could contribute to have a better understanding of the Coastal and Marine Environmental services providers could be to create a voluntary e-register of companies and firms providing these services. The voluntary e-register system could ask and gather basic non-confidential data such as name, place of incorporation, legal representatives, type of services provided, number of employees, tax identification number, participation in government procurement processes, etc. Incentives to joint the register would could be opportunities to participate in government procurement processes, visibility, transparency and inclusion in an export promotion catalogue. This later could be done in cooperation with the Caribbean Export Promotion Agency.

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