



## **INTERNATIONAL TRADE WORKING PAPER**

# **Effectively Governing the Ocean Economy and Boosting the Trade Performance of Commonwealth Small States**

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### Abstract

Although the total share of overall global trade of small states has been declining over time, specific sectors, including those related to the ocean economy, have been experiencing growth. A number of Commonwealth coastal small states have been pioneering blue economy approaches underpinned by integrated ocean governance frameworks in recent years. This International Trade Working Paper explores the associations between improvements in ocean governance – with a focus on fisheries – and Sustainable Development Goal (SDG) 14 trade-related outcomes. It draws on three Commonwealth case studies: Barbados, Belize and Seychelles. Overall, Commonwealth small states exported US\$2.5 billion of fisheries products in 2018, around 4 per cent of total exports. They score just below the global average for coastal protection according to the Ocean Health Index (OHI). The preliminary analysis undertaken in this paper suggests that improvements in ocean governance through enhanced coastal protection could boost trade by US\$3 million a year on average for Commonwealth small states, for every incremental increase in score, based on the OHI. Boosting Commonwealth small states coastal protection so that it exceeds the global average could boost the value of fisheries trade on average for member countries by US\$10 million annually. These initial exploratory results provide a number of avenues for further research, including as part of the ocean economy and trade strategies being pioneered in selected Commonwealth small states.

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## Introduction

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The ocean economy concept has emerged in recent years and been avidly adopted by policy-makers in coastal and small island developing states (SIDS) as a means to advance their socio-economic goals and trade-related diversification efforts (World Bank and United Nations 2017). Underpinning these efforts is effective ocean governance, which is strengthened by various domestic, regional and international institutional and legal frameworks, including the United Nations Convention on the Law of the Sea (UNCLOS). Effective ocean governance is intended to ensure greater value addition and capture, as well as enhanced environmental and socio-economic outcomes. Efforts to bolster governance frameworks globally, in view of public policy objectives, are supported by Sustainable Development Goal (SDG) 14 (Life below Water) and the broader 2030 Agenda agreed by heads of state in 2015.

One component of ocean governance relates to fisheries management. Poor fisheries management is estimated to squander roughly US\$80 billion annually in lost economic potential and 11 per cent in catch potential (World Bank 2017). Improved ocean governance and, more specifically, fisheries governance can help to recapture a substantial proportion of the annual losses (see World Bank 2009, 2017). On average, Commonwealth small states export a total value of US\$2.5 billion of fisheries exports, around 4 per cent of total exports, and score just below the global average for coastal protection according to the Ocean Health Index (OHI). The analysis presented in this paper

suggests that improvements in ocean governance through enhanced coastal protection could boost trade by US\$3 million annually for every incremental increase in score. Improving Commonwealth small states' coastal protection so that it exceeds the global average could, on average, boost the value of their fisheries trade by US\$10 million annually.

Although the relationship between improved management and trade performance is clear, the issues are complex given the challenges in managing access to ocean resources, coupled with major capacity constraints in coastal small economies. However, through new partnerships, including between the Commonwealth Secretariat, United Nations Conference on Trade and Development (UNCTAD) and Division for Ocean Affairs and the Law of the Sea (DOALOS), combined efforts are seeking to address these constraints at the national level and boost the trade performance of the ocean economy for coastal small states. The findings derived from the analysis undertaken in this International Trade Working Paper underline the importance of the ocean economy and enhanced governance for trade-related outcomes. The paper first reviews the recent trade performance of small states, before focusing on the following case studies: Barbados, Belize and Seychelles. It then reviews related ocean governance frameworks before exploring the causal relationships with trade-related outcomes. Finally, it concludes with policy implications to boost both ocean governance frameworks and trade outcomes and therefore advance SDG 14.

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### 1. Relative trade performance

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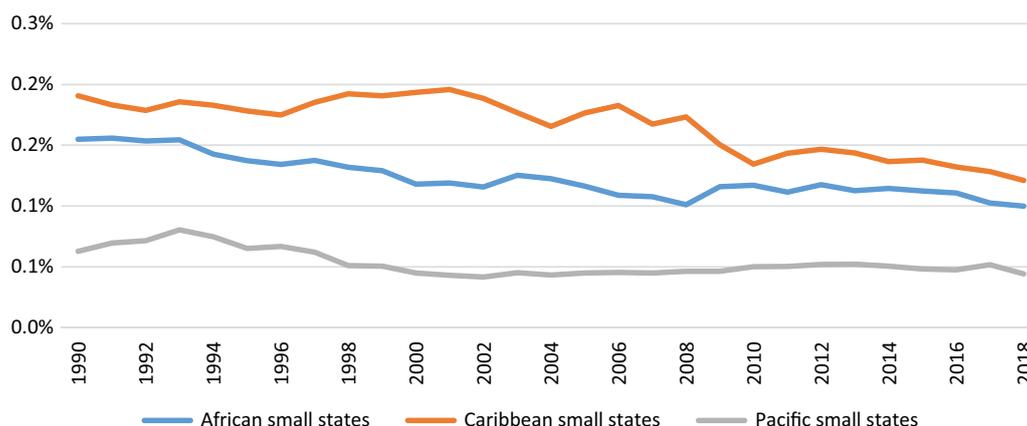
Commonwealth small states<sup>1</sup> have experienced a relative decline in their share of world trade (both goods and services) in recent decades, driven by the increased share of world trade of the emerging economies (including China), as indicated in Figure 1.

Outwardly, the Caribbean region has been hit harder than Africa and the Pacific, especially since the global trade slowdown of

2008–2009 and the subsequent Eurozone crises (2014). However, the individual performance of Commonwealth small states has been more mixed (Figure 2).

It is clear from Figure 2 that small states in the Caribbean (with the exception of Grenada, Trinidad and Tobago, and Belize) have experienced the lowest increases in their export values over the period analysed: 1995–97 compared

Figure 1. Commonwealth small states share of world trade, 1990–2018



Source: UNCTADStat (Goods and Services, BPM5 & BPM6).

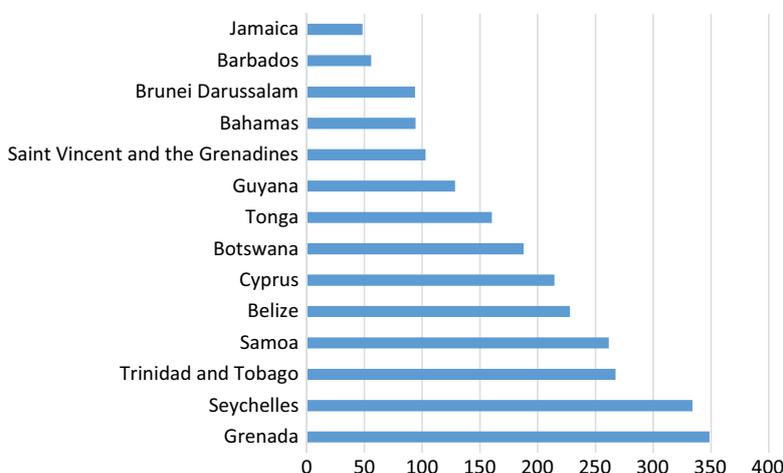
with 2014–16. Notably, there are some strong trade performers, including Seychelles and Belize, with both countries boosting their export performance by more than 200 per cent over the period analysed. Barbados, in comparison, has experienced just over a 50 per cent increase in export performance, as in Figure 2. Analysis of aggregate trade performance for small states masks that of specific sectors – including processed fisheries – which have been performing strongly (Lanz and Werner 2016).<sup>2</sup> Exports from the category of ‘fish’ accounted for up to 90.5 per cent of processed product exports in recent years, almost tripling between 2005 and 2015, from below US\$1.59 billion to US\$3.2 billion. These results are indicative of strong performance in emerging sectors, which may be underpinned by improvements in ocean governance frameworks.

### 1.1 Commonwealth case studies: Barbados, Belize and Seychelles

There are some major differences in how each of the case study countries has positioned itself within the fisheries value chain. This includes the derived value added and subsequent potential for upgrading (economically, as well as socially and environmentally) within domestic, regional and global markets. Differences in specialisation within primary or processed fisheries exports provide an indication of the extent to which Barbados, Belize and Seychelles have moved into more labour-intensive and higher value segments of the fisheries value chain.

Of the three case study countries, Seychelles has the largest coastal area (Table 1), implying greater access to fisheries resources. It has boosted its export performance from the

Figure 2. Commonwealth small states, percentage increase in exports in goods and services between 1995–97 and 2016–18



Source: UNCTADStat (2018).

**Table 1. Country profiles – Barbados, Belize and Seychelles (2018)**

Country	Marine area (km <sup>2</sup> )	Land area (km <sup>2</sup> )*	Marine/land area ratio	Coastal/area ratio (m/km <sup>2</sup> )	GDP (million US\$)	GDP per capita
Barbados	185,020	441	417	226	4,673	16,327
Belize	36,250	22,810	1.62	88	1,925	5,025
Seychelles	1,340,839	445	2,753	1,642	1,590	16,434

**Source:** United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC), UNCTADStat, Country Profile: General and Maritime Profiles; World Development Indicators; authors' calculations.

\*Nationally reported data

**Note:**

<sup>1</sup> For consistency, we use UNCTADStat data even though there are some differences between these data and nationally reported data. Statistics for marine and land area were created by UNEP-WCMC using the May 2019 version of the World Database on Protected Areas (WDPA).

<sup>2</sup> Nationally reported data for Seychelles marine area is 1,358,000 km<sup>2</sup>.

<sup>3</sup> GDP is measured as an aggregate measure of production, income and expenditure of an economy.

fisheries trade substantially over recent years. The situation for Belize is rather more varied, given fluctuations in the value of the fisheries trade over recent years. Barbados slightly increased its fisheries exports between 2014 and 2016.

There are major differences between the three countries in relation to their degree of specialisation within the processed and unprocessed fisheries sectors, with Seychelles exporting a much larger share of processed fish than Barbados (Tables 2 and 3). In comparison, Belize exports fewer fish products; its products are more varied, ranging from shrimp and tilapia to its primary market of crustaceans and molluscs.<sup>3</sup>

**Table 2. Value of international trade of seven fishery commodity and processed goods groups (2015–17) (US\$ thousand)**

Trade	Country	2015	2016	2017
Imports	Barbados	25,787	23,522	26,127
	Belize	881	918	610
	Seychelles	96,929	124,708	164,943
Exports	Barbados	505	692	419
	Belize	44,596	21,617	20,414
	Seychelles	375,923	483,671	524,692

**Source:** FAO (2016) Fishery and Aquaculture Statistics Yearbook.

**Note:** the seven fishery commodity groups are (1) fish – fresh, chilled or frozen; (2) fish – dried, salted or smoked; (3) crustaceans and molluscs – fresh, frozen, dried, salted, etc.; (4) fish products and preparations; (5) crustaceans and mollusc products and preparations; (6) oils and fats; and (7) meals.

Generally, Seychelles specialises in industrial fishing and the processing of tuna products. In the case of Barbados, artisanal fisheries tend to supply mostly the domestic market, with linkages to the tourism sector. Belize has experienced growth in artisanal fishing and has developed commercial value chains within the fisheries sector, mostly specialising in crustaceans and molluscs. In relation to domestic licensed vessels, Barbados has the most vessels, followed by Belize and Seychelles (Table 4). However, in relation to total capture

**Table 3. Trade in primary and processed fish and revealed comparative advantage (RCA)**

Country	Exports (US\$ million, 2015)		RCA (2015)	
	Primary	Processed	Primary	Processed
Barbados	1.51	0.14	2.74	0.08
Seychelles	1.43	373.10	1.86	157.88

**Source:** Adapted from Lanz and Werner (2016).

**Table 4. Information on fishing vessels and capture production – Barbados, Belize and Seychelles (most recent year available)**

Country	Number of licensed vessels	Total capture production (tonne)
Barbados	1,146	1,457
Belize	623	120,529
Seychelles	511	136,178

**Source:** Nationally reported data from OETS Draft Reports and in-country sources, FAO Stat.

production, Seychelles has the highest number,<sup>4</sup> followed by Belize and Barbados.<sup>5</sup>

The following section provides an overview of the ocean governance framework linking

the SDGs to trade in fisheries, as well as the regulatory and governance structures that Belize, Barbados and Seychelles have put in place.

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## 2. The ocean governance framework

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Ocean economies or ‘blue’ economies are complementary to and, in a sense, a subset of evolving development paradigms, which emphasise greener, more sustainable and inclusive economic paths (UNCTAD 2018). The cross-cutting nature of oceans presents opportunities for addressing some of the challenges that SIDS face because of their small size, market openness and vulnerability to external shocks, while also supporting economic diversification and environmental sustainability.

The SDGs’ ambitious global targets seek to address the gaps in public policy frameworks that have so far governed the globalisation process (see Keane 2018). SDG 14, which specifically relates to life below water, makes reference to different governance arrangements, some of which are directly trade related and others of which have less direct impact. It is clear that SDG 14 seeks to provide enhanced protection, greater access and improved governance while striking a balance between sustaining ocean health and increasing economic productivity, to ensure sustainability over generations to come. The combined effect of the SDG 14 implementation agenda, with its interrelated targets that bolster ocean governance frameworks, is geared towards increased access and therefore trade opportunities, particularly for small states – as recognised specifically in some of the targets of SDG 14.

For example:

*Target 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*

*Indicator 14.7.1: Sustainable fisheries as a percentage of GDP in small island developing States, least developed countries and all countries*

*14.b: Provide access for small-scale artisanal fishers to marine resources and markets;*

*Target 14.b.1: 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*

Ocean governance frameworks include the legal, policy and institutional structures intended to support activities in ocean-related sectors in ways that promote healthy oceans and sustainable use. Adherence to UNCLOS and ocean-related regional and domestic instruments that incorporate the economic, social and environmental aspects of sustainability can be instrumental in attaining these objectives.

This is reflected in target 14.c of SDG 14, which aspires to ‘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’.

Indicator 14.c.1 focuses on the ‘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’.

In the following subsections, a brief review of ocean governance frameworks is undertaken for each of the Commonwealth case studies. This includes the implementation of international, regional and national legislation and policy initiatives, when these are directly or indirectly related to the fisheries sector. We present an indicative timeline for each country of the implementation of ocean governance frameworks<sup>6</sup> and then review maritime jurisdiction; international and regional frameworks; domestic institutional arrangements; and, finally, frameworks directly related to fisheries.

## 2.1 Ocean governance implementation<sup>7</sup> in Barbados, Belize and Seychelles

### 2.1.1 Barbados

Barbados is an Eastern Caribbean island state situated south of Saint Lucia, east of St Vincent and the Grenadines and north of Trinidad and Tobago, with a land area of 441 km<sup>2</sup>, a coastline of 97 km and an area of maritime jurisdiction that is approximately 400 times greater than that of its land space. Its economy has evolved from a low-income agricultural economy into a middle-income economy centred around offshore banking and tourism as its main foreign exchange earners. In relation to tourism, assessments of the economic valuation of coastal resources, including natural capital and ecosystem services, have been undertaken (Schuhmann 2007). Tourists' probability of return is highly dependent on their perceptions of coastal and marine quality, illustrating a clear and significant link between the quality of the coastal and marine environment and tourism. This is a clear driver for Barbados to ensure strong coastal and marine environmental protection and sustainable management.

#### Timeline of ocean governance implementation

- 1976 – Enacted the Marine Areas (Preservation and Enhancement) Act
- 1978 – Enacted the Marine Boundaries and Jurisdiction Act
- 1981 – Established the Folkestone Park and Marine Reserve (FPMR)
- 1993 – Ratified UNCLOS
- 1995 – Joined the World Trade Organization (WTO)<sup>8</sup>
- 1996 – Established the Coastal Zone Management Unit (CZMU)
- 1998 – Enacted the Coastal Zone Management Act
- 2000 – Acceded to the 1995 United Nations Fish Stocks Agreement (UNFSA)
- 2000 – Accepted the Food and Agriculture Organization of the United Nations (FAO) Compliance Agreement
- 2000 – Member of the Tuna Convention establishing the International Commission for the Conservation of Atlantic Tunas (ICCAT)
- 2000 – Ratified the Agreement for the implementation of the provisions of the Convention of 10 December 1982 relating to the conservation and management of straddling fish stocks and highly migratory fish stocks (Straddling Fish Stocks Agreement)
- 2002 – Signed the Agreement Establishing the Caribbean Regional Fisheries Mechanism (CRFM)
- 2003 – Signed an Exclusive Economic Zone (EEZ) Cooperation Treaty with the Cooperative Republic of Guyana
- 2004 – Ministry of Agriculture and Rural Development launched the third Barbados Fisheries Management Plan (2004–2006)
- 2006 – Arbitral award between Barbados and Trinidad and Tobago delimiting the EEZ and continental shelf
- 2009 – Signed maritime boundary treaty with the French Republic in respect of Guadeloupe and Martinique
- 2014 – Authorised the Caribbean Community Common Fisheries Policy (CCCFP)
- 2016 – Signed Maritime Boundaries Agreement with St Vincent and the Grenadines
- 2016 – Acceded to the Port States Measures Agreement (PSMA)
- 2016 – Signed Maritime Boundaries Agreement with St Lucia
- 2018 – Established the Ministry of Maritime Affairs and the Blue Economy

#### Maritime jurisdiction

Barbados has delimited its respective maritime boundaries with France (Guadeloupe and Martinique), St Lucia and St Vincent and the Grenadines<sup>9</sup> and settled its maritime boundary with Trinidad and Tobago with an Arbitral Tribunal Award in 2006. As a result, Barbados's only unresolved maritime limits are its potential extended continental shelf boundaries beyond 200 nautical miles with Guyana and Trinidad and Tobago.<sup>10</sup>

#### International and regional frameworks

Internationally, Barbados became party to UNCLOS (1993), the UNFSA (2000), the Kyoto Protocol to the United Nations Framework Convention on Climate Change (UNFCCC) (2000), the FAO Compliance Agreement (2000), the 2009 FAO PSMA (2016), the

Cotonou Agreement (2000), the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) (1992), the Cartagena Convention and Protocol (1985 and 2002, respectively) and the Convention on Biological Diversity (CBD) (1994). In relation to regional frameworks, Barbados is a member of the following: ICCAT and the Western Central Atlantic Fishery Commission (WECAFC). It is a member of the regional body CARICOM and the CRFM and is a party to the CCCFP. This binding treaty, currently in its implementation phase, focuses on conserving, managing and sustainably utilising fisheries and related ecosystems. One of its aims is to address ongoing challenges for fishers by broadening market and fisheries research and access to markets.

#### *Domestic institutional arrangements*

Several agencies in Barbados play a role in ocean governance, the key ones being the newly established Ministry of Maritime Affairs and the Blue Economy, and the CZMU. The Ministry of Maritime Affairs and the Blue Economy has primary responsibility for preserving Barbados's coastlines and its marine environment, including the health of its reefs and marine plant and animal habitats. It is charged with ensuring the sustainable use and development of fisheries, marine assets and resources, minerals and species for sustainable recreation and to provide decent livelihoods for those directly and indirectly employed in the various marine sectors.<sup>11</sup> The mandate of the CZMU evolved from its inception in 1983 as a Project Unit managing beach erosion, to an entity under the Coastal Zone Management Act addressing integrated coastal zone planning and development and broader marine environmental protection. A key output of the CZMU is the Integrated Coastal Zone Management Plan, underpinned by a coastal zone management area (CZMA) that encompasses Barbados's entire coastline, comprising eight subzones fringing the island, with landward and seaward boundaries.<sup>12</sup>

The CZMA is complementary to other ocean-related policies and programmes, such as the Physical Development Plan, and will be linked with any future ocean governance policies developed for Barbados's EEZ and its area of extended continental shelf by the Ministry of Maritime Affairs and the Blue Economy. This underlines the need for an integrated ocean

governance framework that builds on existing relationships and creates linkages among institutions and marine sectors (including fisheries trade and services) to achieve the effective co-ordination of marine activities covering the full extent of Barbados's maritime jurisdiction.

#### *Trade in fisheries and related services*

The Fisheries Act 1993 (amended 2000) and regulations made under it provide the legal authority for the management, conservation and development of fisheries in Barbados and for policy development, such as the Fisheries Management Plan. The plan allows for the training of local organisations to enable them to play an active role in fisheries management and quality assurance. The vision includes the promotion of responsible fishing practices and implementation of agreed national, regional and international fisheries management measures; the continued development of modern and appropriate infrastructure and production; and the marketing of quality value-added seafood products.

Barbados remains a low exporter of fish and fish products and its domestic market is served by small-scale fisheries. With the call for governments to provide access for small-scale artisanal fisheries to marine resources and markets to fulfil SDG 14.b, the Barbadian government, through the Department of Fisheries, offers incentives and services such as tax and duty concessions on marine fuel, boats, engines and fishing supplies; subsidised payments of water and electricity at boatyards and landing sites; free registration, licensing and inspection services; and a maintenance and upgrade subsidy of up to US\$2,000 per boat per year. The CZMU's efforts to conserve coastal and marine

**Table 5. Number of registered fishing vessels by type**

Vessel type	Number of registered vessels	
	2016	2017
Moses	672	672
Dayboat	234	234
Iceboat	193	193
Longliner	47	47
<b>Total</b>	<b>1,146</b>	<b>1,146</b>

**Source:** Nationally reported data from OETS Barbados Draft Report.

areas and build fish stocks (SDG 14.5) has included the application of technical measures, such as closed seasons for overexploited fishes and bans on sea egg harvesting to allow sea egg/fish stocks to fully recuperate.<sup>13</sup>

### 2.1.2 Belize

Belize is located on the eastern Caribbean Sea coastline of Central America, bordering Mexico to the north and Guatemala to the west/south-west, and shares a maritime boundary with Honduras to the south-east. Belize spans a land area of 22,810 km<sup>2</sup>, with an EEZ of 34,310 km<sup>2</sup> and a 386-km coastline. Its economy is heavily commodity based with exports mainly of sugar and citrus fruits, as well as fish products (including crustaceans) and crude oil.

Since the 1990s, Belize has made continuous efforts to diversify its exports and expand its economy and, despite being highly susceptible to natural disasters, has transitioned towards tourism as a major economic activity and important source of foreign income. In maximising the ocean economy, Belize's coral reef is a critical feature of the national economy and food security, as it provides commercially valuable fish and crustaceans, as well as opportunities for recreation and tourism.

#### Timeline of ocean governance implementation

- 1948 – Enacted the Fisheries Act
- 1965 – Established the Belize Fisheries Unit Laboratory which was mandated to sustainably manage and develop the fishing sector
- 1977 – Revised the Fisheries Act and its subsidiary legislation
- 1981 – Joined CITES
- 1983 – Ratified UNCLOS
- 1987 – Established the Belize Fisheries Department and departmentalised the Fisheries Unit Laboratory
- 1990 – Established the Coastal Management Zone Unit within the Ministry of Fisheries
- 1992 – Enacted the Maritime Areas Act<sup>14</sup>
- 1995 – Became a WTO member
- 1996 – Belize Barrier Reef Reserve System inscribed on the List of World Heritage in Danger
- 1996 – Enacted the Protected Areas Conservation Trust (PACT) Act
- 1998 – Coastal Zone Management Act passed
- 2000 – Established the Coastal Zone Management Authority and Institute (CZMAI)
- 2005 – Ratified the Agreement for the implementation of the provisions of the Convention of 10 December 1982 relating to the conservation and management of straddling fish stocks and highly migratory fish stocks (Straddling Fish Stocks Agreement)
- 2005 – Accepted the 1993 FAO Compliance Agreement
- 2007 – Ratified the Convention for the strengthening of the Inter-American Tropical Tuna Commission (IATTC) (the Antigua Convention)
- 2008 – CARIFORUM/European Union (EU) Economic Partnership Agreement (allowing tariff reductions for seafood value-added products)
- 2010 – Ratified the Protocol Concerning Specially Protected Areas and Wildlife (SPA) under the Cartagena Convention
- 2011 – Passed a statutory instrument to ban all bottom trawling, targeting shrimp trawling, in its EEZ
- 2011 – Ratified the Convention on the Conservation and Management of the High Seas Fishery Resources in the South Pacific Ocean
- 2011 – Agreement on the International Dolphin Safe Program
- 2011 – Agreement on the International Dolphin Conservation Program
- 2011 – Agreement for the Establishment of the Indian Ocean Tuna Commission (IOTC)
- 2013 – Enacted the High Seas Fishing Act
- 2014 – Launch of the National Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated (IUU) Fishing on the High Seas
- 2015 – Enacted the National Protected Areas System Act
- 2016 – Adopted a national secure fishing rights programme for all small-scale fisheries, known as 'managed access'
- 2017 – Signed a Joint Declaration on Marine Reserves with the governments of Belgium, Nauru and Portugal
- 2017 – Passed a moratorium on offshore oil exploration to protect marine wildlife
- 2018 – Announced at the World Ocean Summit in Mexico that it will expand its

no-take area from 3% to more than 10% by the end of 2018

- 2018 – Belize Barrier Reef Reserve System removed from the List of World Heritage in Danger
- 2018 – Signed the Forests (Protection of Mangroves) Regulations 2018, revising the mangrove legislation

### *Maritime jurisdiction*

Belize shares maritime boundaries with Mexico, Guatemala and Honduras. It defines its maritime jurisdiction in the Maritime Areas Act (1992), which makes provision for the territorial sea, internal waters and EEZ extending 12 nautical miles outwards in most areas, with the exception of the south where it borders with Guatemala, where a measurement of 3 nautical miles is used. Agreements entered into by the UK with Mexico and Honduras are binding on Belize; however, the maritime boundary with Guatemala is under dispute. Both governments agreed by Special Agreement in 2008 to submit Guatemala's territorial, insular and maritime claim to the International Court of Justice and signed a Protocol to the Agreement in 2017 regarding the claim, which remains unresolved.<sup>15</sup>

### *International and regional frameworks*

Belize became party to UNCLOS (1983) and the WTO (1995) and a signatory of the UNFSA (2005), the FAO Compliance Agreement (2005), the Nairobi Convention, ICCAT, the IATTC, the CBD (1994) and the Cotonou Agreement (2000). Belize succeeded to CITES in 1986.<sup>16</sup> Regionally, Belize is a member of the Central American Fisheries and Aquaculture Organization (OSPECA) and CARICOM (and the CCCFP) and has membership of the CRFM, WECAFC and the Latin American Organization for Fisheries Development (OLDEPESCA).<sup>17</sup>

### *Domestic institutional arrangements*

Ocean governance falls primarily under two key agencies, the Ministry of Agriculture, Fisheries, Forestry, the Environment, Sustainable Development and Immigration, and the Coastal Zone Management Authority and Institute (CZMAI). The Ministry's Departments of Environment, Fisheries and Sustainable Development oversee the management of the

environment, fisheries and aquaculture and marine resources. Within the Department of Fisheries, the Ecosystem Management Unit (EMU) has the specific goal of providing holistic ecosystems management of aquatic resources through a marine reserve network and international commitments. The unit's objectives include zoning for marine reserves, rolling out the 'managed access' programme (also referred to as the Territorial Use Rights for Fisheries – TURFs), enhancing biodiversity and promoting recreation through managed tourism.

The CZMAI was set up in 1990 and was enacted under the Coastal Zone Management Act in 2000 as a focal agency responsible for co-ordinating programmes and activities for integrated coastal zone management. In 2016, the government, under the CZMAI and the Ministry of Agriculture, Fisheries, Forestry, the Environment, Sustainable Development and Immigration, initiated the Belize Integrated Coastal Zone Management Plan as a means to prioritise coastal development, marine transportation, fishing and recreation.

Nationally, the government continues to take steps to ensure good governance practices and protect the biodiversity of the ocean. In demonstrating its commitment to promoting good ocean governance, the government passed a moratorium in 2017 on offshore oil exploration to protect its marine diversity, including its World Heritage Site barrier reef, coastal zones and important tourism sector.

### *Trade in fisheries and related services*

The Belize Fisheries Department under Chapter 210 of the Fisheries Act (1948) manages all fishing activities and regulations in the domestic market and issues annual licences to both artisanal fishers and fishing vessels to fish for commercial purposes. The High Seas Fishing Act (2013) distinguishes between foreign and

**Table 6. Number of registered fishers and fishing vessels in Belize (2016–18)**

Year	2016	2017	2018
Number of fishers	2,752	2,710	2,525
Number of vessels	696	760	623

**Source:** Nationally reported data from OETS Belize Draft Report.

domestic vessels and is responsible for the provision of licences for, monitoring and regulation of foreign vessels operating on the high seas.

Since 2013, the government of Belize has been taking strides towards achieving a more sustainable ocean-based economy, in line with meeting the targets of SDG 14. In compliance with the FAO Code of Conduct for Responsible Fisheries and the FAO Compliance Agreement, the government launched its National Plan of Action to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated (IUU) Fishing on the High Seas in 2014 (SDG 14.4), to introduce a more holistic approach through new licence regulations, monitoring and surveillance regulations. These include regulations for trans-shipment at seas, catch and effort reporting and a regulatory scheme for sanctions. Managing and maintaining marine areas has been a priority for the government in promoting SDG 14.5 and, in 2017, the government signed a Joint Declaration on Marine Reserves, committing 10% of its EEZ as a marine protected area (MPA).

As of 2018, the country's MPAs cover 22.62% (428,778.57 ha) and 7.93% (150,351.2 ha) of no-take reserves of territorial and inland waters.<sup>18</sup> The Marine Conservation and Climate Change Adaptation Project (MCCAP) comprises initiatives implemented by the Belize Fisheries Department and the CZMAI and co-managed by non-governmental organisations that are aimed at increasing the coverage of MPAs and marine replenishment areas, the effective implementation of the Coastal Zone Management Plan, adoption of alternative livelihoods and reduced dependency on traditional fishing for household incomes (Belize Fisheries Department n.d.).

The domestic market is primarily served by small-scale fisheries. To improve artisanal and small-scale fishing opportunities (SDG 14.b), the Belize Government adopted the managed access programme to end open access by commercial fishers, increase market access for small-scale and artisanal fishers and end IUU fishing by allocating and giving control of specific geographic areas for fishing to small-scale fishers and fishing communities. Based on successes in this pilot project, including a reduction in illegal fishing (from 9% to 4%), reduced pressure on

resources and increased catch data reporting and stewardship by fishers, approval was given for a national roll-out of managed access to all marine areas (Belize Fisheries Department n.d.b).

### 2.1.3 Seychelles

Seychelles is an archipelago of approximately 115 islands in the Indian Ocean, with a total land area of approximately 445 km<sup>2</sup>, a coastline that spans 491 km and a maritime jurisdiction of over 3,000 times its land space at 1.3 million km<sup>2</sup>. Its economy has expanded to include a variety of industries, with tourism at the forefront. The country has moved from being commodity based (exports of plantation crops such as copra, vanilla and cinnamon) towards a more ocean-based economy based on fisheries and marine-related services.

#### Timeline of ocean governance implementation

- 1982 – Aldabra Atoll inscribed on the World Heritage List
- 1984 – Established the Seychelles Fishing Authority
- 1991 – Ratified UNCLOS
- 1993 – Enacted the Fisheries Act
- 1995 – Became a member of the Indian Ocean Tuna Commission
- 1996 – The Southern African Development Community (SADC) passed its Protocol on Trade in the SADC Region
- 1997 – Enacted the Maritime Zones Act
- 1998 – Became party to the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (Straddling Fish Stocks Agreement)
- 2001 – Boundary agreement with the French Republic (Glorieuses Islands) on delimitation of the EEZ and the continental shelf
- 2002 – Boundary agreement with the United Republic of Tanzania on delimitation of the EEZ and the continental shelf
- 2006 – Sustainable Fisheries Partnership Agreement signed between the EU and Seychelles
- 2008 – Boundary agreement with Mauritius on delimitation of the EEZ

- 2009 – Signed the interim Economic Partnership Agreement (iEPA) with the EU as part of the Eastern and Southern Africa (ESA) region (Comoros, Madagascar, Mauritius, Seychelles, Zambia and Zimbabwe), which has been provisionally applied since 14 May 2012<sup>19</sup>
- 2009 – Accepted the 1993 FAO Compliance Agreement
- 2010 – Committed to the goal of protection of 30% of marine areas
- 2011 – Signed the CBD ‘Nagoya Protocol’
- 2011 – Received recommendations on the outer limits of its continental shelf in the Mascarene Plateau region from the United Nations Commission on the Limits of the Continental Shelf
- 2012 – Boundary agreement with Comoros on delimitation of the EEZ and the continental shelf
- 2012 – Joint Management Agreement with Mauritius for the management of the extended continental shelf
- 2012 – Became a member of the Southern Indian Ocean Fisheries Agreement (SIOFA)
- 2013 – Acceded to the PSMA
- 2014 – Ministry of Environment, Energy and Climate Change launched the Marine Spatial Plan (MSP) for 15% of the EEZ for biodiversity protection and sustainable use
- 2014 – Passed the Industrial Property Act
- 2014 – National Biodiversity Strategy and Action Plan launched
- 2015 – Launch of the Indian Ocean Federation of Artisanal Fishermen (member states: Mauritius, Reunion, Comoros, Madagascar and Seychelles)
- 2015 – Became the 161st WTO member
- 2015 – Acceded to the SADC Protocol on Trade
- 2016 – The world’s first marine debt conversion aimed at ocean conservation and climate change adaptation was completed
- 2016 – Joined the Fisheries Transparency Initiative (FiTI)
- 2017 – Ministry of Finance, Trade and Economic Planning initiated the Third South West Indian Ocean Fisheries Governance and Shared Growth Project (SWIOFish3) Programme
- 2017 – IOTC adopted a resolution to reduce yellowfin tuna catch allowances by 5–15% in accordance with UNCLOS and the UNFSA
- 2018 – Received recommendations on the outer limits of its continental shelf in the Northern Plateau region from the United Nations Commission on the Limits of the Continental Shelf
- 2018 – Phase 1 of the MSP completed; Phase 2 to designate 30% of the EEZ as MPAs to be completed by 2020
- 2018 – Seychelles, as part of the African Union, signed a continent-wide free trade agreement, the Continental Free Trade Area (CFTA)
- 2018 – ‘Blue Bond’ for Seychelles’s sustainable fisheries launched
- 2018 – Blue Economy Roadmap approved and launched

### *Maritime jurisdiction*

Seychelles has delimited its EEZ and continental shelf boundaries with France (Glorieuses Islands), Tanzania and Mauritius. Seychelles and Mauritius have established a Joint Management Area (JMA) for the joint exercise and management of their sovereign rights beyond 200 nautical miles in the Mascarene Plateau region. An unresolved boundary with Madagascar remains to be settled.

### *International and regional frameworks*

Seychelles became party to UNCLOS (1991) and its subsequent agreements: the UNFSA (1998), the FAO Compliance Agreement (2009) and the FAO Code of Conduct, PSMA (2013). It is also a party to the CBD (1993), Paris Agreement on Climate Change (2016), Nairobi Convention (1985), Indian Ocean Fishery Commission (IOFC), Cartagena Protocol (2004), CITES (1977), Nagoya Protocol (2014) and Cotonou Agreement (2000). Regionally, it is a member of the Common Market for Eastern and Southern Africa (COMESA) (2009) and SADC (1997) and is a party to the IOTC (1995) and Southwest Indian Ocean Fisheries Commission (SWIOFC) (2004).

### *Domestic institutional arrangements*

The primary agencies responsible for Seychelles’s oceans framework are the Blue Economy Department within the Office of the Vice-President, the Maritime Unit under the Department of Foreign Affairs and the Ministry of Environment, Energy and Climate Change. The mission of the Blue Economy Department

includes facilitating the implementation of the blue economy across sectors through projects and cross-sectoral co-ordination and acting as a focal point for the blue economy in regional and international fora.

As part of the implementation of government strategies to enhance Seychelles's coastal zones and protect biodiversity, the Ministry of Environment, Energy and Climate Change launched the MSP in 2014 with the aim of protecting marine species and habitats, improving the resilience of coastal ecosystems and ensuring economic opportunities for fisheries, tourism and other users (Seychelles Marine Spatial Plan n.d.).

The ocean governance framework in Seychelles continues to evolve, with the incorporation of blue economy principles for improving coastal protection, building resilience and encouraging diversification of current activities in the fisheries and tourism sectors. Seychelles continues to be innovative with the application of innovative financing and promotion of investment into emerging sectors such as mariculture, aquaculture and marine biotechnology. It aims to meet its targets under SDG 14 and create a framework centred on sustainability, market access and economic growth. Specific support towards this objective has been provided by the Commonwealth Secretariat (see Seychelles Roadmap).

#### *Trade in fisheries and related services*

Seychelles's well-developed capture fisheries sector generates income from fish and fish product exports and from fishing activities, as well as contributing to local food security.

**Table 7. National fishing fleet and capacity of Seychelles (2015)**

National fishing fleet	Number of licensed boats	Total catch production (tons)
Industrial purse seine	13	88,740
Industrial longline	42	12,518
Semi-industrial longline	11	195
Artisanal fisheries	445	3,214
<b>Total</b>	<b>511</b>	<b>104,667</b>

Source: Bistoquet et al. (2018).

The fisheries sector is the second pillar of Seychelles's economy, with fishing and related sectors employing approximately 10% of the total formal workforce (Seychelles Fishing Authority 2017), with a fishing fleet of over 500 vessels and with catch production of over 100,000 tons (Table 7).

The Ministry of Fisheries and Agriculture in Seychelles is responsible for the management of all marine resources and fisheries. Other key agencies include the Seychelles Fishing Authority (SFA), which regulates and promotes sustainable development of the local fisheries sector. Relevant legislation includes the Fisheries Act and Regulations (2014) and the Licences Act (1987) and Regulations, which control fishing activities for both local and foreign fleets.

Although the fisheries markets has mainly been corporate and industrialised, access to markets for artisanal and small-scale fisheries (SDG 14.b) has been spearheaded by civil society through the Indian Ocean Federation of Artisanal Fishermen,<sup>20</sup> which aims to strengthen fishing associations and communities across the Indian Ocean region by allowing members to attain the same level and providing opportunities for the exchange of expertise and best practices. International fisheries trade with the EU is enhanced through the Sustainable Fisheries Partnership Agreement (SFPA) and greater trade efforts are underpinned by a bilateral fisheries agreement with Mauritius.

As part of SWIOFish3, the government is working to expand sustainable-use MPAs, improve the governance of priority fisheries and enable sustainable development of the blue economy (SDG 14.5, 14.c). To control overexploitation of marine species, the government, as part of the FAO Code of Conduct for Responsible Fishing and the FAO Compliance Agreement, launched a national plan of action against IUU in 2004 (SDG 14.4) to keep fish stock at sustainable levels. To work towards improving coastal areas and stocktake of its fisheries (SDG 14.5), the government, through SWIOFish3, committed to protecting 30% of its marine and coastal waters<sup>21</sup> and, as part of the IOTC's adopted resolution, Seychelles agreed to reduce fish catch allowances by 5–15% in accordance with UNCLOS and the UNFSA.

### 3. Exploration of the causal relationship between improved ocean governance frameworks and trade performance

In this subsection we explore the relationship between improved ocean governance and trade-related performance for Barbados, Belize and Seychelles. As the indicative review of ocean governance frameworks has shown, although commonalities exist, there are also major differences between the Commonwealth countries reviewed. Moreover, despite the resource and structural challenges encountered as SIDS, as indicated in Table 8, in each of the countries examined, maritime delimitation and ocean governance processes and institutional frameworks are well advanced, with nearly all EEZ maritime boundaries resolved and extended continental shelf boundaries remaining in only two instances.

We first explore the relationships between ocean governance frameworks and trade-related opportunities across the indicators presented in Table 9. These indicators are taken from the OHI assessment (Ocean Health Index n.d.a) and measure the implementation of ocean governance policies by measuring the

overall condition of the ocean; assessing socio-economic benefits; and determining how well coastal countries/territories make use of their marine territories.

The OHI is indicative of how well countries are achieving artisanal fishing opportunities,<sup>23</sup> coastal protection<sup>24</sup> and coastal livelihoods/economies,<sup>25</sup> all of which have direct relevance for the advancement of SDG 14.

Although the OHI has been utilised in a number of studies for the measurement of oceans' health and economic benefits (Halpern et al. 2012), this is the first time it has been explored specifically for Commonwealth small states, in relation to their economic interests and the specific goals and targets included in SDG 14. It should be noted that the index focuses specifically on the coastlines and EEZs that extend 200 nautical miles seaward from the shore of coastal states so entitled. Table 9 presents the scores for the selected Commonwealth case studies.

Table 8. Maritime zones and maritime delimitations – Barbados, Belize and Seychelles

	EEZ	Continental shelf beyond 200 metres
	<b>Barbados</b>	
St Vincent and the Grenadines	Delimited	Delimited
St Lucia	Delimited	Delimited
France (Guadeloupe)	Delimited	Delimited
Trinidad and Tobago	Delimited	Unresolved
Guyana	Co-operation treaty in place	Unresolved
	<b>Belize</b>	
Mexico	Delimited	Delimited
Guatemala	Unresolved (under dispute)	Unresolved (under dispute)
Honduras	Delimited	Delimited
	<b>Seychelles<sup>22</sup></b>	
France (Glorieuses Islands)	Delimited	Delimited
Tanzania	Delimited	Delimited
Mauritius	Delimited (EEZ)	Joint management agreement in place
Comoros	Delimited	Delimited
Madagascar	Unresolved	Unresolved

Source: DOALOS (n.d.) and International Maritime Boundaries Reports (Brill).

Table 9. Ocean governance and coastal livelihoods (2018)

Country	OHI	National rank (out of 221)	Artisanal fishing opportunities	Coastal protection	Coastal livelihoods and economies
Barbados	58	187	71	69	72
Belize	63	142	73	24	100
Seychelles	77	33	78	87	85

Source: Ocean Health Index (n.d.b).

Notes: All scores are out of 100 unless indicated otherwise. South Georgia and the South Sandwich Islands are ranked no. 1; of the Commonwealth states, Antigua and Barbuda are ranked no. 1, with a national rank of 18/221. The scores do not take into account the changes made after 2017, particularly to legislation. All specified countries have made changes and these should be reflected in subsequent reporting.

### 3.1 Exploration of ocean governance indicators – the OHI

We first explore simple correlations between the indicators that constitute the OHI for all countries. Globally, we find that the strongest correlation<sup>26</sup> is between artisanal fishing opportunities and coastal livelihoods and economies rather than between artisanal fishing opportunities and coastal protection. However, our interest relates to how the Commonwealth small states sample of countries differs from the global average. Looking specifically at the correlation for Commonwealth small states between artisanal fishing opportunities and both sets of indicators, namely coastal protection and coastal livelihoods and economies, the relationship is somewhat weaker and negative.<sup>27</sup>

Given these results, we then proceeded to look more specifically at the relationship between the two variables of artisanal fishing opportunities and coastal livelihoods and economies. Figure 3 presents a scatterplot showing the results for artisanal fishing opportunities and improvements in coastal livelihoods and economies for Commonwealth small states.

The data utilised in this instance are somewhat atypical given that they essentially consist of an index and take a maximum value of 100. Therefore, our interpretations are made cautiously. However, the  $R^2$  value is higher for the Commonwealth small states sample than for the global sample.<sup>28</sup> This may suggest that improvements in the coastal livelihoods and economies variable explain more of the variance around the mean for Commonwealth small states artisanal fishing opportunities. In other words, improvements in the coastal livelihoods variable enhance artisanal fishing opportunities to a greater degree for Commonwealth small states than for the global sample. The result may

suggest that greater efforts are needed in translating coastal planning and management strategies in coastal livelihoods into the expansion of artisanal fishing opportunities, related to the specific target of SDG 14.b.

#### 3.1.1 Analysis of the OHI and relation to fish trade

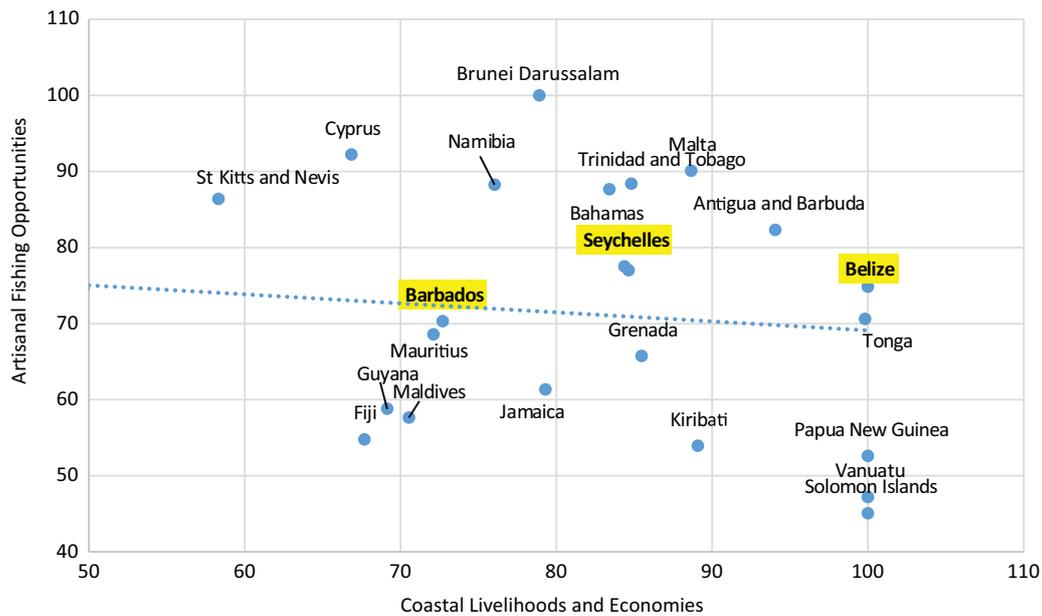
Given the results of the analysis undertaken in the previous subsection, we proceed to focus more specifically on associations with trade-related outcomes, which may arise from improvements in ocean governance, for which the OHI may provide a proxy. This includes those that positively influence both coastal livelihoods and artisanal fishing opportunities. In this case, our analysis of trade performance is limited to the fisheries trade and does not include related services, despite their growing importance and the interconnectedness of the fisheries trade and transportation, as well as tourism. This is because of the acute data limitations within the realm of services trade data, particularly for Commonwealth small states, which severely hinders analysis of the ocean economy-related services trade.

We therefore focus specifically on using the indicators for fish trade, derived from UNCTADStat. We explore the different variables included in the OHI of most relevance to this analysis – coastal protection and artisanal fishing opportunities – alongside the total value of fish exports (using the log). Again, we find some interesting differences in associations between the Commonwealth sample of small states and the global sample.

#### *Coastal protection*

The differences between the Commonwealth sample of small states and the global sample

Figure 3. Artisanal fishing opportunities and coastal livelihoods and economies – Commonwealth small states



**Source:** Authors' elaboration of the OHI for Commonwealth small states (Ocean Health Index, n.d.b).

**Notes:** Artisanal fishing opportunities measure whether or not people who need to fish on a small, local scale have the opportunity to do so in a lawful and sustainable way. The score includes the following components: (1) artisanal fishing: high bycatch (presence of artisanal blast fishing practices); (2) artisanal fishing: low bycatch (presence of artisanal poison fishing practices); (3) artisanal fishing: management effectiveness and opportunity; and (4) artisanal fishing: need (estimated by the per-capita purchasing power parity (PPP) adjusted gross domestic product (GDP)).

Coastal livelihoods and economies is defined as the jobs and revenue produced from marine-related industries; it aims to maintain, i.e. avoid the loss of, coastal and ocean-dependent livelihoods (i.e. jobs) and productive coastal economies (i.e. revenues) while also maximising livelihood quality (relative wages). The goal is composed of two equally important subgoals, livelihoods and economies, which are assessed across as many marine-related sectors (fishing, aquaculture, tourism, transportation, recreation, energy, oil extraction, transportation and shipping, etc.) as possible.

are most pronounced in relation to the correlation between coastal protection and total fish exports.<sup>29</sup> This result may reflect the relatively small geographical size of many member countries compared with their large coastal areas and coastlines, with their EEZs playing a major role in boosting their trading capabilities (also considering port facilities, dedicated infrastructure, national vessels and vessel capacities). It is important to note that, although there is a correlation between coastal protection and fish exports, natural endowments play a role in the capability and capacity of states to trade. For example, the Belize coastline is 386 km whereas that of Seychelles is 491 km.

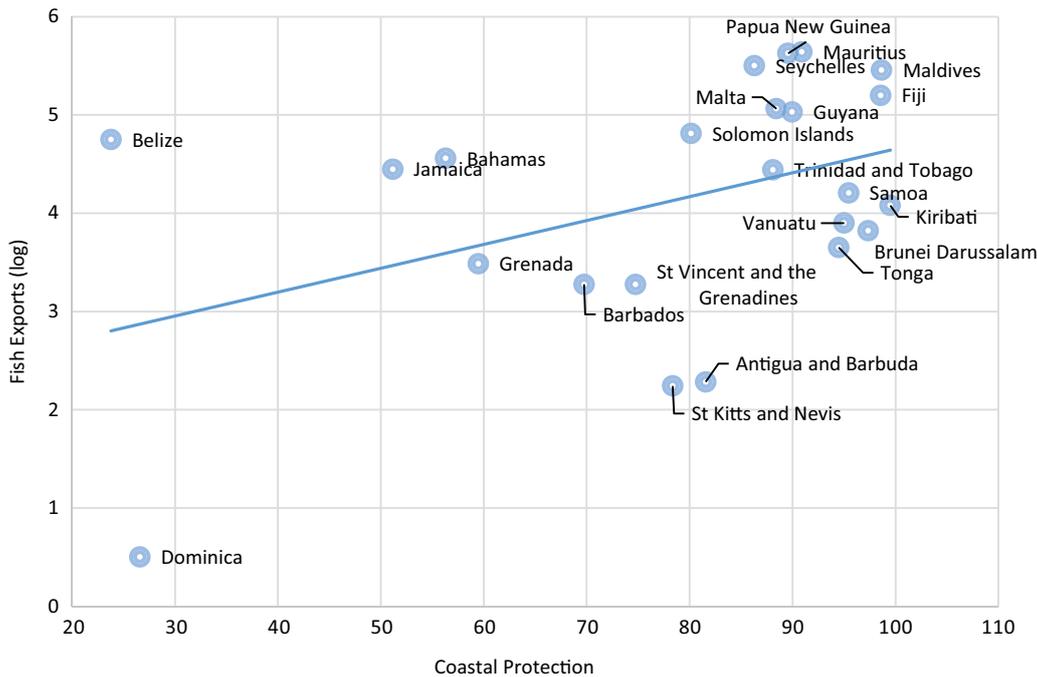
Country priority sectors also matter. For example, in Barbados there is an overwhelming dominance of tourism and a more limited development of export fisheries because of the focus on the domestic market. Of the three case study countries, Seychelles has the highest score

for coastal protection and also the largest export value. Its larger tuna stock sizes and relatively greater canning capacities than those of other small states provide an explanation for this.

Taking this analysis further, a simple pooled ordinary least squares regression analysis, based on the data presented in Figure 4, suggests that, for every 1-point increase in the coastal protection index, fish exports increase by 3 per cent for Commonwealth small states. This is the simplest approach to analysis; therefore, it is important to emphasise the caveats: the approach does not recognise the cross-sectional data and includes a number of assumptions.

Understanding these limitations, this first step in analysis is suggestive of how improvements in ocean governance through enhanced coastal protection could boost trade by US\$3 million for every incremental improvement in coastal protection. Improving Commonwealth small states' coastal protection so that it just exceeds

Figure 4. Coastal protection and fish exports – Commonwealth small states



**Source:** Authors' elaboration of the OHI for Commonwealth small states (Ocean Health Index, n.d.b).

**Notes:** Coastal protection assesses the amount of protection provided by marine and coastal habitats to coastal areas that people value, both inhabited (homes and other structures) and uninhabited (parks, special places, etc.). The habitats that provide protection to coastal areas for which we have global data include mangroves, coral reefs, seagrasses, salt marshes and sea ice. There is a subset of possible pressures that affect the condition of the key protective habitats and therefore the potential delivery of this goal, including chemical and nutrient pollution, alien species, subtidal and intertidal habitat destruction, destructive artisanal fishing and changes in sea surface temperature, ocean acidification and ultraviolet radiation. Resilience was measured as the average of the regulatory measures related to pollution mitigation and habitat protection, and the social integrity measures captured by the World Bank's World Governance Indicators.

the global average<sup>30</sup> could boost the value of fisheries trade by US\$10 million annually. Currently, Commonwealth small states export a total of US\$2 billion of fisheries products, around 6 per cent of total exports. They also collectively score just below the global average for coastal protection (79 compared with 81).

It is also important to underline that for many SIDS, coastal protection may refer to more than near-shore waters. For Seychelles, this encompasses the whole oceanic environment including the EEZ within which many commercial economic activities take place.

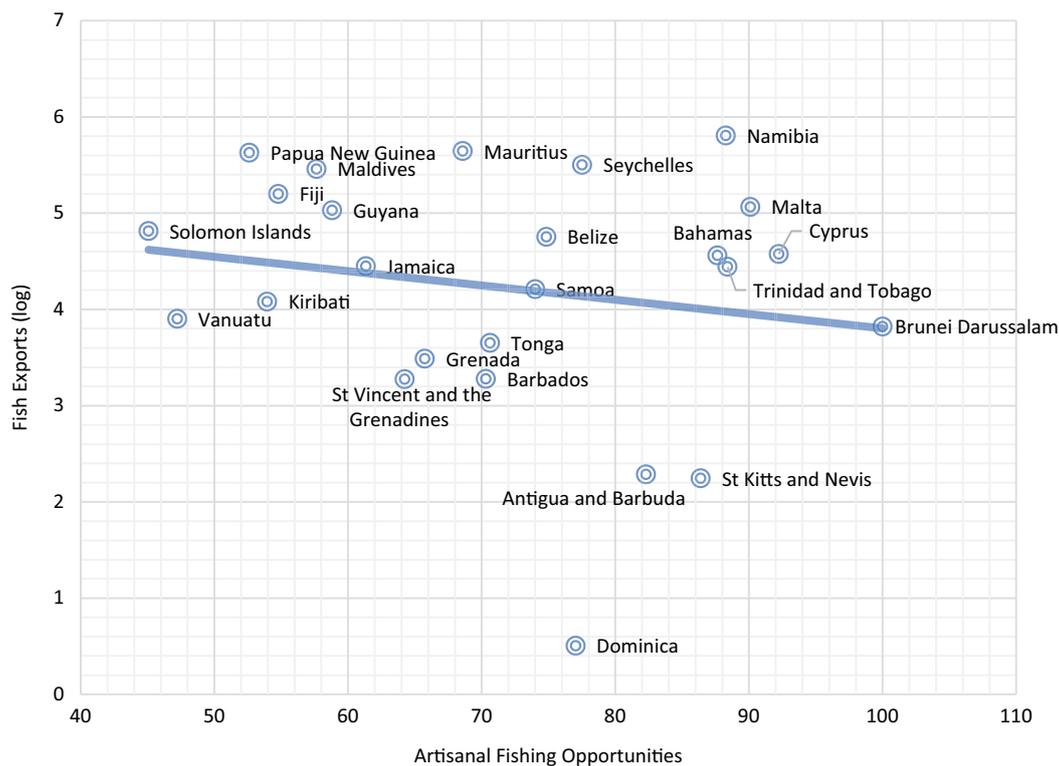
The global data, however, illustrate a different relationship. Although there is a positive correlation between fish exports and coastal protection (0.16), as well as between fish exports and overall ocean health, the correlation with coastal protection is much weaker than that for Commonwealth small states. Obviously, these results are reflective of how the fisheries global value chain is organised (UNCTAD 2016).

Moreover, it should be noted that, for many industrialised fisheries states, most of their catch is on the high seas and out of their (and others') maritime jurisdiction. Globally, the top ten leading fish exporters are China, Norway, Vietnam, Chile (and Easter Island), the USA, Thailand, Canada, the Netherlands, Sweden and Russia, whose combined total fish exports total over US\$60 billion; this is compared with a total of a little over US\$2 billion for the top ten Commonwealth small states.

#### *Artisanal fishing opportunities*

Another interesting point of comparison between the global sample and Commonwealth small states relates to the opportunities for artisanal fisheries. Whereas the global results suggest a weak but positive relationship between total fish exports and artisanal fishing opportunities, the converse is true for Commonwealth small states, which have a stronger negative correlation (Figure 5).<sup>31</sup>

Figure 5. Fish exports and artisanal fishing opportunities – Commonwealth small states



Source: Authors' elaboration of the OHI for Commonwealth small states (Ocean Health Index, n.d.b).

On the one hand, this result could be suggestive of the need for some countries to make greater endeavours towards advancing effective ocean governance frameworks that enable access for smaller scale producers. On the other hand, artisanal fishing opportunities, although already numerous for some countries (e.g. Dominica), may not translate into an increase in fish exports because of a focus on and supply to domestic markets, perhaps resulting from weak infrastructure and capacity constraints.

Looking more specifically at the cases of Barbados, Belize and Seychelles, the results suggest that all three countries score fairly similarly in relation to artisanal fishing opportunities, but there is a wider range of scores for

total fish exports, which is to be expected given the different position of each country and their degree of specialisation within the global fisheries value chain.

Important caveats apply to the analysis presented in this paper. Of course, reverse causation cannot be excluded: is it because the countries have coastal protection that they export more, or do higher levels of exports lead to increased coastal protection to preserve fish stocks? Without more country-specific case study analysis it is simply not possible to answer this question. Additional econometric analysis is required. Accordingly, some of the next steps in taking the analysis forward include more detailed econometric analysis, including the introduction of fixed effects.

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## 4. Policy implications

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To address some of these capacity constraints, the Commonwealth Secretariat is working jointly with UNCTAD and DOALOS to develop and implement ocean economy and

trade strategies (OETS) for Barbados, Belize and Costa Rica.<sup>32</sup> Outcomes under the OETS include, inter alia, enhancing synergies with ongoing national projects, plans, strategies

and policies; boosting economic resilience and diversification of fisheries and seafood production by identifying opportunities for market access; supporting the production of high-quality marine products through value-added options; and generating improved livelihoods for those directly involved in the ocean economy.

**Barbados:** In efforts to capitalise on the potential for economic growth in the fisheries sector, Barbados has identified three goods sub-sectors (marine catch, aquaculture production, and seafood processing) and trade in marine fisheries and one services sector (coastal and marine environmental services) for the OETS project. Based on the sensitisation exercise undertaken, the country has chosen sustainable marine fisheries and seafood processing (pelagic longline) and processing of fresh tuna loins as the priority sectors. To create better governance of activities in other sectors, such as cruise tourism, commercial shipping, marine transportation and oil and gas exploration and extractive activities, there is a need to strengthen the overarching legal and policy framework.

**Belize:** Belize has identified marine catch and aquaculture production, seafood processing and marine and coastal tourism for the OETS project and chosen marine finfish exports and seafood processing as its two priority sectors. This underlines the need for greater efforts in export diversification within the broader framework of the ocean economy. Through its 2019–2030 National Trade Policy, Belize has signalled its intention to, *inter alia*, build a strong and effective institutional and legal framework for trade development, improve trade performance with a focus on promoting investments within Belize's EEZ, enhance value addition, diversify its production and export basket, and link trade and the environment in order to achieve sustainable development.

**Seychelles:** The Blue Economy Strategic Framework and Roadmap developed for Seychelles, now in its implementation phase, adopts a cross-government and societal approach, utilising innovative financial methods with a view to creating an enhanced environment for private sector development and investment in ocean-related sectors. As an ocean-specific policy framework, it raises greater awareness of Seychelles's 'blue brand' internationally as well

as domestically, and can be a catalyst for greater access to blue economy opportunities, including increased support for artisanal fisheries and continued coastal protection.

The experience gained from the management of its MSP, JMA and Blue Bond Initiative continues to make Seychelles a leader in multisector and international ocean governance engagement. With these initiatives comes significant resource requirements, which are being supplemented by international donor support to increase local capacity.

Each of the three countries examined in this paper (Barbados, Belize and Seychelles), is a party to UNCLOS and its related agreements, including the Straddling Fish Stocks Agreement. Participation in these agreements enables the enjoyment of rights to which the respective states are entitled under UNCLOS. The certainty established through the finalization of their maritime jurisdiction with neighbouring states has benefited Seychelles and Barbados, whilst Belize's historic maritime challenges with Guatemala remain in need of third-party settlement or initiatives at the regional or international level.

Comparatively, Seychelles's and Barbados's favourable geographic location allows for the management of the full extent of a 200 nautical mile EEZ in some areas. However, access to greater areas of maritime space, including areas of continental shelf beyond 200 nautical miles requires increased resources. Management of Barbados's extended maritime space from its coastal management zone out to 200 nautical miles and beyond is likely to be a major challenge to its absorptive and resource capacity. Greater co-ordination of shared multisector responsibilities will be important since institutionally, the Department of Energy is responsible for offshore oil and gas licensing within its EEZ and continental shelf, whereas the Ministry of Maritime Affairs and the Blue Economy and the CZMU are responsible for maritime policy and coastal zone management within its EEZ.

This notwithstanding, Barbados's transition to a blue economy may make this less challenging as it has been an early mover in the adoption of green policies, sustainability principles and integrated coastal zone management. Additionally, from an institutional perspective, as a single island entity, the implementation and management of multiuser activities may also be

more centralised than in the case of Seychelles as a multi-island state.

In each of the countries under consideration, given their strong dependence on sustainable fisheries and tourism, an appreciation of the value of protecting coastal and marine resources is high.<sup>33</sup> This has been demonstrated, in equal measure, through the establishment of strong institutional mechanisms for protecting marine and coastal resources, thereby allowing for the conduct of activities in ways that ensure longer term sustainability. Seychelles's robust environmental and coastal protection mechanisms, and investment in port facilities and dedicated infrastructure, are indicative of this commitment and similarly, Belize's moratorium on offshore extractive activities can be viewed as allowing a concentrated focus on maintaining the marine environment around its barrier reef. This commitment and focus remains the case, arguably even though opportunities for boosting trade performance through better governance can be pursued.

Some caveats still remain. Trade in fisheries and services is not one of Barbados's major economic pillars and the impact of increased marine resources and jurisdiction may not be directly felt in these sectors. Due to species location and preferences, greater availability of fisheries resources through fishing access agreements have long been sought with Trinidad and Tobago, without real progress being attained. Although the fisheries sector has been an economic focus for the Belizean economy in the past, there has been a slowdown in its overall fisheries market, particularly in the shrimp market with a concentration on crustaceans and molluscs (particularly lobster and conch). In Seychelles, there needs to be

greater diversification into emerging sectors for the longer term sustainability of the fisheries sector as one of its main economic pillars.

In conclusion, the analyses presented in this paper illustrate the ways in which effective ocean governance frameworks, particularly regarding aspects related to coastal protection, can boost the governance of trade opportunities for Commonwealth small states. The results presented in this paper are suggestive of particular actions that could be adopted by national governments working with development partners to increase the economic benefits derived from the sector (SDG 14.7), to better provide access for small-scale artisanal fishers (14.7.1) and to enable some monitoring of progress by countries in the degree of application of a legal, policy and institutional framework that recognises and protects access rights for small-scale fisheries.

This paper offers a snapshot of methods by which trade performance within the fisheries sector can be bolstered through enhanced trade-related governance. The specific market access opportunities that could be better targeted have not been explored in detail; rather, the link with artisanal, as opposed to commercial, fisheries opportunities has been explored in relation to enhanced domestic policy frameworks.

The research findings have implications for monitoring of SDG 14.b.1 and the ensuing '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', as well as indicator 14.7.1. These will require further research beyond the scope of this paper and we trust that we have provided some avenues of future research that could be pursued.

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## Notes

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- 1 Commonwealth small states by region: Africa – Botswana, Eswatini, Lesotho, Mauritius, Namibia, Seychelles; Caribbean – Antigua and Barbuda, Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Jamaica, St Kitts and Nevis, St Lucia, St Vincent and the Grenadines, Trinidad and Tobago; Pacific – Fiji Islands, Kiribati, Nauru, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu.
- 2 The definition used for small states is that defined by Lanz and Werner (2016) and includes non-Commonwealth member countries.
- 3 Shrimp production in the aquaculture industry in Belize has not recovered since a 2014 outbreak of early mortality syndrome.
- 4 The number of flagged vessels in Belize has decreased in the past few years, substantially changing its

- position. However, comparisons are skewed here because of data constraints.
- 5 See Tables 5, 6 and 7 for further details on the numbers and categories of fishing vessels in Barbados, Belize and Seychelles.
  - 6 These lists are not meant to be exhaustive, but rather are indicative.
  - 7 Governance implementation refers to a mix of international and regional instruments, national legislation and policy initiatives.
  - 8 Barbados joined the General Agreement on Tariffs and Trade (GATT) in 1967.
  - 9 France (2009); St Vincent and the Grenadines (2015); St Lucia (2016).
  - 10 These are externally determined by the United Nations Convention on the Limits of the Continental Shelf, and the time frame for such recommendations can range from 10 to 15 years from the date of lodgement of a submission.
  - 11 Governor General of Barbados's throne speech, 5 June 2018. See <http://gisbarbados.gov.bb/download/throne-speech-june-05-2018/?wpdmdl=506696>.
  - 12 The seaward boundary is the 100-metre isobath or 200 metres seaward of the outer edge of the bank reef, whichever is further seaward. See <http://www.coastal.gov.bb/content/integrated-coastal-zone-management-plan>.
  - 13 The government has also designated the Folkestone Park and Marine Reserve as a protected zone. However, the country continues to face issues of effective management of its protected areas. See [https://www.cavehill.uwi.edu/cermes/getdoc/c80a2723-fe8e-40cd-a240-60d51fc6a0ef/pena\\_et\\_al\\_2016\\_barbados\\_sea\\_eggs\\_season\\_2015\\_ctr\\_.aspx](https://www.cavehill.uwi.edu/cermes/getdoc/c80a2723-fe8e-40cd-a240-60d51fc6a0ef/pena_et_al_2016_barbados_sea_eggs_season_2015_ctr_.aspx).
  - 14 [http://www.un.org/Depts/los/doalos\\_publications/LOSBulletins/bulletinpdf/bulletin52e.pdf](http://www.un.org/Depts/los/doalos_publications/LOSBulletins/bulletinpdf/bulletin52e.pdf) (p. 67).
  - 15 Each country has confirmed its decision to refer to the International Court of Justice, Guatemala in 2018 and Belize in 2019.
  - 16 Belize was a party to CITES from 1981 to 1986 and was previously a party as part of the United Kingdom of Great Britain and Northern Ireland from 31 October 1976.
  - 17 Belize was also a party to the Convention on the Conservation and Management of the High Seas Fisheries Resources in the South Pacific Ocean (South Pacific Regional Fisheries Management Organisation – SPRFMO – Convention) but withdrew from membership in 2016.
  - 18 In-country source, Beverly Wade, Belize Fisheries Department.
  - 19 [http://ec.europa.eu/trade/policy/countries-and-regions/regions/esa/index\\_en.htm](http://ec.europa.eu/trade/policy/countries-and-regions/regions/esa/index_en.htm)
  - 20 Member states: Mauritius, Reunion, Comoros, Madagascar and Seychelles.
  - 21 A phased programme of data gathering, stakeholder consultations and zoning design took place during 2019.
  - 22 Although there are currently no boundary disputes between Seychelles and its neighbouring countries, certain sections have not been finalised because there are islands (i.e. Tromelin Island) whose sovereignty is contested by two countries.
  - 23 Measures whether or not people who need to fish on a small, local scale have the opportunity to do so.
  - 24 Measures the condition and extent of five ecological habitats that protect coastlines against storm waves and flooding. Habitats assessed are mangrove forests, seagrass meadows, salt marshes, tropical coral reefs and sea ice.
  - 25 Measures the jobs and revenue produced from marine-related industries, the indirect value for community identity, tax revenue and other related economic and social aspects of a stable coastal economy.
  - 26 Pearson correlation coefficient of 0.03 compared with -0.038.
  - 27 Pearson correlation coefficients of -0.17 and -0.13, respectively.
  - 28 The coefficient of determination is 0.0195 for the Commonwealth small states sample compared with 0.0012 for the global sample. Usually, the  $R^2$  statistic is used when the purpose of analysis is to predict how improvements in one variable influence another and how well observed outcomes can be explained by the model. Generally, it is an intuitive measure of how a simple linear model (in this case) fits a set of observations.
  - 29 The correlation is 0.5 for Commonwealth small states and 0.001 for the global sample.
  - 30 So as to score 82.
  - 31 -0.28 compared with 0.13.
  - 32 Costa Rica, as a non-Commonwealth country, has not been included in this working paper.
  - 33 As noted previously, both Seychelles and Belize have obtained marine World Heritage Site listings. A similar listing for Barbados's capital Bridgetown also has positive implications for its marine and coastal tourism sector.

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## Bibliography

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- Belize Fisheries Department (n.d.a), 'MCCAP general information', available at <http://www.fisheries.gov.bz/mccap-general-information/>
- Belize Fisheries Department (n.d.b), 'CFU function & structure', available at: <http://www.fisheries.gov.bz/units/cfu-function-structure/>
- Belize High Seas Fisheries Unit (2014), *Belize: National Plan of Action to Prevent, Deter and Eliminate, Illegal, Unreported and Unregulated (IUU) Fishing on the High Seas*, Belize High Seas Fisheries Unit, Belize City: Belize.
- Bistoquet, K, M Marguerite, T Lucas, S Morel, NJ Elizabeth, P Michaud and S Tsuji (2018), *Development of the Fishery Satellite Account in the Seychelles*, IOTC Working Paper, available at: <http://www.iotc.org/documents/WPDCS/14/29-SYC-SatAccount>

- Coastal Zone Management Authority and Institute (CZMAI) (2016), *Belize Integrated Coastal Zone Management Plan*, CZMAI, Belize City.
- Division for Ocean Affairs and the Law of the Sea (DOALOS) (2003), 'Law of the Sea, Bulletin no. 52', available at: [http://www.un.org/Depts/los/doalos\\_publications/LOSBulletins/bulletinpdf/bulletin52e.pdf](http://www.un.org/Depts/los/doalos_publications/LOSBulletins/bulletinpdf/bulletin52e.pdf)
- Division for Ocean Affairs and the Law of the Sea (n.d.), Maritime space: maritime zones and maritime delimitation, available at: <http://www.un.org/Depts/los/LEGISLATIONANDTREATIES/regionslist.htm>
- European Commission (2018), 'Eastern and Southern Africa (ESA)', available at: [http://ec.europa.eu/trade/policy/countries-and-regions/regions/esa/index\\_en.htm](http://ec.europa.eu/trade/policy/countries-and-regions/regions/esa/index_en.htm)
- Food and Agriculture Organization of the United Nations (FAO) (2017), Resolution 17/01 on an interim plan for rebuilding the Indian Ocean yellowfin tuna stock in the IOTC area of competence, available at: <https://www.iotc.org/cmm/resolution-1701-%E2%80%A8-interim-plan-rebuilding-indian-ocean-yellowfin-tuna-stock-iotc-area-competence>
- Halpern, BS, C Longo, D Hardy, KL McLeod, JF Samhour, SK Katona, K Kleisner, SE Lester, J O'Leary, M Ranelletti, AA Rosenberg, C Scarborough, ER Selig, BD Best, DR Brumbaugh, FS Chapin, LB Crowder, KL Daly, SC Doney, C Elfes, MJ Fogarty, SD Gaines, KI Jacobsen, L Bunce Karrer, HM Leslie, E Neeley, D Pauly, S Polasky, B Ris, K St Martin, GS Stone, UR Sumaila and D Zeller (2012), 'An index to assess the health and benefits of the global ocean', *Nature*, Vol. 488, 615–20. doi: <http://doi.org/10.1038/nature11397>
- Jacquet, J and D Pauly (2008), 'Funding priorities: big barriers to small-scale fisheries', *Conservation and Policy*, Vol. 22 No. 4, 832–35.
- Keane, J (2018), 'Effectively governing trade within global value chains as a tool to achieve sustainable development', in Honkonen, T and S Romppanen (eds), *International Environmental Law-making and Diplomacy Review 2017*, University of Eastern Finland, Joensuu, 13–28, available at: [http://www.uef.fi/documents/241889/1492308/International+Environmental+Law-making+and+Diplomacy+Review+2017\\_1.pdf/4e26b7d3-b1f9-42e1-bcef-4aab5ade8910](http://www.uef.fi/documents/241889/1492308/International+Environmental+Law-making+and+Diplomacy+Review+2017_1.pdf/4e26b7d3-b1f9-42e1-bcef-4aab5ade8910)
- Lanz, R and H Werner, "Participation of Small Economies in Global Value Chains: Evidence and Policy Issues (2016), Commonwealth Trade Hot Topics.
- Ministry of Finance, Trade and Economic Planning, Republic of Seychelles (2017), *Third South West Indian Ocean Fisheries Governance and Shared Growth Project. Process Framework for SWIOFish3 Project*, available at: <http://www.finance.gov.sc/uploads/files/PF.pdf>.
- Mohammed, E, A Lindop, C Parker and S Willoughby (2015), *Reconstructed Fisheries Catches of Barbados, 1950–2010*, Working Paper #2015-16, Fisheries Centre, University of British Columbia, Vancouver, BC.
- Ocean Health Index (n.d.a), 'About', available at: <http://www.oceanhealthindex.org/about>
- Ocean Health Index (n.d.b), 'Global scores', available at: <http://www.oceanhealthindex.org/region-scores>
- Pena, M, P McConney, R Forde, S Sealy and J Wood (2015), *Sea Eggs Again: An Account and Evaluation of the 2015 Barbados Sea Egg Fishing Season (1–31 October 2015)*, available at: [https://www.cavehill.uwi.edu/cermes/getdoc/c80a2723-fe8e-40cd-a240-60d51fc6a0ef/pena\\_et\\_al\\_2016\\_barbados\\_sea\\_eggs\\_season\\_2015\\_ctr\\_.aspx](https://www.cavehill.uwi.edu/cermes/getdoc/c80a2723-fe8e-40cd-a240-60d51fc6a0ef/pena_et_al_2016_barbados_sea_eggs_season_2015_ctr_.aspx)
- Schuhmann, PW (2007), *The Economic Value of Coastal Resources in Barbados: Vacation Tourists' Perceptions, Expenditures and Willingness to Pay*, available at: [https://www.cavehill.uwi.edu/cermes/docs/technical\\_reports/schuhmann\\_2007\\_economic\\_valuation\\_of\\_coastal\\_resou.aspx](https://www.cavehill.uwi.edu/cermes/docs/technical_reports/schuhmann_2007_economic_valuation_of_coastal_resou.aspx)
- Seychelles Fishing Authority (2017), *Annual Report 2014*, available at: <https://www.oceandocs.org/handle/1834/9817>.
- Seychelles Marine Spatial Plan (n.d.), 'Seychelles Marine Spatial Plan Initiative', available at <https://seymsp.com/>
- United Nations Conference on Trade and Development (UNCTAD) (2016), *Trade and Environment Review: Fish Trade*, UNCTAD, Geneva.
- United Nations Conference on Trade and Development (UNCTAD) (2018), Oceans Economy and Fisheries, available at: <https://unctad.org/en/Pages/DITC/Trade-and-Environment/Oceans-Economy.aspx?>
- World Bank (2009), *The Sunken Billions: The Economic Justification for Fisheries Reform*, World Bank, Washington, DC, available at: <http://documents.worldbank.org/curated/en/546481468326710227/pdf/831910BRI0Sunk00Box379886B00PUBLIC0.pdf>
- World Bank (2017), *The Sunken Billions Revisited: Progress and Challenges in Global Marine Fisheries*, World Bank, Washington, DC, available at: <https://openknowledge.worldbank.org/bitstream/handle/10986/24056/9781464809194.pdf?sequence=8&isAllowed=y>.
- World Bank and United Nations (2017), *The Potential of the Blue Economy: Increasing Long-term Benefits of the Sustainable Use of Marine Resources for Small Island Developing States and Coastal Least Developed Countries*, available at: <https://openknowledge.worldbank.org/bitstream/handle/10986/26843/115545.pdf?sequence=1&isAllowed=y>
- Data sources include UNCTADStat Data Center and UNCTAD Country Profiles available at: [https://unctadstat.unctad.org/wds/ReportFolders/reportFolders.aspx?sCS\\_ChosenLang=en](https://unctadstat.unctad.org/wds/ReportFolders/reportFolders.aspx?sCS_ChosenLang=en)

