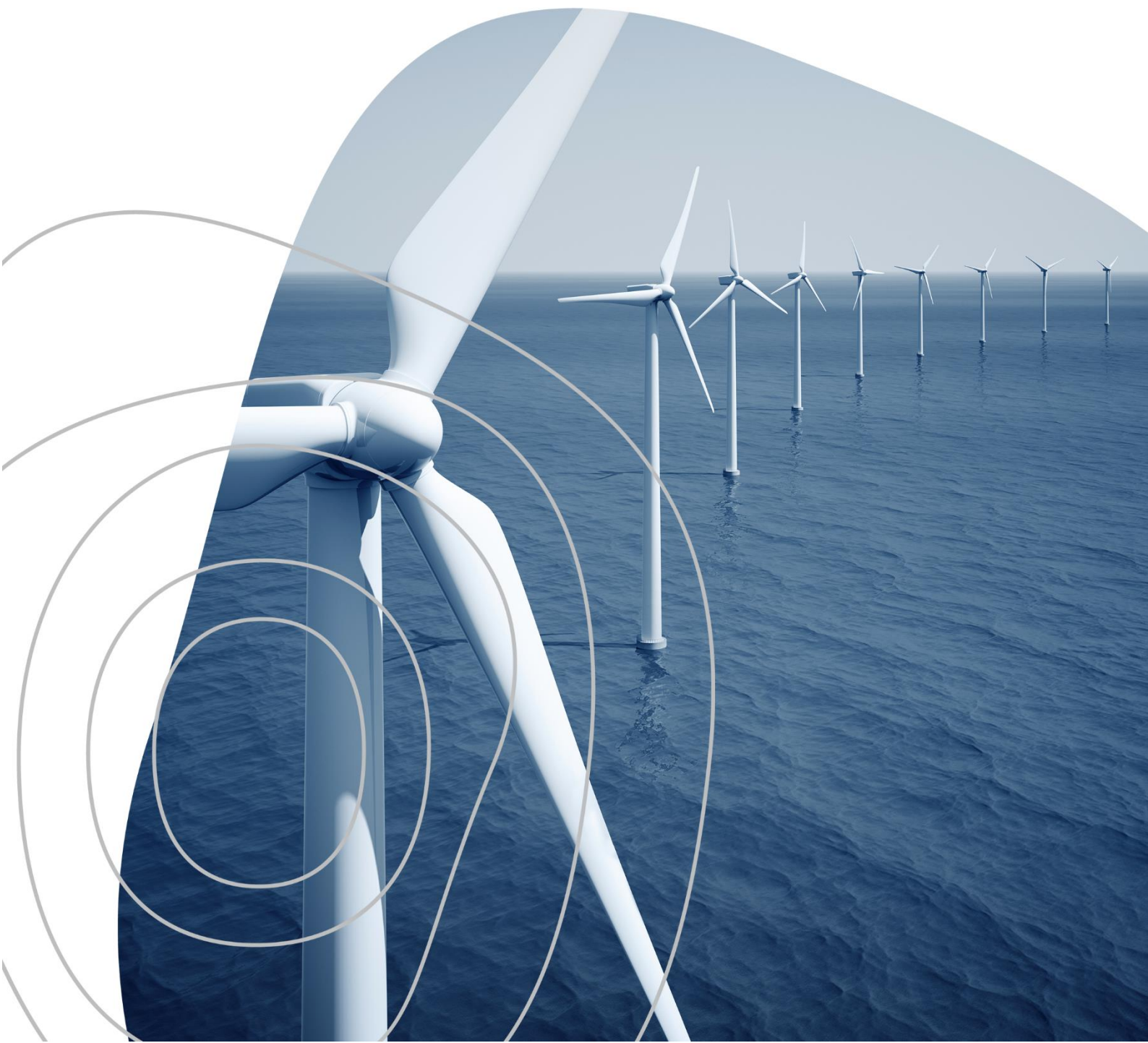




BLUE ECONOMY ROADMAP

**REALISING THE POTENTIAL OF THE OVERSEAS COUNTRIES
AND TERRITORIES FOR SUSTAINABLE BLUE GROWTH (BLUE ECONOMY)**



BLUE ECONOMY ROADMAP REALISING THE POTENTIAL OF THE OVERSEAS COUNTRIES AND TERRITORIES FOR SUSTAINABLE BLUE GROWTH (BLUE ECONOMY)

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This report has been prepared by the Secretariat of the Overseas Countries and Territories Association which is co-funded by the European Union. The findings, interpretations and conclusions expressed in this document are those of the author alone and should in no way be taken to reflect the views of the European Commission or the Overseas Countries and Territories.

EXECUTIVE SUMMARY

The OCTA Blue Economy Roadmap sets out the analyses made from data collected from a participatory process, which explored OCT stakeholders' perception to the next step requirements, aspirations, gaps and challenges. This was done in parallel with in-depth examinations carried out by three experts representing four blue economy sub-sectors. This was done in order to develop a step-by step approach by way of recommendations aimed at facilitating the emergence of OCT Blue Economic Sectors (BES)

The main international **legal instrument** for the oceans is the 1982 United Nations Convention on the Law of the Sea (UNCLOS)¹, which defines rights and obligations of states within their maritime space, and includes provisions for marine environmental protection and the management of its resources. The OCTs are strongly associated with the European Union through the application of a regime based on the provisions of Part IV of the Treaty on the Function of the European Union. Part three and four of Article 199 have a specific significance for OCTs; because they allude to the expectation of investment assistance from an OCTs associated Member State and therefore will provide an extremely important window of opportunity for OCTs for the implementation of this roadmap.

The **OCTA Blue Economy vision** is; 'To develop and support a distinctive OCT Blue Economy Sector (BES) for OCTs and provide robust guidelines to assist individual OCTs to fulfil their aspirations of identifying, and ordering their Blue Economy Industries into a sustainable and economically viable sector. The BES aims to significantly increase high value employment opportunities for national citizens, attract investment and increase the sector's economic contribution to national GDP. Key objectives focus on short, medium and long-term goals in line with International, European and National Policies and each goal is aligned to the sustainable use of blue resources present in the national ocean, ensuring the conservation of the marine environment for current and future generations.

Investment and funding are critical if a sustainable Blue Economy is to be realised. With that in mind, the Blue Economy Roadmap has adopted the **Sustainable Blue Economy Finance Principles**² developed by the European Commission, WWF, the World Resources Institute (WRI) and the European Investment Bank (EIB) and is hosted by UNEP FI as part of the Sustainable Blue Economy Finance Initiative. The strategic approach for OCTs to unlock investment opportunity from their blue resources is to align with the financial strategic expectations of the main investment bodies. It is fully recommended that OCTs adopt these principles because they provide an important framework to align national principles with those of the financial industries.

Four classified strategic priorities provide the overall framework for the study. The results from the survey and the expert examinations provided the overall context and key data, which after a careful analytical process resulted in the final recommendations.

¹ https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf (Accessed 11.03.2021)

² <https://www.unepfi.org/blue-finance/the-principles/> Accessed 09.03.2021

Strategic Priority One - To create and develop the OCT Blue Economy Sector (BES) to provide clarity for governments, private sector, academic sector, and investors.

The implementation of blue economy principles for some OCTs is currently in progress, as an understanding exists that the development of a new and innovative sector will provide an important turnkey to unlock national blue resources. However, the study noted that this is currently carried out in a piecemeal fashion that lacks cohesion and restricts necessary intervention measures.

Recommendations for this sector cover the development of the OCT Blue Economy Sector Strategy and the Blue Economy Expansion Study, as well as creating OCT Maritime Cluster templates and OCT common platform tools.

Strategic Priority Two - Securing a Sustainable Resilient Knowledge Centric Framework for the OCT Blue Economy Sector (BES)

This priority covers the technical and capacity development (skills) required to accelerate OCT blue economy development, infrastructure required that will help to accelerate Blue Economy development in the OCT or region, port expansion/upgrade or transformation to support blue growth activities, marine/maritime technological parks, and marine and coastal conservation/protection areas and R&D infrastructure.

Recommendations for this sector include the development of studies on Human Capital Training and Education, and on Incubation Centres and Technology Parks, as well as the development of an OCT wide Investment Know-how Platform.

Strategic Priority Three - Reinforcement of the ocean environment, social and economic interface

This priority covers a wide range of topics like better maritime governance, climate change adaptation, food security, sustainable fisheries and aquaculture development, renewable energy, and coastal tourism.

Recommendations for this sector include the drafting of a report on Attaining Strong Blue Economic Growth and on Effective Maritime Governance, as well as to increase cooperation with the National State Overseeing Authority of OCT Governments and the remit of the PWP3 platform. Further recommendations are specific to renewable energy, food security and coastal tourism.

Strategic Priority Four - Safeguarding healthy, resilient, and fruitful oceans, implemented through the creation of sustainable wealth and prosperous communities

Strategic Priority 4 builds on the other three priorities, OCT representatives identified six globally recognised objectives that they considered imperative to help governments and stakeholders accelerate Blue Economy Growth.

Recommendations for this sector are the development of an official OCT Blue Economy Strategy, as well as the creation of OCT Blue Growth Observatories, which are a proposed flagship project.

Flagship projects serve to strengthen a sector or branch or to generate model solutions to important challenges faced by society. Because of their specific and high-level importance, they create an awareness of the problem among the public. These types of projects carried out in either the research category industrial research and/or experimental development, should be between two- and four-years long and due to their specific classification should be of at least EUR 2 million.

Due to the geographic and social scale required to develop a 'flagship project' it is better to consider them from an Ocean perspective engaging the OCTs considered in this report.

Projects suggested from a singular country or by the OCT representatives and specific experts that embrace one to three islands are provided within the individual profiles. The main 'flagship' initiative identified from the comments and responses from OCT representatives is the Overseas Countries and Territories [Blue Growth Observatories](#) for sustainable economic development of the blue economy sector.

The implementation of the OCTs [Blue Growth Observatories](#), due to the scale and expectations of the programme, would be a very viable EU Flagship Initiative because of the geographical scope and the clear aims and objectives of the programme. The outcomes fitting perfectly with the EU Sustainable Strategy 2030 and because it falls in line with the expectations of the 2021 New Horizon Europe funding programme.

Potentially all the other projects mentioned below along with recommendations could also fit inside that specific programme as they all relate to one of the main Horizon Europe Missions. One of the key MISSIONS of Horizon Europe is healthy oceans-seas, coastal and inland waters. These include:

- Systemic solutions for the prevention, reduction, mitigation and removal of marine pollution, including plastics;
- Transition to a circular and blue economy;
- Adaptation to (where irreversible damage has already occurred) and mitigation of pollution and climate change in the ocean;
- Sustainable use and management of ocean resources;
- Development of new materials including biodegradable plastic substitutes, new feed and food;
- Urban, coastal and maritime spatial planning;
- Ocean governance;
- Ocean economics applied to maritime activities.

[Maritime Spatial Planning \(MSP\)](#) is defined in the [EU Directive on MSP](#) as 'a process by which the relevant Member State's authorities analyse and organise human activities in marine areas to achieve ecological, economic and social objectives', according to the European Commission's Directive on Maritime Spatial Planning.

[Marine Spatial Planning](#) is an important activity as it informs the development of Maritime spatial plans for example, the whereabouts of a protected species, provides the environmental input to ensure that no plans are put forward for blue energy technology.

This report ends with a mapping of recommendations in terms of priority and where they link together. The OCT Blue Growth Observatories FLAGSHIP Initiative will provide the mechanism to enable the majority of other recommendations.

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LIST OF ABBREVIATIONS

Abbreviation	Description
AC	Air Conditioning
BES	Blue Economic Sectors
BGO	Blue Growth Observatory
CITES	Convention on Trade in Endangered Species
EDF	European Development Fund
EEDI	Energy efficiency design index
EEZ	Exclusive Economic Zone
EIB	European Investment Bank
ERDF	European Regional Development Fund
ExCo	Executive Committee
FAO	Food and Agriculture Organization
GDP	Gross Domestic Product
ICTS	Singular scientific and technological infrastructure
IMO	International Maritime Organisation
IPPC	Intergovernmental Panel on Climate Change
IUU	Illegal, Unauthorised and Unreported fishing
LCOE	Levelized cost of energy
MPA	Marine Protected Areas
MSP	Maritime Spatial Planning
OAD	Overseas Association Decision
OCTA	Overseas Countries and Territories Association
OCTs	Overseas Countries and Territories
OTEC	Ocean Thermal Energy Conversion
PLOCAN	Oceanic Platform of the Canary Islands
PWP3	Partnership Working Party on Environment
R&D	Research and development
RED	Reverse Electro Dialysis
SDG	Sustainable Development Goal
SOLAS	International Convention for the Safety of Life at Sea
SWAC	Seawater Air Conditioning

TOC	Transnational criminal organisations
UNCLOS	United Nations Convention on the Law of the Sea
UNFCCC	UN Framework Convention on Climate Change
WIGS	West Indies Guard Ship
WRI	World Resources Institute

PREFACE

The European Union, since the Treaty of Rome in 1957 continues to have a strong relationship with the Overseas Countries and Territories (OCTs), a relationship that is enshrined in Part IV of the Treaty on the Function of the European Union. OCTs play a vital role as strategic outposts for the EU. In addition to the OCTs' own priorities, the policy priorities for cooperation are consistent with the overarching priorities of the entire EU space, including the Green Deal and Digital and Sustainable Growth. In this sense, OCTs benefit from European Development Fund (EDF) funding up to the end of the EDF programme, as well as being eligible for wider EU programmes. The EU Multiannual Financial Framework has allocated €500 million for cooperation with the OCTs.

The transition to a blue economy is an overarching EU common priority, underlined by the European Commission recent publication of the "The EU Blue Economy Report 2020", providing an overview of the performance of the EU economic sectors dependant on oceans and the coastal environments. The report established that the blue economy presents a huge potential in terms of its contribution to a green recovery – the EU blue economy reaching a turnover of €750 billion in 2018 and providing an opportunity for the EU and partners to recover from the pandemic crisis stronger, healthier and more resilient. It also emphasised that innovation and education will continue to make a significant contribution towards a transition towards a European Blue Economy. Blue Economy covers all economic activity at, near or derived from our oceans, seas and coasts. It includes traditional sectors – such as fisheries, tourism and aquaculture, but also new areas – such as ocean energy, biotechnology or desalination. For example, the EU is a world leader in ocean energy technology and is on track to produce up to 35% of its electricity from offshore sources by 2050.

Previously, in 2017, the European Commission published the "Realising the potential of the Outermost Regions for sustainable blue growth" report aimed at the Outermost Regions. It examined how the hurdles and bottlenecks during the transition towards a blue economy in these regions can be resolved – particularly regarding the understanding of local ecosystems, financial resources, specialised expertise and structural coordination.

It is fitting, then, that a study specific for the OCTs be conducted. The OCTs are committed to enhancing sustainable economic development through the blue economy. This was reconfirmed in the 2019 Ministerial Conference of the Overseas Countries and Territories Association (OCTA). The aim of the study was to reinforce territorial specificities and value added, in line with the potential blue economy growth. OCTs share similar characteristics, which represent particular challenges for economic growth, and the blue economy is a key to address these challenges. The primary asset common for all OCTs is their relation to natural resources, particularly biodiversity and environment-related services. These assets provide opportunities and require development for the true growth potential to be realised.

The OCTA Blue Economy Roadmap serves as a firm step towards the realistic and achievable transition to a more integrated ocean-based economy. It analyses the current state of play, the potential of new maritime activities, the existing gaps in various sectors, including maritime, blue energy, coastal tourism, infrastructure and logistics and food security, the growth potential and provides recommendations regarding the 2021-2027 programming period.

The OCTs are a group of countries and territories which have many commonalities, one of the most important being their exceptionally rich biodiversity, which is recognised as being of international importance. Sustainable development is the key to unlocking their wealth and to protecting this richness. A successful blue economy in the OCTs is key to fostering regional cooperation in crucial areas of this world.

1 INTRODUCTION

The Rio+ 20 Conference on Sustainable Development,³ provided the foundation for concerns relating to unsustainable practices. These practices elevated the concerns regarding the emergence of climate change, and urgent requirements to strive for mitigation and adaptation solutions; the concept of an ocean-based, or 'blue' economy as a sister to the 'green economy'.⁴ Together these concepts have significantly increased global debate concerning the role of coastal and ocean waters in achieving sustainable development with oceans viewed as the next frontier of future development.⁵

Adopted by the UN General Assembly in September 2015, the 2030 Sustainable Development Agenda provides for 17 Sustainable Development Goals (SDGs), and delivers among others a guide for the development of international, regional and national ocean governance frameworks⁶. Specifically, of the 17 SDGs the direction of SDG 14 concerns the important role of oceans and the need for sustainable development to enable an ocean-based economy. More importantly, SDG 14 is considered to act as a 'key driver,' which places the ocean at the core of the 2030 sustainable development agenda. In parallel SDG 14 seeks to kick-start new Blue Economic Sectors and helps steer the efforts of the development and donor communities to assist in the realisation of the agenda.⁷ To evaluate success, a framework of targets, indicators and time-period (2030) for measuring economic social and environmental improvements were developed, these encapsulated within SDG 13⁸ and SDG 14.

The OCTs are small islands states, which increases their vulnerability to impacts of climate change, the 2015 Paris Agreement on Climate Change notes the increased threat on small islands and their economies and sets out the crucial role oceans play in mitigating those impacts. Certainly, OCTs have a larger dependency on oceans and associated eco-systems than larger continental bound countries and therefore the environmental, social and economic risk for OCTs are significantly higher.

Developing OCTs Blue Economy Sector will provide a threefold solution. Firstly, it will bring to the fore an increased awareness of the total monetary returns of oceans to the national economies both through contribution to national GDP and via employment. Second, this will foster a desire to understand the potential threats such as over-exploitation of marine resources, over-reach of carrying capacities, marine pollution, and decrease in essential biodiversity. Thirdly, together these will stimulate an appreciation of the eco system, which in turn will encourage the development and implementation of the measures necessary to ensure long-term ocean sustainability.

The OCTA Blue Economy Roadmap sets out the analyses made from data collected from a participatory process, which explored OCT stakeholders' perception to the next step requirements, aspirations, gaps and challenges. In parallel with in-depth examinations carried out by three experts representing four blue economy sub-sectors to develop a step-by step approach by way of recommendations aimed at facilitating the emergence of OCT Blue Economic Sectors (BES)

³ <https://sustainabledevelopment.un.org/rio20.html>. Accessed 05.03.2021

⁴ United Nations Environment Programme, *Green economy in a Blue World: Synthesis Report* (United Nations,2012).

⁵ Organisation for Economic Co-operation and Development, *The Ocean Economy in 2030*, (Paris: OECD Publishing, 2016)

⁶ United Nations Department of Economic and Social Affairs, "Sustainable Development Knowledge Platform: Sustainable Development Goals", <https://sustainabledevelopment.un.org/sdgs>. accessed 09.03.2021

⁷ United Nations, UN Conference on Oceans (2017) "Our Ocean Our Future Call for Action", <https://oceanconference.un.org/callforaction>. Accessed 09.03.2021

⁸ United Nations Department of Economic and Social Affairs, "Sustainable Development Knowledge Platform: Sustainable Development Goal 13", <https://sustainabledevelopment.un.org/SDG13>. accessed 10.03.2021

1.1 Background

The Overseas Countries and Territories (OCTs) associated with the European Union cover a combined Exclusive Economic Zone of more than 17 million km², constituting one of the world's largest maritime areas. Four of the ten largest marine protected areas in the world are located in OCTs contributing to almost 18% of the global coverage. Oceans and their governance are of strategic significance for OCTs and as such, OCTs have developed actions or policies that provide guidance for other Islands, EU and global stakeholders.

OCTs make up a group of countries and territories which, despite displaying a number of differences between them (in terms of relative wealth, geographical characteristics, physical isolation and internal political organisation), retain many commonalities for example, insular micro-economies, and rich biodiversity. Sustainable development is a key to unlock the wealth of OCTs, but a variety of economic and social difficulties impede progress. In terms of relative wealth, the revenue per capita is very diverse, ranging between € 4 000 and more than € 40 000 per capita. Half of the OCTs income per capita is less than € 13 000 per inhabitant. Employing the Millennium Development Goals (MDGs) internationally defined assessment protocols, the social situation for the majority of OCTs is not one of absolute poverty. However, OCTs exhibit a heavy dependence on financial assistance from external sources such as the related EU Member State or from the EU (EDF).

1.2 OCTA

Created in 2002, the Overseas Countries and Territories Association (OCTA) provides a forum to develop effective working relationships with the EU. OCTA also supports and promotes the collective interests of its Members in specific areas of co-operation within the framework of the EU-OCT Association arrangements, these include: economic and trade co-operation; trade development; climate change and environmental issues; human and social development; cultural and social and regional co-operation and integration.

An Executive Committee (ExCo) executes all the activities of the association and manages OCTA. The ExCo maintains daily contact and working relationships with OCTA members, EU institutions and other relevant partners to the benefit of the Association as a whole and reports to its members. The ExCo consists of eight members and one president representative of the OCTs. At present time [2021], Aruba is the representative of ExCo and is the President of ExCo.

Current state of affairs in the relevant sector

Overseas Countries and Territories (OCTs) are aiming to reinforce their territorial specificities and value added in line with the blue economy. Generally, there is a need to better appraise the blue economy and its subsectors in order to strengthen their economies' sustainability. OCTs share similar characteristics, which represent particular challenges for economic growth. They face the challenge of globalisation, and in response must become more competitive. The OCTs geographical isolation also results in high transportation costs, whilst the small size of economies, in particular those of the local markets, a high dependency on imports and occasionally financial transfers are all common features. As OCTs competitiveness cannot be based on low costs (especially low labour costs), stimulating the blue economy is key to address the challenge. One of the main assets for the OCTs to draw on its rich natural resources. The natural resources in particular biodiversity, the availability of exclusive zones, and although limited, its experience in environment-related services. However, these assets remain embryonic in status and need support to stimulate and achieve mature status. To enable that transition, a well-defined strategy is required that would embrace the development of new maritime activities, which would support Blue Growth in each of the OCTs.

2 RESEARCH METHODOLOGY

2.1 Document review

The experts collected the secondary data, in a variety of formats, Reports, Policy, Strategy, Numerical Data Sheets, and Geo-Information for the OCTs identified. A long list of these are to be found in the Bibliography section. The team data mined for Government policies for each OCT within their given area of expertise, these include: Maritime Policy, Renewable Energy, Food Security and Sustainable Development.

2.2 Online Survey & Interviews

Data is obtained from a custom-made survey and is analysed through a secure platform to ascertain results. These results, together with the data from interviews, are used to enrich the results and confirm (or not) results derived from the secondary data. This data also assists in the identification of gaps and challenges on an OCT-by-OCT basis. The questions from the online survey can be found in Appendix B. Tables 2-1 and 2-2 provide some statistics from the online survey. There were 69 respondents who completed the survey. With some covering multiple OCTs, this adds up to 132 representatives from the OCT perspective.

NOTE: During the analysis and drafting of the report, all respondents are referred to as 'representatives' to absolve any queries, if the discussion is distinct for example only Government Representatives then the report will acknowledge that fact. The term 'representative' is therefore broad in context and private sector and academic respondents also qualifying as 'representatives' but only of their own sector. But for clarity sake, when there is a high level of agreement it means that representatives of all sectors agreed with a certain statement, which increased its viability.

TABLE 2-1 REPRESENTATION SECTORS IN SURVEY

Sector	Number of respondents
Government or Government Agency	41
Private Sector	23
Academic/Research Institution	5

TABLE 2-2 REPRESENTATION OCTS IN SURVEY

OCT	Number of respondents
Aruba	21
Bonaire	9
Curaçao	14
French Polynesia	4
French Southern and Antarctic Lands	2
Greenland	4
New Caledonia	5
Saba	11
Saint Barthélemy	6
Saint-Pierre-et-Miquelon	3
Sint Eustatius	12
Sint Maarten	33
Wallis and Futuna	8

2.3 OCT profiles

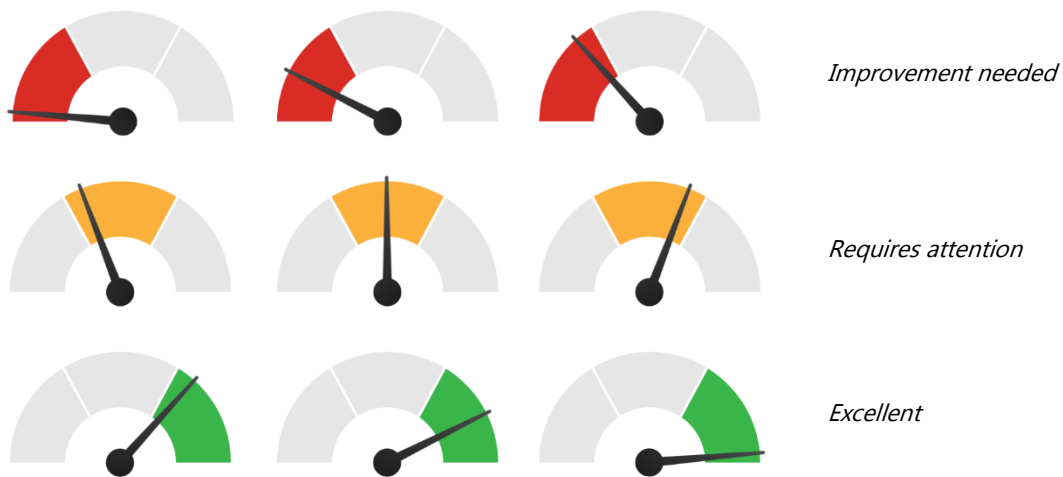
The OCT profiles each consist of 5 pages which contain a general introduction, and a page for each of the topics: food security, blue energy, blue tourism, and maritime. This section provides a short explanation behind the status dials, scoring system, and a more detailed explanation for some specific terms.

Each page starts with an overview with **dials** on the top of the page to indicate the status of identified policies and/or reports in the OCT on a specific topic. These are based on a scoring system ranging from 1 (lowest) to 9 (highest). All topics cover external policy, internal policy and International / regional. This is further explained in the table below.

TABLE 2-3 SUBJECTS ON IDENTIFIED POLICIES AND/OR REPORTS EXPLAINED

Subject	Explanation
External policy	This refers to all policies determined outside the OCT (in most cases by the Member State to which the OCT is associated) that has effect on the functioning of an OCT.
Internal policy	This refers to all policies and strategies determined by the government of the OCT itself.
International / regional	This refers to any analytical reports, ore recommendations for policy or strategy (including any regional agreements and protocols) that emanate from international or regional organizations and affect the functioning of the OCT.

FIGURE 2-1 OVERVIEW OF DIALS USED TO INDICATE THE STATUS (SCORES 1-9)



Each topic also contains a SWOT analysis, which emphasizes the **S**trengths, **W**eaknesses, **O**pportunities and **T**hreats. These are described in a box as illustrated below:

- S:** Description of strengths
- W:** Description of weaknesses
- O:** Description of opportunities
- T:** Description of threats

In the **blue energy** section of the profiles, two more dials represent an overview of the global interest for marine energies through the dials indicated in the table below.

FIGURE 2-2 OVERVIEW OF DIALS USED TO INDICATE THE STATUS

Subject	Explanation
Marine energies resources	The scoring aims to represent the available resources compared to the needs of energy of the OCT
Impact of implementing Marine energies on CO2 emissions of the OCT	This score aims at considering the interest of the transition effort to marine energies compared to the current mix, in terms of CO2 emissions.

A similar scoring method with a colour scale from fair to exceptional is used. This score is a current statement as it comes from resources with preliminary evaluation and following either the available publications on the subjects, or what has been communicated to the expert during the interviews. It is pointed out that this evaluation is not always in the influence of the OCT. This section includes a table with the energy resources of the OCT.

3 IMPACTING LEGISLATION

The main international legal instrument for the oceans is the 1982 United Nations Convention on the Law of the Sea (UNCLOS)⁹, which defines rights and obligations of states within their maritime space, and includes provisions for marine environmental protection and the management of its resources. The International Maritime Organisation (IMO) a specialised agent of the United Nations (UN) is empowered to carry out the enforcement of UNCLOS and does so in the framework of agreements of signatory nations to many conventions that develop when elements of UNCLOS are not being adhered to, of which some are mandatory.

For example, the International Convention for the Safety of Life at Sea (SOLAS), generally regarded as the most important of all international treaties concerning the safety of merchant ships; the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 and Protocol of 1997 (MARPOL). Along with the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (LC), 1972 (and the 1996 London Protocol). The IMO also have a special regard for environmental protection and reduces pollutions that occur by maritime traffic or in ports. The OCTs will be signatory to UNCLOS by way of Associated EU Member State (France, Netherlands, Denmark), but will have been included by invitation to the meetings prior to their adoption.

Other treaties include the Convention on Trade in Endangered Species (CITES)¹⁰, the Convention on Migratory Species¹¹, the UN Straddling Fish Stocks Agreement¹² and the UN Framework Convention on Climate Change (UNFCCC) these provide OCTs the international context within which the ocean is used. Due to the time constraints of the project further examination to identify which OCTs are signatory was not possible. The 2019 Ministerial Conference¹³ of the Overseas Countries and Territories Association (OCTA), together with the Ocean Conference and the Ocean Declaration¹⁴ signed on this occasion, confirmed the OCT Governments' commitment to enhancing sustainable economic development through the blue economy. Outermost Regions have been developing economic areas related to the blue economy for a number of years, when they first focused on the benefits of this specific area.

However, since UNFCCC most OCTs have managed their coastal waters in a sectorial fashion, the maritime expert noted that there is some frustration influencing ocean management by OCTs. This has resulted in some inadequate coordination across regional and national institutions and limited harmonization of legal instruments has caused for duplication, inefficiencies and governance gaps in decision making. These confusions predominantly created by the Associated EU Member State (*This the country that has some oversight on an OCT such as Denmark, The Netherlands or France*). Evidence points to the fact that responsibility for most of the island's 'maritime' activities (those at sea) have remained within the Associated EU Member State umbrella and OCT not having specific responsibility for UNCLOS implementation. This has created a knowledge void concerning 'maritime', especially enforcement, which has increased exponentially for over 30 years resulting in the development of little or no local expertise.

⁹ https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf (Accessed 11.03.2021)

¹⁰ *The Convention on International Trade in Endangered Species of Wild Fauna and Flora*, (adopted 3 March 1973, entered into force 1 July 1975) 993 UNTS 243.

¹¹ *Convention on the Conservation of Migratory Species of Wild Animals* (adopted 23 June 1979, entered into force 1 November 1983) 1651 UNTS 333.

¹² *United Nations 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* (adopted 4 August 1995, entered into force 11 December 2001) 2167 UNTS 88.

¹³ Tahiti, French Polynesia, from 25th February to 1st March 2019.

¹⁴ <http://www.octassociation.org/signature-of-the-declaration-on-oceans-by-octs>

European Union

The OCTs are strongly associated with the European Union through the application of a regime based on the provisions of Part IV of the Treaty on the Functioning of the European Union. The Overseas Association Decision (OAD) provide the rules and principles for the association and these officially adopted by the Council in 2001 and amended in 2007 and 2013. Further amendments taken on the 1st of February 2020 in response to BREXIT resulted in the UK OCTs no longer being associated to the EU. From a legal perspective, the EU Treaties as amended by the Treaty of Lisbon¹⁵, in particular the Treaty on the Functioning of the European Union, is important for OCTs as it states:

Article 198: *The Member States agree to associate with the Union the non-European countries and territories, which have special relations with Denmark, France, the Netherlands, and the United Kingdom. These countries and territories (hereinafter called the 'countries and territories') listed in Annex II. The purpose of association shall be to promote the economic and social development of the countries and territories and to establish close economic relations between them and the Union as a whole. In accordance with the principles set out in the preamble to this Treaty, association shall serve primarily to further the interests and prosperity of the inhabitants of these countries and territories in order to lead them to the economic, social and cultural development to which they aspire.*

Article 199: *Association shall have the following objectives:*

1. *Member States shall apply to their trade with the countries and territories the same treatment as they accord each other pursuant to the Treaties.*
2. *Each country or territory shall apply to its trade with Member States and with the other countries and territories the same treatment as that which it applies to the European State with which it has special relations.*
3. *The Member States shall contribute to the investments required for the progressive development of these countries and territories.*
4. *For investments financed by the Union, participation in tenders and supplies shall be open on equal terms to all natural and legal persons who are nationals of a Member State or of one of the countries and territories.*
5. *In relations between Member States and the countries and territories, the right of establishment of nationals and companies or firms shall be regulated in accordance with the provisions and procedures laid down in the Chapter relating to the right of establishment and on a non-discriminatory basis, subject to any special provisions laid down pursuant to Article 203.*

The provisions of Articles 198 to 203 shall apply to Greenland, subject to the specific provisions for Greenland set out in the Protocol on special arrangements for Greenland, annexed to the Treaties.

Part three and four of Article 199 have a specific significance for OCTs; because they allude to the expectation of investment assistance from an OCTs Associated EU Member State and therefore will provide an extremely important window of opportunity for OCTs for the implementation of the recommendations in the Study.

¹⁵ EU Treaties as amended by the Treaty Of Lisbon (Accessed 12.03.2021)

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/228848/7310.pdf

4 VISION

The OCTA Blue Economy Roadmap's vision is: 'To develop and support a distinctive OCT Blue Economy Sector (BES) for OCTs and provide robust guidelines to assist individual OCTs to fulfil their aspirations of identifying, and ordering their Blue Economy Industries into a sustainable and economically viable sector. The BES aims to significantly increase high value employment opportunities for national citizens, attract investment and increase the sectors economic contribution to national GDP. Key objectives focus on short, medium and long-term goals in line with International, European and National Policies and each goal aligned to the sustainable use of national ocean blue resources ensuring the conservation of the marine environment for current and future generations.'

The OCTA Blue Economy Roadmap defines the Blue Economy to include all industrial/commercial sector activities that are marine-based or dependant on the marine environment. Therefore, the Study considers not only established sectors (i.e. those that traditionally contribute to the Blue Economy) but also emerging sectors, where data is limited, and innovative sectors, which brings new opportunities for investment, and indicates a great potential for the future development of coastal communities.

Investment and funding are critical if a sustainable Blue Economy Roadmap can be realised. With that in mind, the OCTA Roadmap has adopted the **Sustainable Blue Economy Finance Principles**¹⁶ developed by the European Commission, WWF, the World Resources Institute (WRI) and the European Investment Bank (EIB) and is hosted by UNEP FI as part of the Sustainable Blue Economy Finance Initiative. These 14 principles are deemed to be 'the foundational keystone' to invest in the ocean economy. Launched in 2018, they are the world's first global guiding framework for banks, insurers, and investors to finance a sustainable blue economy. They promote the implementation of SDG 14 (Life below Water), and set out ocean-specific standards, allowing the financial industry to mainstream investment that has a goodness of fit for sustaining ocean-based sectors.

The strategic approach for OCTs to unlock investment opportunity from their blue resources is to align with financial strategic expectations of the main investment bodies. It is fully recommended that OCTs adopt the following principles because they provide an important framework to align national principles with those of the financial industries.

1. **Protective:** We will support investments, activities and projects that take all possible measures to restore, protect or maintain the diversity, productivity, resilience, core functions, value and the overall health of marine ecosystems, as well as the livelihoods and communities dependent upon them.
2. **Compliant:** We will support investments, activities and projects that are compliant with international, regional, national legal and other relevant frameworks which underpin sustainable development and ocean health.
3. **Risk-aware:** We will endeavour to base our investment decisions on holistic and long-term assessments that account for economic, social and environmental values, quantified risks and systemic impacts and will adapt our decision-making processes and activities to reflect new knowledge of the potential risks, cumulative impacts and opportunities associated with our business activities.

¹⁶ <https://www.unepfi.org/blue-finance/the-principles/> Accessed 09.03.2021

4. **Systemic:** We will endeavour to identify the systemic and cumulative impacts of our investments, activities and projects across value chains.
5. **Inclusive:** We will support investments, activities and projects that include, support and enhance local livelihoods, and engage effectively with relevant stakeholders, identifying, responding to, and mitigating any issues arising from affected parties.
6. **Cooperative:** We will cooperate with other financial institutions and relevant stakeholders to promote and implement these principles through sharing of knowledge about the ocean, best practices for a sustainable Blue Economy, lessons learned, perspectives and ideas.
7. **Transparent:** We will make information available on our investments and their social, environmental and economic impacts (positive and negative), with due respect to confidentiality. We will endeavour to report on progress in terms of implementation of these Principles.
8. **Purposeful:** We will endeavour to direct investment to projects and activities that contribute directly to the achievement of Sustainable Development Goal 14 (“Conserve and sustainably use the oceans, seas and marine resources for sustainable development”) and other Sustainable Development Goals especially those which contribute to good governance of the ocean
9. **Impactful:** We will support investments, projects and activities that go beyond the avoidance of harm to provide social, environmental and economic benefits from our ocean for both current and future generations.
10. **Precautionary:** We will support investments, activities and projects in our ocean that have assessed the environmental and social risks and impacts of their activities based on sound science.
11. **Diversified:** Recognising the importance of small to medium enterprises in the Blue Economy, we will endeavour to diversify our investment instruments to reach a wider range of sustainable development projects, for example in traditional and non-traditional maritime sectors, and in small and large-scale projects.
12. **Solution-driven:** We will endeavour to direct investments to innovative commercial solutions to maritime issues (both land- and ocean-based), that have a positive impact on marine ecosystems and ocean-dependent livelihoods. We will work to identify and to foster the business case for such projects, and to encourage the spread of best practice thus developed.
13. **Partnering:** We will partner with public, private and nongovernment sector entities to accelerate progress towards a sustainable Blue Economy, including in the establishment and implementation of coastal and maritime spatial planning approaches.
14. **Science-led:** We will actively seek to develop knowledge and data on the potential risks and impacts associated with our investments, as well as encouraging sustainable investment opportunities in the Blue Economy. More broadly, we will endeavour to share scientific information and data on the marine environment.

5 OCTA BLUE ECONOMY ROADMAP

STRATEGIC PRIORITIES

Four classified strategic priorities provide the overall framework for the Roadmap. The results from the survey and expert examinations provided the overall context and key data, which, provided the Roadmap recommendations.

Importantly, the research study embraced a participatory process; this engaged with all the OCT representatives, ensuring that results took into consideration the expectations of OCT governments, private and academic sectors. Results from the survey established that the participants responded in a very honest manner; this in itself is extremely important, as it provided the expert responsible for each part of the study a clear picture of the reality of the potential BES sector, ensuring that recommendations could provide the correct intervention measure.

NOTE: The recommendations are based on the recommendations and comments made by at least 75% of OCT representatives. In some cases an OCT may have more capacity than another, but it was thought that in order to achieve a sustainable step- by –step approach the study should operate on the ‘read from the same page’ rule.

5.1 Strategic Priority One

To create and develop the OCT Blue Economy Sector (BES), to provide clarity for governments, private sector, academic sector, and investors.

The implementation of blue economy principles for some OCTs is currently in progress, as an understanding exists that the development of a new and innovative sector will provide an important turnkey to unlock national blue resources. However, this is currently carried out in a piecemeal fashion that lacks cohesion and restricts necessary intervention measures.

On the question of the commitment by government agencies, blue economy industry representatives, private enterprises and other stakeholders to help fill the gaps in order to improve the blue economy, the majority opinion by OCTs Government representatives was ‘maybe’ with an even spread across ‘yes’ or ‘no’ whilst the private and academic sectors firmly stated that they did not believe that there was a commitment from their National government to the development of a Blue Economy.

This supports the notion of a ‘piecemeal’ approach and expresses a lack of transparency between OCT governments, their agencies, and the private and academic sectors. However, the sector is new, and it is understandable that a lack of information would disrupt blue economy development. In order to support the development of the BES it will be critical that OCTs develop a strong national vision, forward actions and communicate to the private, academic sectors and public through targeted promotional campaigns, events and materials. This in turn will encourage ‘take up’ of the BES opportunities that the different sub-sectors and public can take advantage of.

This is supported by representative recommendations, such as: *"Our Government has incorporated Blue Economy as an area of Economic Development in its government program."* In addition, *"information should be provided in order to create more awareness within the Governments of the OCTs"* and *"when there is more basic and education/informative information available that will demonstrate the benefits of the Blue Economy in terms of job creation and revenue generation"* and *"having more workshops/seminars to promote blue economy in the Caribbean and change the mentality of small island destination/states to large ocean states"*.

The private sectors representative's commitment to developing the BES resulted in a higher response to 'Yes' and 'Maybe' with very few selecting 'No'. This underlines the readiness of the private sector to initiate actions to accelerate the BES in OCTs.

Recommendations from private sector survey representatives included; *"a need to show and provide more information for the private sector to pursue the [blue economy] industry when they can see how many opportunities and income possibilities there are, to encourage them to take the risk and/or shift or expand their present business"*.

The key to unlock the potential of the private sector is co-joined with the requirement for the OCTA Blue Economy Roadmap to act as the first stage of the process. The second stage is a Blue Economy Strategy to underpin the Roadmap and to provide a template for OCTs to develop national strategies, providing the private sector a clear vision of where and how they can contribute.

Recommendation: The development of the OCT Blue Economy Sector Strategy aimed at providing an overall BES strategy for OCTs and provide a template that OCTs can utilise in the development of OCT National Blue Economic Sector Strategies. This strategy must be clearly time sequenced, to ensure that prerequisite activities, identified and given early priority, in order to avoid holding up important activities that depend on them.

5.1.1 OCTs State of Blue Economy Play

If the BES is to move from a 'not established, embryonic state' to become a mature and thriving sector, what is required is a cohesive, joined-up approach to identify established or to establish available opportunities for other ocean-based sub-sectors. This will require commitment by government, private sector and civil society, in alignment with national development strategies and regional and international commitments.

To achieve an understanding of the OCTs 'state of play' representatives provided data to ascertain their opinion of the position of the Blue Economy Sector in their OCT country. *Not Established, Embryonic, Mature, Very Mature, or I am not sure.*

For example, apart from New Caledonia which had a strong opinion that their sector was reaching or had reached Maturity, the majority of OCTs leaned towards Embryonic.

Aruba, Bonaire, Curacao, Saba, St Eustatius, Wallis, and Futuna, Saint Barthelemy, French Southern and Antarctic Lands, French Polynesia and Greenland all considered that the Blue Economic Sector was Embryonic. However, each country had a significant number of responses of 'I am not sure' or 'Not Established'. Considering these responses along with the expert observations, a conclusion is that this is due to the individual potential BES activities of organisations, acting in isolation and resulting in the activity not gaining the appropriate recognition at the Government level. Supporting that line of enquiry, analysis of the same question measured

by sector revealed that the majority of private sector responses indicated; 'not established' which would confirm that they lack information relating to how they can contribute to or have knowledge of the (BES) sector. In Sint Maarten and Saint-Pierre-et-Miquelon the majority of representatives have recorded that the blue economy sector in their OCTs are 'not established'; a very small degree of their representatives considered that there was some embryonic activity.

Recommendation: Sint Maarten and Saint-Pierre-et-Miquelon receive specific focus and support to help clarify their vision of their (BES) sectors and key stakeholders.

Currently, there is little information regarding the Blue Economic Sector, countries just adding elements where they believe they may exist. Considering that the implications of climate change for OCTs are higher than in other countries, it is vital that OCTs get ahead of the game and forge the pathways that will deliver on their aspirations. Taking into account the 14 principles (above) of the Sustainable Blue Economy Finance Initiative, the concept of a thriving Blue Economy Sector must be at the forefront of OCTs mind. BES sub-sectors will have a symbiotic relationship to each other and together they will represent a significant sector ripe for investment. Many of these sub-sectors are consumed by other sectors - 'tourism' for example and their economic contribution to BES subsumed by that sector. In order to clarify the actual economic value of the BES it is critical to know and recognise all the sub-components that contribute to that sector.

The first step to clarify OCTs BES is to identify the different sub-components of the OCTs BES, which will allow governments to have targeted communication to the relevant stakeholders and promote BES at the OCTs governmental level. The intention is to allow relevant government departments, private, academic institutions, and other stakeholders to ascertain their position and if they have the capability to contribute to the development of the blue economy sector. This first step is emphasised by an OCT representative who stated *"objectively demonstrate (technical studies) the potential of the blue economy in the territory and quantify this potential"*.

Recommendation: The OCT Blue Economy Sector Expansion Study, (i) identifying and clarifying the key contributing OCTs government departments and private industries; (ii) the linkages between them, (iii) a methodology for enabling BES critical mass and (iv) a template for initiating focused and targeted communication and promotion of the BES. The result will provide the first element of an overall and standardised OCT BES Strategy.

5.1.2 Mapping OCTs key BES maritime sectors into clusters

The development of maritime clusters derives from the identification and mapping of the geolocation of significant clusters, these clusters can contain a multitude of companies and institutions that operate within the maritime regime, or in this case operate within the framework of the BES.

The concept of mapping the key BES sub-sector activities is based on the maritime cluster ideals, which eventually can develop an economic inventory in which the different BES sub-sectors are amalgamated into clusters in order to focus on developing cross-cutting policy approach for the ocean/sea-related sectors. The economic inventory would provide OCTA and OCTs an overview of the absolute economic value, in terms of

employment, production value and added-value of the overall BES OCT clusters. The economic value of a sector will be defined by the turnover of a sector minus the intermediate purchases within that sector. The production value consists of intermediate purchases in other sectors (domestic and import) and added-value.

The importance of developing such a knowledge resource is that, on an annual basis, the actual contribution of the BES cluster to national OCT GDP can be assessed and evaluated; and where needed interventions and/or support mechanisms can be employed to assist the improvement of the individual BES sub-industries. In parallel, OCTA is well placed to merge the data and to provide an overview of the economic value of the different BES components, for all OCTs provide an insight into successful interventions and where collective difficulties exist. Thus, combining the overall strengths and identifying common weaknesses of all OCTs, will lead to better mutual intervention measures. Due to the recommendation of the (2008) EU maritime cluster strategy¹⁷ nearly all EU countries have a well-developed Maritime Cluster which oversees national cluster development and provides data to EUDATA to combine results and report on the overall Economic Value of European Maritime Clusters. These include France, The Netherlands, and Denmark.

The mapping results provided by the experts (See OCT profiles in the appendix) demonstrate that there are significant BES clusters within the OCTs. The fact that this report only considers the Food Security, Blue Energy, Maritime and Coastal Tourism industries and the exercise provides merely a snapshot underlines the potential of utilising the identified clusters as a foundation for generating BES critical mass. Gaining a deeper and more organised method of understanding the economic value of the BES sub-sectors will enable OCTs to identify coordination activities and drive the necessary intervention strategies. These aim at accelerating the clusters' position in the value chain, help the industries to achieve critical mass, attain maturity and attract investment; this in turn will increase their overall contribution of the BES to OCTs' GDP.

Of interest, Denmark's Maritime Cluster has already developed a 'Blue Economy Cluster' and a strategy for implementation. In particular fishing which is a BES activity and key provider for Greenland's GDP. Considering that Denmark through legislation retains responsibility for the maritime aspects of Greenland, a question arises of the reason why Greenland Authorities were not consulted or engaged during that process. The conclusion reached from the expert examination is that this was simply an oversight by the Denmark Maritime Cluster. However, moving forward it will be important for the relevant authorities of Greenland to engage with Denmark's Maritime Cluster in order to develop a streamlined approach to the development of the Greenland Maritime Cluster.

Recommendation: Greenland OCT to operationalise a two-way communication with the Danish Maritime Cluster with a focus on the BES industries to gain support for the initiation and development of the Greenland BES Maritime Cluster.

Both New Caledonia and French Polynesia have existing maritime clusters, but these require support to enable their full potential. The French Polynesia cluster more recently focusses also on various innovations. For the development of OCTs Blue Economy Sectors, a slight change in the assessment formula is required to that of the maritime cluster formula. This is because the maritime cluster also embraces maritime operations such as offshore oil/gas extraction, which are non-sustainable activities. From a BES functionality perspective, the recommendation is that only BES sub-sectors identified in the OCT Blue Economy Sector Expansion Study will be included; (for example, environmental regeneration can attract significant investment, which previously has not been the case).

¹⁷ European Commission (2008) *The role of Maritime Clusters to enhance the strength and development in European maritime sectors*

This is meant to set the limitations and scope of the OCT Blue Economy Sector, which must be a sector in its own right and would struggle if solely associated with other economic sectors. It will also require collaboration with the relevant National Maritime Clusters (France, The Netherlands, and Denmark).

For those OCTs that do not have an existing Maritime Cluster organisation it is important to initiate these as quickly as possible and/or to initiate cooperation agreements with the one of a "sister" OCT/Island. This is supported by an observation by an OCT representative who stated that it is necessary '*to awaken the interest and awareness of decision-makers to the opportunities of the blue economy, the designation of a national / territorial scale or at the scale of the Pacific basin would make it possible to present these opportunities and compare them to the local context. This could be attached to a territorial or regional OCT cluster*'.. . and. . '*I would like access to a Map and Database of all other Stakeholders operating in my area of expertise*'.

Certainly, by developing the OCTs maritime BES clusters, stakeholders will be able to access with ease a map and an associated database containing commercial companies' information and will thus provide a platform for potential partnerships/ investment dialogue to evolve.

Recommendation: In collaboration with established OCTs Maritime Clusters and with the French, Dutch or Danish Maritime Cluster, to develop a standardised OCTA template of all industries that contribute or facilitate to the Blue Economy Sectors;

Recommendation: Development of an OCT common platform tool (or offer an existing tool) to provide to every OCT an online template to enable OCTs government an accessible means to develop national cluster development;

Recommendation: Where OCTs do not have an established BES Maritime Cluster and in order to reduce duplication of costs, the establishment of BES Maritime Clusters taking into account multiple countries. The eventual economic analysis would by default take into account individual countries.

5.2 Strategic Priority Two

Securing a Sustainable Resilient Knowledge Centric Framework for the OCT Blue Economy Sector (BES)

5.2.1 Technical and capacity development (skills) required to accelerate OCT blue economy development

The sustainable development goal SDG 14 has a specific initiative that recognises that there is a common global requirement for capacity development for integrated ocean governance, and that this is essential to achieve sustainable development of oceans and coasts, respond to new challenges, mitigate or adapt to climate change, plastics and other pollution, as well as the provision of coastal livelihoods. It notes that funding is limited and there has been little collaboration and coordination of efforts among the many actors that assist in capacity development. To counter this 'weakness' there is a global strategy for ocean readiness, mobilizing expertise and partnerships, in the development stage to ensure that governments and institutions have the skills, knowledge, and capacity to develop Blue Economy frameworks, in a long-term, integrated manner¹⁸.

The work carried out by the experts concluded that this lack of human capacity represents a BES 'weakness' at the OCT level for all the four sub-sectors that they examined, but without intervention in the long-term the 'weakness' will advance and become an implied BES 'threat'.

The survey was designed specifically to gain a better insight of OCT representatives into the required capacity and skills development for OCTs to support the progresses of the BES and resulted in a view that there exists a national shortage of the necessary human capacity to accelerate the BES from an embryonic state and onwards to a mature sector. This was supported by observations made by the experts from their analysis of work carried out on the four sub-sector country profiles.

The requirements of specific solutions or initiatives to support capacity projects that are forward thinking, comprehensive, and integrated across sub- sectors of the OCT BES are clearly demarked for specific attention. The mind-set that mechanisms to unlock investment and financing can be implemented via sector-specific projects without the application of integrated capacity building projects that will lead to the long-term strategic development of institutions and capacity among high-level decision-makers and BES stakeholders does not resonate with the ideal of 'sustainability'.

The focus of developing Sustainable Resilient Knowledge Networks is to help build the skills and networks that are required for effective leadership, policy development, BES sector development, enabling investment to provide a national system to equip the next generation with the skills and knowledge necessary to contribute to the BES via employment platforms. The combined focus at the individual and institutional level will ensure that OCT BES industries remain a priority of the sustainable development agenda and ensure effective long-term employment and investment.

This can be achieved through a range of training initiatives and academic programs aimed at all societal levels, from upper management, mid management, students, and especially for future generations. At the organizational level, the focus will be on strengthening institutional structures, processes, and resources through analysis, development and sharing of best practices.

¹⁸ <https://sustainabledevelopment.un.org/partnership/?p=288> (Accessed 12.03.2021)

The main initiative to kick-start the process outlined by OCT representatives is the development of a 'blue growth skills strategy' that could express clearly the training and educational requirements to enable the BES. The 'blue growth skills strategy' would provide OCTs with a breakdown of needs and provide the specific guidance on the methods to attain human critical mass, based on what is available and a gap analysis of each OCT.

Recommendation: Developing OCT Blue Economy Human Capital Training and Education, a Guidance and Roadmap. This needs to incorporate the following.

- Measures to support self-employment, entrepreneurship and business creation;
- Blue Economy focused Vocational Courses;
- Knowledge Transfer Partnerships (Universities linked to Private Enterprises);
- Promotion of Blue Careers Initiatives (including: Internships/ Thesis / Post Doc and BES Job publication platforms);
- Provision of short SMART BES Training Programmes;
- Access to new University Under/Postgraduate courses;
- New Apprenticeships;
- Developing the Role of Maritime Clusters to assist Training Initiatives, but also awareness

5.2.2 Infrastructure required that will help to accelerate Blue Economy development in the OCT or region

This topic leads directly on from the training and capacity needs, the work carried out by the three experts points to infrastructure (physical or virtual) already in place, which can be exploited more effectively to support the emergence of a strong BES. The study examined OCT representatives' opinion of infrastructure requirements. In some BES areas, these structures could be accommodated by using or adapting existing structures, whilst others may require governments to develop short/medium/long term steps to accommodate increasing needs in line with BES emergence.

The OCT BES will emerge slowly at first but will then accelerate exponentially. Thus, it will be critical for governments to have infrastructure development plans in place to match the pace of progress rather than utilise the 'as and when' approach. Certainly, some infrastructures could also be used for other areas, such as agriculture, where a similar green approach is required and where certain dependant relationships exist. The food security and blue energy experts noted that desalination plants can be powered by Blue Energy Resources to provide clean water, and that blue biotechnologies derived from algae, seaweed and sea moss can supply a significant nutritional resource to support the agriculture industry. A similar scenario also exists for the Blue Energy sector with the apparition of hydrogen as a cross cutting media between Blue energies and new hydrogen shipping fuels of which the cruise industry is working towards replacing all ships fuel systems from fossil fuel to Green hydrogen or ammonia by 2030.¹⁹ The IMO GHG Strategy identifies levels of ambition for

¹⁹ The Paris Agreement on climate change was agreed in 2015 by Parties to the United Nations Framework Convention on Climate Change (UNFCCC) and entered into force in 2016. The Paris Agreement central aim is to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2 degrees Celsius

the international shipping sector noting that technological innovation and the global introduction of alternative fuels and/or energy sources for international shipping will be integral to achieve the overall ambition. Reviews should take into account updated emission estimates, emissions reduction options for international shipping, and the reports of the Intergovernmental Panel on Climate Change (IPCC). Levels of ambition directing the Initial Strategy are as follows:

- Carbon intensity of the ship to decline through implementation of further phases of the energy efficiency design index (EEDI) for new ships; to review with the aim to strengthen the energy efficiency design requirements for ships with the percentage improvement for each phase to be determined for each ship type, as appropriate;
- Carbon intensity of international shipping to decline;
- To reduce CO2 emissions per transport, as an average across international shipping, by at least 40% by 2030, pursuing efforts towards 70% by 2050, compared to 2008;
- GHG emissions from international shipping to peak and decline;
- To peak GHG emissions from international shipping as soon as possible and to reduce the total annual GHG emissions by at least 50% by 2050 compared to 2008 whilst pursuing efforts towards phasing them out as called for in the Vision as a point on a pathway of CO2 emissions reduction consistent with the Paris Agreement temperature goals²⁰.

OCT representatives agreed that an Investment Platform incorporating aquaculture and fisheries, knowledge, blue renewable energy, biotech, tourism, environment, and maritime sectors is the first priority.

Recommendation: Development of an OCT wide Investment Know-how Platform accessible by all OCTs - this should use a virtual platform approach that every OCT can access in relation to the key sectors and provide a step by step approach to how OCTs can access BES investment and where it exists. This will be provided by the OCT Blue Economy Observatory (discussed later)

The second priority is the development of strategic Blue Innovation Centres to assist Start Up Companies. This is noted by the experts as critical for OCTs as Blue Innovation, Incubation, Entrepreneurial centres will significantly increase the Human Capital of BES and ensure the future continuity of young people developing the necessary skills at the national level. In addition, these centres will help countries to retain skills and reduce the national 'brain drain' problem where students achieve knowledge but leave because they cannot find an avenue of career progression where they are located, creating a knowledge void at the national level.

Business innovation incubators aim to develop high-growth potential businesses and help them to thrive, supporting entrepreneurship at a local and national level. Business and start-up incubator programs are designed to offer workspace, mentoring and in some cases early-stage investment or other financial support to early-stage companies, presenting an excellent base ambitious entrepreneur to grow their start-ups and businesses from. The EU states that "Areas of innovation" are places designed and curated to attract entrepreneurial-minded people, skilled talent, knowledge-intensive businesses and investments, by developing

above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius. The Paris Agreement does not include international shipping, but IMO, as the regulatory body for the industry, is committed to reducing greenhouse gas emissions from international shipping.

²⁰ <https://www.imo.org/en/MediaCentre/PressBriefings/Pages/06GHGinitialstrategy.aspx> (Accessed 25.03.2021)

and combining a set of infrastructural, institutional, scientific, technological, educational and social assets, together with value added services, thus enhancing sustainable economic development and prosperity with and for the community.²¹

The I&I centres help create critical mass in any given area, the mix of start-ups utilising a centre should try and focus on a specific theme, Blue Energy for example, but also encourage use by business support start-ups such as marketing and promotion companies, or IT services. Shared communal space provides lecture and training space and specific business meeting rooms, all designed to promote a professional image. All centres to provide access to tailored training in all aspects of BES business development.

From a global and European perspective, start-ups remain in a centre for three years where upon they should be in an advanced economic position to move to a permanent space. There are two models for implementation of centres, one where the centres are managed by the private sector who rent out the office spaces, and the second where the government provide targeted subsidies often engaging with Universities for their implementation. The second is the most functional because it deemed as a 'forward thinking' national investment programme, because the eventual long-term gain will increase employment opportunities and increasing GDP. The input and partnership with relevant Universities (or other relevant higher education) will be a key to I&I centres, bright students leaving Universities recommended to apply to I&I centres, whereon their talent developed through targeted support. The mapping carried out by the four experts in relation to the location of OCTs maritime, blue food security, blue energy and blue tourism commercial enterprises provide the geo location of the key national blue economy sector clusters and thus these clusters show the optimal geo location for I&I centres.

Due to the important relationship between I&I, the development marine/maritime technology parks and BES clusters the overall recommendations will be at the end of the next section.

5.2.3 Marine/Maritime Technology Parks

The concept of Technology Industrial Parks has gained substantial attention from domestic and foreign investors and governments at all levels; in particular, these parks are deemed an essential part of the national blue economy development plan and therefore important to OCTs.

The EU stated in 2016 that a science park is an organisation managed by specialised professionals, whose main aim is to increase the wealth of its community by promoting the culture of innovation and the competitiveness of its associated businesses and knowledge-based institutions. To enable these goals to be met, a science park stimulates and manages the flow of knowledge and technology amongst universities, R&D institutions, companies and markets; it facilitates the creation and growth of innovation-based companies through incubation and spin-off processes; and provides other value-added services together with high quality space and facilities²².

It is based on offering Business and Research space within a specific theme and provides the second stage to the Innovation and Incubation centres. The trend in Europe suggests that after three years have passed, successful start-ups will move to another more permanent location, which would preferably house a multitude of companies that specialise within a specific field. For example, a Renewables Technology Park, this would be populated by those working in Ocean Energy, Marine renewable energies and/or bio-technologies, but will also house companies that work with any other renewable type, green fuels and land based innovations.

²¹ <https://ec.europa.eu/jrc/sites/jrcsh/files/20160928> (Accessed 16.03.2021)

²² https://ec.europa.eu/jrc/sites/jrcsh/files/20160928-macroregional-innovation-sanz_en.pdf (Accessed 16.03.2021)

There is significant crossover between land and ocean-based renewables. By harnessing critical mass, the potential of land-based renewable energy concepts having application at sea or in reverse is a strong argument for consideration. Enabling critical mass will increase the likelihood of companies identifying innovative partnerships, exploiting combined research and increase collaborated applications for investment programmes.

For example, a Fisheries Technology Park would house a multitude of companies interested in the development of fishery technologies to support food sustainability to achieve a steady supply of fish and fishery products. There are four specific types of fishery technologies: harvesting, aquaculture, processing, and new products. These also include bio-tech ocean resources - amongst others sea moss, seaweed, and algae.

However, the priorities for research and development (R&D) in fishery technologies vary by OCT due to differences in fish species, availability, environmental concerns, and consumer preferences for fishery products. The importance of enabling a fishery technology park is better justified by recognising the economic returns from sustainable fishing, developing fish processing plants and creating sustainable aquaculture opportunities.

The sustainable exploitation of OCT rich ocean resources, carried out with the necessary scientific data, research and development from a national perspective will increase employment and help that BES fisheries sub-sector to accelerate into a mature state. Placing these specialised parks near or within the identified BES cluster will facilitate critical mass, knowledge exchange and implementation of ideas and potentially new patents and provide the necessary foundation from where investments opportunities will gravitate too.

OCT governments will also be able to utilise the skills amassed to increase their understanding rather than bring in knowledge from outside. The OCT representatives' recommendations are ordered within a thematic framework, as follows.

- Marine research infrastructures, both observational and experimental;
- Fisheries and Aquaculture Research and Development Park;
- Ocean Energy and Bio Tech Parks.

Recommendation: Study on the Optimisation of Blue Economy Innovation and Incubation Centres and Technology Parks, Guide for OCTs to maximise investment programs to facilitate sustainable growth (including the development of BES scientific resource knowledge and sharing centres).

5.2.4 Port Expansion/upgrade or transformation to support blue growth activities.

In a similar fashion to the marine/maritime technology parks, OCT representatives identified other areas of infrastructure development. These are:

- Vessel Prototypes and Research Vessels;
- Maritime Spatial Planning, Data and Information Sharing Center;
- Safety, Security and Governance.

The reason that these elements are considered separately from Technology Parks is because they have distinct relationships with Ports and require specific data pertaining to ocean enforcement or a need for immediate ocean access via, for example slipways and to ports and harbours providing those infrastructure types.

For Example, the Oceanic Platform of the Canary Islands (PLOCAN) is a singular scientific and technological infrastructure (ICTS) aimed to accelerate the development of knowledge and technologies for the responsible and sustainable use of the ocean, in line with the United Nations sustainable development goals and the Blue Growth Strategy established by the European Union.

It has been partially co-funded by the European Regional Development Fund (ERDF) under the ERDF Operational Programme for the Canary Islands 2007-2013 within Axis 1 "Development of the Knowledge Economy", priority theme 02, with a co-financing rate of 85%. PLOCAN is financed and managed by a consortium, comprising of 50% contributions from the Canary Islands Government along with the Spanish National Government (*Ministry of Science, Innovation and Universities*). This platform enables the testing and demonstration of numerous high-tech devices from global developers bringing the best of innovation to the island BES community. It gains access by a Harbour, which allows the land-sea transport interface.

Technological examples include Underwater Autonomous Vehicles, Buoy technical R&D development for the measurement of many ocean related data and emerging blue energy devices to name a few of the operations. It has enabled critical mass for many BES industries and a lodestone to attract inward investment. Its success has attracted many projects funded by the EU which are ongoing.

The development and operation of research vessels will also require berthing capabilities and therefore Ports provide a significant operational infrastructure to the realisation of that ambition. Ports and harbours are also the heart of a maritime (BES) cluster.

Recommendation: Feasibility study, explaining the 'capacity of OCT ports to facilitate focused BES development', the report will examine the key ports of the OCTs and initiate discussion with the Harbour Masters to ascertain the potentials for placing specific BES infrastructure near or with access to the ocean within the confines or close to the port.

5.2.5 Marine and Coastal Conservation/Protection Areas and R&D infrastructure

Although not perceived for many years as contributing financially to economic development, the 'great reset' in thinking brought about by climate change has completely changed that perception. Marine and ecological protection is globally recognised as immensely valuable and is currently attracting significant investment for elements such as carbon sequestration.

This is because natural carbon sinks are a key in mitigating climate change impacts and are attracting significant investment through a 'carbon credit' system. This is applicable to all OCTs as ocean and coastal carbon sinks differ in specific climates. A good example of a successful carbon sequestration project in a tropical climate is the mangrove project.

Mangroves, as well as providing coastal protection and nurseries for marine life, demonstrate a sustainable and economically viable example, these evidenced as one of the best mediums for the natural sequestration

of carbon, even above that of land-based trees and forests. Such an example is a project²³ that verified the business case for carbon credit provided by Gazi-Kwale County, Kenya. The project revealed that mangroves store 50 times more carbon in their soils by surface area compared to tropical forests, and ten times more than temperate forests. The research and development centre of the company has proven through mangrove restoration, that the project is not only attracting inward investment but also creating a sustainable previously depleted habitat that supports biodiversity and indirectly provides a noteworthy attraction for tourists.

The natural ocean conditions are a key attraction for the coastal tourist, but over visitation can have serious negative effects on the very attraction they are visiting²⁴. The management of fragile coastal ecosystems for all users must remain a priority for all OCT states as they provide the foundation for a significant amount of the BES industries.

Even more importantly, these coastal ecosystems provide the basis for long-term food security. The coastal shallows, reef areas and mangrove stands are where so much of marine life is born and raised. In the words of one Pacific islander to the Food Security Expert, *"a healthy reef means a healthy people"*. This is the food source that is secure from economic downturns, loss of tourist income, climate/economic shocks and thus are strategically vital.

It is recognised by the global community²⁵ that one-third of all fishing grounds is now depleted to the extent that they cannot replenish themselves without intervention. The linkages between enforcement operations and illegal ocean activities will in the future be paramount in permitting ecological recovery. Research facilities/laboratories near or close to marine protected areas will provide the necessary oversight, the infrastructure to carry out ecological research, and increase the development of marine spatial planning (*Different to the EU requirement of Maritime Spatial Planning*). Both of these R&D activities attract inward investment and support from the global community.

Such environmental infrastructures will provide an important economical resource for the OCT BES and the different sub-sectors. This will result in a more joined up approach to inform and support government decision making systems in relation to coastal management and a technical resource for OCT private industries, providing a monitoring mechanism to ensure that commercial activities are sustainable and cause no harm to the ocean ecosystems.

Increasing the capability and capacity of such centres (for example, by sharing resources) will in parallel increase employment opportunities and GDP. Examples include:

- Woods Hole Marine Biological Laboratory, WHOI is the largest independent oceanic research institution in the US. Known around the world for ground-breaking oceanic research including most famously, the discovery of the wreck of the RMS Titanic, WHOI is the most cited oceanic research organization in the world.
- MBARI is a sister organization to the world-famous Monterey Bay Aquarium but the two organizations have completely separate management teams and funding. MBARI is famous for advancements in microbial oceanography and the monitoring of harmful algal blooms.
- Formerly the Undersea Research Center for NATO, CMRE is a research facility that conducts undersea and maritime research for the NATO Alliance including port and ship protection, sonar risk mitigation,

²³ <http://www.mangrovealliance.org/mikoko-pamoja/> (Accessed 12.03.2021)

²⁴ THE ENVIRONMENTAL IMPACTS OF TOURISM : https://uk.sagepub.com/sites/default/files/upm-assets/109852_book_item_109852.pdf

²⁵ FAO's report "Review of the State of World Marine Fisheries Resources", tables D1-D17, <ftp://ftp.fao.org/docrep/fao/007/y5852e/Y5852E23.pdf>

and maritime situational awareness. The facility is staffed by scientists from NATO member nations that rotate through on a 3-5-year cycle.

- Founded in 1970, NOAA is the premier organization in the US for the monitoring of Earth systems and communication of information about them. In addition to monitoring, they also issue severe weather warnings, and study marine resources to offer suggestions for their use and protection.

The unique classification of OCTs as small island states raises their profile for all International Marine Research facilities as they provide for intense micro ecosystems that change rapidly, which in turn produces the data informing ocean states attached to continents that have slower responses. The second important element is that if islands cojoin their research centres, it can provide significant data in relation to changes in ocean and climatic conditions, and biodiversity impact from island to island, thus significantly improving data sets. The opportunity for OCTs to provide a huge data catalyst for the global ocean scientific community should not be underestimated and OCTs could with investment and joint ventures become forerunners in the overall scientific communities.

Recommendation: OCTA Report: OCT Guidance for the Optimal Requirements of OCTs National Marine and Environmental R&D Centres, to include outlines of the high priority fields, potential collaborations and investment opportunities, global BES contribution, and the expected impacts for national GDP and local employment.

5.3 Strategic Priority Three

Reinforcement of the natural ocean environment, social and economic interface

5.3.1 Types of applicable research and data, required to inform and accelerate OCT Blue Economy sustainable development

Briefly, the 'blue economy' encapsulates all ocean-related activities that drive economic growth and by 2030, are estimated to be worth \$3.2 trillion²⁶. However, increasing pressures on oceans to meet the growing needs of commercial ocean exploitation, coupled with impacts of climate change are causing significant negative impacts within the global marine environment. In order to mitigate these issues, it is paramount that OCTs develop a 'blue data' management system that will provide access to comprehensive and up-to date information, that can provide information relating to the potential impacts of the different BES sub-sectors.

OCT representatives' opinion in relation to the importance of types of data and research that they perceived essential to accelerate the BES are set out below and ordered by priority.

5.3.2 Data Supporting Strong Economic Growth

The most important priority identified was obtaining research and data concerning the realisation of strong blue economic growth. This theme is the central drive of the OCT BES transition.

Recommendation: Report, Guidance for OCTs on the sub-sectors for which Attaining Strong Blue Economic Growth is most feasible, in the short-mid and long term. This will also provide individual OCTs advise as to the identified BES potentials in their country.

Maritime

Maritime is the most important aspect of the Blue Economy, all anthropogenic operations that occur in the Ocean/Sea or Coastal Zone are maritime activities. For example, Ports and Shipping is a truly international industry, and it can only operate effectively if the necessary regulations and standards are agreed, adopted and implemented on an international basis.

Maritime, is the term for the catalyst of all human related activities that occur in the ocean/coastal environment. Blue Energy, Coastal Tourism, Fisheries, Shipbuilding, Ports are all maritime activities.

Ports and Shipping

International shipping transports more than 80 percent of global trade to people and communities all over the world. Shipping is the most efficient and cost-effective method of international transportation for most goods; it provides a dependable, low-cost means of transporting goods globally, facilitating commerce and helping to create prosperity among nations and peoples.

Shipping is an essential component of any programme for future sustainable economic growth and the IMO, the Organization's Member States, civil society and the shipping industry are working together to ensure a continued and strengthened contribution towards a green economy and growth in a sustainable manner. Elements of the EU 2030 Agenda can only be realized with a sustainable transport sector supporting world

²⁶ [European Commission - The Blue economy Report 2020 \(2020\)](#)

trade and facilitating global economy with the implementation of goal SDG 14 central to the developmental process. Energy efficiency, new technology and innovation, maritime education and training, maritime security, maritime traffic management and the development of the maritime infrastructure: the development and implementation, through the IMO, of global standards covering these and other issues will underpin IMO's commitment to provide the institutional framework necessary for a green and sustainable global maritime transportation system²⁷.

Other than the evolution of economic growth and trade in OCTs, OCT ports are also of great importance for community well-being. The role of maritime ports is driving growth and trade, whilst providing a catalyst for direct and indirect contributions to the economy and an attractor for investment. Evidence from the expert examination showed that the ports in OCTs are critical for their development with significant opportunities for the evolvement of the OCTs Maritime (BES) Cluster to create a critical mass of commercial and academic enterprises to promote the BES sector. Seaborne trade accounted for 80 percent of the total volume and 70 percent by value of global trade in 2018. The expansion of containerization further reinforced the port hierarchies and concentration patterns of some OCT ports that have already established this capability. Increasingly, port competitiveness and positioning in global supply chains will further define OCTs ability for export and import.

5.3.3 Marine/Maritime Spatial Planning

Many governments and private sector stakeholder representatives' mix up the terms of 'marine and maritime'. To avoid confusion marine and maritime are explained in context within the following paragraphs and considered within a singular analysis.

Marine Spatial Planning is the mapping, research, and analyses of the natural marine environment. Amongst other specialised areas, it examines seabed management, invasive species, flora and fauna, the condition of fishing stocks, coral reefs, specific species, (crab, clown fish etc) and records their contribution to the overall ecosystem. Through the systematic scientific data, indicators can be developed and measured through a monitoring and assessment framework to ensure that indicators are not exceeded, thus resulting in longevity and sustainability. Through this 'marine based' framework, mapping and associated planning activities can be matched with identified coastal sensitive zones, the level of sensitivity and confirm species or sites that require protection or special management or that are under immediate threats.

Maritime Spatial Planning examines the human activities that draw resources from the ocean, for example ports harbours, shipping lanes, fishing zones, sites for blue energy development and coastal tourism zones. Understanding the difference is important, because the maritime related sub-sectors constitute the predominate generators for OCT economic return. For example, Maritime commerce and trade activities alone are estimated to be worth £825 billion²⁸ – and this is predicted to grow due to the developments in smart technology, such as autonomous vessels and e-navigation. Considering the Cruise traffic for OCTs it is an important BES sub-sector. Additionally, maritime activities such as the extraction and use of our ocean resources contributes £871 billion to the blue economy²⁹.

When both marine and maritime spatial planning maps are interlaced, it is possible to conduct an 'Ocean Planning' approach, whereby zones put aside for fisheries can be monitored in relation to the marine spatial plan, or when coastal tourism is exceeding the carrying capacity of a sensitive ecological site, and the plan carry the guidelines for management.

²⁷ <https://www.imo.org/en/About/Pages/Default.aspx>

²⁸ UNCTAD Review of Maritime Trade 2019: https://unctad.org/system/files/official-document/rmt2019ch1_en.pdf

²⁹ <https://www.admiralty.co.uk/how-blue-data-is-unlocking-economic-growth> (Accessed 12.03.21)

Maritime Spatial Planning (MSP) is defined in the EU Directive on MSP as 'a process by which the relevant Member State's authorities analyse and organise human activities in marine areas to achieve ecological, economic and social objectives.

In practice, MSP has been considered world-wide in a broader way as encompassing both formal and informal public undertakings and initiatives on how to use the sea space in line with societally agreed goals, values and targets. MSP can result in plans, permits and other administrative decisions that outline the spatial and temporal distribution of relevant existing/future activities and uses in the marine waters. The outcome of MSP can also take the form of different non-binding visions, strategies, planning concepts, guidelines and governance principles related to the use of sea space³⁰

OCT representative recommendations leaned towards this goal "*the blue economy must include clear marine protection and sustainability objectives; this is crucial for the "blue" goal. OCTs must ensure that in our efforts to grow the economy we are not robbing the future of its opportunity to have health ocean ecosystems that provide crucial services.*"

In this context, marine spatial plans are better prepared by ecological and/or ocean environmental scientists, whilst maritime spatial plans are better prepared by the scientists that have knowledge about the overall commercial and economic demands of any given maritime space.

OCT national economic provisions are a priority especially near recognised clusters, yet they must also meet the environmental requirements in order to reach sustainability. It would be counter-productive banning all maritime activities because they create for a potential hazard for the natural environment. In reality, a balance needs to be struck to ensure that the human interface with the marine environment is managed in a manner that continues to reduce environmental impacts whilst meeting the needs of the future generations. In some cases, this is not always possible and sometimes environmental and social needs must be weighed up. Ports are such an example.

For example, the EU (2000) Water Framework Directive [*"Directive 2000/60/EC"*] initially was based on improving water quality to what was described as a 'pristine condition'. Naturally, the question which arose was 'what is pristine?' Ports/ harbours and the maritime aspects at that juncture were completely overlooked. It was later established that ports/harbours would have difficulty in implementing the Directive due to port zone economic activities, the reason for the oversight was because that maritime stakeholders were at no time a party to the process. The Directive subsequently reconsidered to enable it to embrace vital socio-economic critical infrastructure. Ports were recognised as containing 'heavily modified water bodies' and exempted from fully implementing parts of the Directive, with the caveat of putting in systems that would improve ports water quality on a yearly basis.

This is the reason why maritime spatial plans must be drawn up by maritime experts and marine spatial plans by marine experts. Only then can an Ocean Plan can be agreed by all experts rather than develop such a plan in a piecemeal fashion which would incur significant cost.

³⁰ <https://www.msp-platform.eu/msp-eu/introduction-msp>. (Accessed 05.03.2012)

5.3.4 Better Maritime Governance

OCT representatives recognised the need for better maritime governance, the government sector applying more emphasis than the private sector. This is particularly relevant in the context of the rise in piracy, illegal dumping of toxic waste at sea and illegal unregulated and unreported fishing. However, the expert investigations noted that the 'maritime' oversight for all OCTs under examination remains with the National State France, The Netherlands, and Denmark. More importantly, it means that the OCTs have evolved in a context in which maritime policy and governance is of no specific interest to OCT governments.

The result of this has caused there to be a lack of overall knowledge of maritime governance along with the implications of poor maritime governance. A conclusion is that this may be an oversight by the Overseeing National State and will require immediate remediation due to the potential impacts of maritime governance on the BES.

Of interest during the development of this Study, on Feb 6th 2021 four new high-speed patrol vessels manufactured by US-based Metal Shark Boats have been commissioned into service with the Dutch Caribbean Coast Guard (DCCG) on the island of Aruba. The Dutch Ministry of Defence, to bolster its capabilities in the Caribbean, acquired the vessels³¹. This underlines the growing importance to ensuring effective maritime enforcement for OCTs. Developing a maritime enforcement strategy for OCTs would provide the information required to make effective use of resources and identify where gaps and challenges exist.

Recommendation: OCTA Study Outlining the Importance of Effective Maritime Governance and the Development of the BES for OCTs.

Recommendation: Increase cooperation between the National State Overseeing Authority and OCT Governments.

5.3.5 Maritime Enforcement

Alongside maritime spatial planning is the subject of enforcement. As discussed above, the respective EU Member States have the mandate for maritime issues for the majority of OCTs. However, the maritime expert notes that for all Dutch OCTs the maritime enforcement provision is predominantly focused in the Economic Exclusive Zones (200 nautical miles from land).

The Dutch Caribbean Coast Guard serves Aruba, Curacao and Bonaire by the Dutch Coast Guard. When needed they also cover Sint Maarten, Sint Eustatius and Saba. From 2012, the KWCARIB (DCCG in english) is operated by Cobham Caribbean NV³²

The West Indies Guard Ship (WIGS) is a single vessel (Typically a Frigate) with the responsibility of patrolling the EEZ of Caribbean waters, to fight illegal activities such as piracy and drug smuggling³³. However, the expanse of water is vast and from the criminal perspective it is easy to track the single frigate and use other non patrolled routes. For example, the WIGS main responsibility is for Aruba, Curacao, and Bonaire, which leaves considerable maritime sea space open for criminal activities to occur beyond the reach of the defence/enforcement body.

³¹ <https://www.bairdmaritime.com/work-boat-world/maritime-security-world/non-naval/metal-shark-delivers-coast-guard-patrol-boats-to-aruba/> (Accessed 06.03.2021)

³² <https://www.helis.com/database/org/Dutch-Caribbean-Coast-Guard/> (Accessed 07.03.2021)

³³ <https://www.naval-history.net/xGW-RNOrganisation1947-2013.htm>

The second issue is that of defence and enforcement, a navy vessel operates within the defence regime and technically does not have the power of arrest, which is the responsibility of a civil enforcement body (police for example). This can complicate the prosecution procedure when criminals are brought before a court, these issues require attention in the long term if BES subsectors and the wealth they generate are to be protected.

Certainly, this report would serve as a golden opportunity to encourage OCTs to focus on their maritime governance structure in general, for example, what are best practices for governance structures in small islands where resources are limited. Understanding, limitations, gaps and challenges within Governance structures will be key to ensure that the BES will succeed.

Providing context, given the increasing escalation of Illegal, Unauthorised and Unreported fishing (IUU) in Caribbean waters, it will be critical for OCTs to increase maritime enforcement capacity, not only to send out a strong signal for those who would attempt to steal national resources. This increased enforcement resource could be self-sufficient, as fines imposed on criminals would provide an income applying the 'polluter pays' approach. An enforcement protocol will work across all maritime activities in territorial waters, coastal tourism, for example, where tourism companies allow visitors to destroy coral reefs or pick endangered fauna. To achieve sustainable development for the BES it is critical that a framework exists to help enforce government decisions. The lesson learnt underpins the notion of a better balance struck between the needs of the marine environment and socio-economic needs, for example, Ports and Shipping and the Coastal Tourism Sub-Sectors.

Recommendation: OCT Outline of needs to establish research capacity for environmental and marine spatial planning;

Recommendation: OCT Outline of needs to establish research capacity for maritime spatial planning;

Recommendation: OCTA Study: Requirement of OCT BES Enforcement Protocols to reinforce the sustainable development of BES operations, and discourage unlawful practices.

5.3.6 Climate Change Adaption, Mediation, Environmental Research and Carbon Capture

All OCT representatives agreed with the necessity of procuring environmental and climate change research. The impacts of the changing climate are of specific significance to the OCTs. The work of OCTA in the field of Environment and Climate Change includes participating (through the OCTs) in the Partnership Working Party on Environment (PWP3). This platform provides for broad-based dialogue between the OCTs, the European Commission and related Member States on specific issues related to environment and climate change.

The PWP3 on Environment and climate change is an important platform to exchange views of mutual interest and a way to share information between the Commission, Member States and the OCTs. In 2012 one PWP meeting was conducted on the 14th May in Brussels which included discussions and exchanges of information on "Green Growth", biodiversity incl. BEST-SCHEME and NET-BIOME, Rio+20, the OCTA seminar in the European Parliament "From the Arctic to the Tropics" and finally the Aruba Green Energy Conference.

A recommendation therefore is to facilitate a dialogue between the PWP3 and scientists researching in the fields of carbon capture and the development of marine and maritime spatial plans. This will enable the sharing of best practice guidelines as well as providing an 'alert system' for potential threats to the marine environment resulting from the changing climate. This observation underpinned by OCT representative recommendations

“update current policies and introduce a platform between private and public entities with the guidance of scientific organizations such as universities”.

A further suggestion, would be for the PWP3 platform to join forces with the Indian Ocean Commission (IOC) on the decade for ocean science to explore solutions for SIDS; and consider the outputs of the Decade Committee on Safe Oceans from the IOCARIBE who are working in this area. This could reduce duplication and streamline research results.

Monitoring and assessments systems by marine scientists can already provide some indicators to ensure sustainable development of the BES. Providing a seamless information system to inform the PWP3 platform and assist individual OCTs government decision-making processes.

Recommendations: Increase the remit of the PWP3 platform (i) to identify, define and adopt strategic indicators and (ii) encourage the sharing of scientific carbon capture and ocean environment data by professional bodies in order to provide an alert system to help guide OCT decision making processes.

5.3.7 Food Security

Whilst there may be pockets of relative poverty and even hunger related to individual socio-economic factors, in general, food insecurity and undernutrition is not a concern for OCT health services, even after the recent and ongoing Covid19 pandemic. Household incomes and national economies are all heavily supported by the Member State to which the OCTs are associated, shops are evidenced to be regularly filled with goods coming in by ship and, in general, sufficient household income is available to pay for them. The major nutritional problem on almost all islands is over-consumption of cheap, processed food, high in sugar and saturated fats: thus, obesity, diabetes, heart disease, and others.

The insecurities that face this population are exogenous threats: long-term climate change effects, and sudden shocks, such as pandemics (*potentially exacerbated or even caused by climate change*) and extreme weather (*which is likely to increase in frequency as a symptomatic consequence of climate change*). The main concern is associated with disaster risk avoidance rather than long-term food deficits.

Risk avoidance relates to ensuring sources of food, to cover disruptions in the normal system over periods of more than 3-4 weeks, which is the approximate maximum period for which retailers hold food stocks. In such cases, household food production is an important safety net, as the Caribbean islands are noted by the United Nations Food and Agricultural organisation³⁴ (UNFAO) to have been exposed to a high level of risk due to the impacts of the Covid-19 pandemic.

³⁴ http://www.fao.org/fileadmin/user_upload/rlc/docs/covid19/Bulletin1_FAO-COVID19_EN.pdf (Accessed 08.03.2021)

5.3.8 Sustainable Fisheries and Aquaculture Development.

FAO's³⁵ report "Review of the State of World Marine Fisheries Resources", has reported that in the Pacific Ocean the Southern Bluefin Tuna is 'depleted' along with the Western Atlantic where the Atlantic Bluefin Tuna is also 'depleted'. The same applies to the Indian Ocean where the Southern Bluefin Tuna is also 'depleted'. This means that those fisheries are in the worst state in terms of fish capability to self-stock and are thus not sustainable. Evidence gathered during the research for this report shows that the actual fishing vessels/fleets operating within the zones outlined in the FAO report are not from OCTs but are foreign vessels. This is supported by an OCT representative comment in the survey "*sustainable fisheries industries - the small business owners are targeted and not considered in development plans because big business imports the fish and pollutes the environment with the packaging products*".

This alludes to two issues: (i) the constriction on the development of national fishing fleets and (ii) indicates environmental degradation. Whilst it is worth highlighting the significant share of lagoon fish and offshore tuna in local consumption, two countervailing aspects must be recognised: (1) a lack of information on the quality and diversity of local fishing resources that are in competition with imports of food from foreign fisheries that are non-sustainable, (2) the harmful impact of deep-sea fishing (tuna) in the EEZs of neighbouring countries under prejudicial fishing agreements with Asian countries, in particular. These result in a steady and generalised drop in yields despite reasoned and reasonable fishing efforts in the OCT. For example, New Caledonia has 18 vessels registered to fish an area of 1,400,000 km² whilst the Solomon Islands to the North has several hundred vessels fishing the same area of EEZ). An OCT representative noted the requirement of "*better infrastructure and legal framework to support further utilization of the fish and fish products by the processing companies*".

The United Nations Convention on the Law of the Sea (UNCLOS) defines the governing international law. Coastal nations have jurisdiction over the natural resources of an Exclusive Economic Zone (EEZ) that extends up to 200 miles off their shores.

Within the EEZs, each nation has jurisdiction to govern the use of its marine resources. They may issue licenses, set catch limits, or ban a given activity all together. The exponential growth of Illegal, Unregulated and Unreported (IUU) fishing activities are associated and operated through large transnational criminal organisations (TOC) they are responsible for the theft of vast amounts of fish whilst denying member states the economic advantage of their blue resources. (IUU) fishing costs up to \$23 billion every year to countries and affects one in every five fish caught. IUU fishing is the greatest threat to marine ecosystems due to its ability to undermine national and regional effort to manage fisheries sustainably. It takes advantage of corrupt administrations and exploits weak management regimes in particular those countries that lack the capacity and resources for effective monitoring, control and surveillance.

Lawful fishing activities are threatened by IUU activities and can suffer from the eventual collapse of their national fisheries. Products derived from IUU fishing enter into overseas trade markets and leads to the choking of local food supply. IUU threatens livelihoods, exacerbates poverty, and augments food insecurity. Representative recommendations also alluded to this fact "*OBNA*³⁶ *the development bank requires enforcement of maritime and environmental policies to accomplish their goals within the development of agriculture and fisheries industries*".

³⁵ General situation of world fish stocks United Nations Food and Agriculture Organization (FAO)

³⁶ The Ontwikkelingsbank (development bank) van de Nederlandse Antillen N.V. (OBNA Bank) established in 1981 with the objective of promoting the execution of projects that, in the opinion of the bank, are important for the economic development of Curaçao, Sint Maarten, and the BES islands. OBNA Bank is a joint venture of both the private and public sectors <https://obna-bank.com/about-us/> (Accessed 23.03.2021)

The Expert examining blue food security underlined the importance of the nutritional value of fish to a community, more so when considering the potential impact of climate change. For example, in Gran Canarias a strike by port operatives led to all supermarket shelves being empty within a week as ships with food imports could not access the port. Setting management policies provides the official framework for managing of fisheries, but enforcing them 200 miles from shore is more complicated, especially for countries with large EEZs or small countries with limited resources to patrol their waters. However, with the advent of satellite technology vessels operating within an OCTs EEZ can be remotely monitored and where a suspicion of IUU fishing activity exists the vessel can be tracked to the port of disembarkation; whereon he will be boarded and if proven to possess illegal catch, fined with the fine being returned to the OCT 'fish' origin.

Understanding and setting up strong fisheries policies and delineating Marine Protected Areas (MPA) or no catch areas is vital for OCTs. The potential of OCTs to develop their own fishing fleets to exploit their blue resources will assist the sustainability of fisheries because a national fleet are more likely to abide by International rules and norms. Additionally, this will herald in a raft of BES opportunities in particular fish processing. Increasing the lifespan of fish for the international marketplace, driving blue economic development and attracting investment opportunities.

Recommendation: Development of OCT sustainable fisheries policies;

Recommendation: OCTA Study, Optimum OCT guide for the enforcement of fisheries for island states;

Recommendation: OCTA study: Opportunities for BES fish processing plants, investment and global marketplace.

5.3.9 Aquaculture

Open ocean aquaculture is the rearing of marine organisms in exposed areas beyond significant coastal influence. Open ocean aquaculture employs less control over organisms and the surrounding environment than do inshore and land-based aquaculture. Internationally, research and commercial open ocean aquaculture facilities are in operation or under development in Australia, Chile, China, France, Ireland, Scotland, Italy, Japan, Mexico, and Norway. Currently, four commercial open ocean facilities are operating in U.S. state/territorial waters.

As an indication of the importance of the aquaculture sector, the Marine Scotland commissioned report – *Estimation of the Wider Economic Impacts of the Aquaculture Sector in Scotland*³⁷ – estimates the economic impact of aquaculture is widely felt beyond the industry. It is an important provider of employment in rural Scotland and wages are often higher than other industries, with salmon production staffing costs averaging £43,000. The aquaculture sector contributed approximately £885 million to the wider Scottish economy and supported 11,700 jobs in 2018, according to new research.

The Food Security Expert noted that there is relatively little aquaculture activity in OCTs except in parts of French Polynesia and New Caledonia and therefore OCTs are completely missing out on a new and thriving sub-sector of the BES. This is also supported by a representative recommendation that *“investment opportunities in fisheries as well aquaculture as a means to promote produce diversification”*. The expert noted that, until recently, the Caribbean countries have been able to rely on tourism, which is the reason they have not needed to consider their EEZs

Recommendation: Report, OCTA an economic study to provide guidance to the initiation and development of aquaculture sub-sectors for OCTs, aimed at exploiting sustainable resources to enhance employment opportunities and increasing national GDP from blue resources.

5.3.10 Renewable Energies

Renewable Energies are an ever-evolving industry. The application of new energy capture devices are at the centre of the mitigation and adaption to climate change. The global total primary energy supply and demand doubled between 1971 and 2012, is still growing at the same speed or faster and is still dominated by fossil fuels. The unsustainable impact of using fossil fuels is attributed to the measurable increase in quantity of greenhouse gases (GHGs) emissions. Furthermore, the current use of combustion fuels such as coal, oil and natural gas will result in an expected depletion of these fuels from 2050 onwards.

Nevertheless, before supporting any new pilot of Blue energy technologies, and for the approach to have a good chance of involving a real transition and not to be merely a case-study:

Priority recommendation: “No subsidized fossil fuel” and transfer of the existing subsidies to new Renewable energies (including Marine energies).

³⁷ <https://www.gov.scot/publications/estimation-wider-economic-impacts-aquaculture-sector-scotland/> (Accessed 06.03.2021)

At the time being some OCTs are subsidized for their tariff of electricity with the argument that, considering the local economy framework, a tariff of the kWh that would be consistent with the real LCOE³⁸ would not be affordable to public and industry, or would induce a lack of competitiveness compared to other nearby countries (mainly US / Canada / Australia / China / etc.), or by political choice. Being pictured as a solidarity from "continent" to "islands" or from "main island" to "small islands", this support is addictive and has induced a donor dependency.

Furthermore, this encourages low attentiveness from the OCT public and private sectors to the potential for energy savings, energy efficiency or for risk taking with new energies like marine energies, which have been considered to be uncompetitive and unreliable, complicated or expensive compared to the easy subsidized kWh price, which has become the reference.

Priority recommendation: "No new exploration/exploitation of fossil fuel (petroleum/gas/..)" mining in the EEZ of the OCTs and transfer of the local jobs & infrastructures to new Renewable energies (including Marine energies jobs).

Some OCTs have significant interests in the oil & gas industries, enabling offshore mining in their EEZ and dedicating an important part of their economy as a derivative of the oil & gas industry. This 'black sector' is documented globally as the main sector responsible for Climate Change and because of that recognition greater attention is being appropriated to transforming that industry during the next decades. This will create a 'risk' in the medium to long term for OCTs that have dependency on that sector.

However, the existing infrastructures and skills that OCTs have for the oil & gas industries and those for marine energies (including storage and hydrogen) are quite similar and therefore, using a step by step approach, the switch from one sector to the BES could be implemented with relative ease. This would require alignment of marine energy targets, plans and a well-defined time schedule.

To support the blue energy sub-sector, the involved stakeholders (and their related jobs) it will be necessary for OCTs public sector to provide clear targets, a regulatory framework and published energy roadmap such as:

- 100% of the whole energy consumption covered locally by a mix of onshore, marine renewable energies, marine storage, marine hydrogen, desalination, etc.
- 100% autonomous within groups of 3 to 4 OCTs, in the field of the exploitation/operation and maintenance of Marine Energies (skills available, infrastructure available, transportation means available, cooperation agreements signed between OCTs, long term contracts with technologies providers when not from the OCTs, policies aligned to allow it, ...) and this within a time schedule between 2030 and 2050 following the OCT maturity.

Each OCT is to decide its own milestone targets, related budget, and particular schedule for each one of the 4 points and the commitment to develop and adopt cooperation agreements between related OCTs (or even including nearby other islands) on long term basis concerning the 4 points, below.

³⁸ The levelized cost of energy (**LCOE**), or levelized cost of electricity, is a measure of the average net present cost of electricity generation for a generating plant over its lifetime. The **LCOE** is calculated as the ratio between all the discounted costs over the lifetime of an electricity generating plant divided by a discounted sum of the actual energy amounts delivered.

In particular, the related programs and steps of the study recommended to reach these targets are:

1. To perform a territorial marine energies resources GIS-atlas on a same standard base (wave, Tidal, OTEC, SWAC, Offshore wind)
This study would help the projects/industrial stakeholders to get easier and safer business models for deployment in the OCTs' marine territories and would push them to engage more bankable projects on their marine territories, inducing jobs creation and investment in their marine infrastructures.
2. To encourage cross frontier innovation/pilots/projects
 - a. in north Caribbean OCTs (wave, tidal or offshore wind and symbiosis with hydrogen/marine storage technologies) with a particular focus on sargassum risks mitigation
 - b. in ABC islands (wave, tidal or offshore wind+ symbiosis with hydrogen/marine storage technologies) with the particular purpose of costs and LCOE reduction by better infrastructure and innovative project structuring.
 - c. in Indian/Pacific Ocean OCTs, especially develop a common axis for R&D / Innovation around particular technologies friendly to the coral environment, and climate mitigation by replacing diesel with new marine technologies (wave, tidal or offshore wind and symbiosis with hydrogen/marine storage technologies)
 - d. all OCTs (and other remote islands thereafter) to share platforms for spare-parts and technical intervention skills (aircraft maintenance/spares availability platform model), in order to facilitate exploitation / operation in many remote areas. This program must involve all international technology providers, including small ones.
3. To support OCTs and help them to find the partners and build the dossiers for EU programme support for the above innovation/pilots/projects
 - a. in north Caribbean OCTs (wave, tidal or offshore wind and symbiosis with hydrogen/marine storage technologies) with a particular focus on sargassum risks mitigation
 - b. in Indian/Pacific Oceans and ABC islands (wave, tidal or offshore wind and symbiosis with hydrogen/marine storage technologies) with the particular purpose of reducing costs and LCOE, by better infrastructure and innovative project structuring.
 - c. OCTs, especially develop a common axis for R&D / Innovation around particular technologies friendly to the coral environment, and climate mitigation by replacing diesel with new marine technologies (wave, tidal or offshore wind and symbiosis with hydrogen/marine storage technologies).
4. To advocate for the projects/pilots vis-à-vis EU programme and vis-à-vis technology manufacturers and local OCTs' marine industrials /marine infrastructures /academic institutions /private finance/public and non-governmental organisations
5. Develop a circular economy and short circuits, by implementing symbiotic systems using electricity during times when production/consumption is unbalanced or by using "locally made" hydrogen.

5.3.11 Coastal Tourism

Coastal Tourism is extremely important for OCT states because it provides a substantial contribution to national GDP and supports thousands of employment posts. In general, tourism is defined in two different ways.

1. Maritime tourism covers tourism that is largely water-based rather than land-based (e.g. boating, yachting, cruising, nautical sports), but includes the operation of landside facilities, manufacturing of equipment, and services necessary for this segment of tourism.
2. Coastal tourism covers beach-based recreation and tourism (e.g. swimming, surfing, sun bathing), and non-beach related land-based tourism in the coastal area (all other tourism and recreation activities that take place in the coastal area for which the proximity of the sea is a condition), as well as the supplies and manufacturing industries associated to these activities³⁹.

Assessing the economic contribution of tourism is complex because it is not specifically defined statistically as an economic sector. In fact, tourism is highly segmented and spread over a multitude of different service sectors such as dive schools, marinas, tour operators and hotels etc. Therefore, it is difficult to quantify exactly the actual contribution if double counting of sectors is to be avoided.

Specifically, blue tourism concerns are that:

- For a wide range of OCTs the sector is under increasing pressure. Average expenditure by night has been decreasing over time, along with the average length of stay. Impacts of the COVID 19 pandemic and the associated economic downturn affecting visitors' financial capacity to travel to the more exotic destinations.
- The mass-tourism business model is currently at a 'locked horns' juncture with regards to long term sustainability because it creates extensive environmental burdens, including congestion, nature conservation, and problems in processing solid waste and water. As a business model, therefore, it will eventually limit the potential for adding value to a nation and communities.
- The dependence of OCTs on cruise tourism is to some extent 'fine' and is predicted to maintain a more successful course in terms of economic performance. However, blue energy and other demands from cruise ships visiting OCT destinations will need to be considered in the short-term. For example, cruise ships are rapidly changing their propulsion fuels from oil to greener solutions. This will require some investment in port infrastructure if OCTs are to accommodate those needs.
- Tourism for OCTs will require a 'blue tourism refreshing' to promote the work carried out aimed at reducing persisting negative impacts in relation to social and environmental consequences for local communities, skills and qualifications of workers, consumption and exploitation of local natural resources.

³⁹ https://ec.europa.eu/maritimeaffairs/sites/maritimeaffairs/files/docs/body/study-maritime-and-coastal-tourism_en.pdf (Accessed 16.03.2021)

Recommendation: Drafting of an OCT Blue Tourism Strategy, which will consider the following: Guidelines on how to prevent impacts on biodiversity and enhance benefits for recreation and tourism supported by marine protected areas.

- Promote an OCTA dialogue between cruise operators, port operators and coastal tourism stakeholders;
- Development of the 'OCT Blue Tourism Standards and Audit Scheme' to promote OCT tourism initiatives;
- Encourage a joined-up approach between OCTs by enabling an integrated tourism association and sub-sector commercial portal;
- Ensure that maritime/marine spatial plans are a central turnkey in tourism related developmental proposals;
- Provide innovative accessible skills for local communities to raise awareness of blue tourism ideals;
- Develop an indicator system for the sustainable management at destination level and develop coastal and maritime tourism dedicated indicators. These linked to the OCT Blue Tourism Standards and Audit Scheme.

5.4 Strategic Priority Four

Safeguarding healthy, resilient, and fruitful oceans, implemented through the creation of sustainable wealth and prosperous communities

Strategic Priority 4 builds on the other three priorities, OCT representatives identified four globally recognised objectives that they considered imperative to help governments and stakeholders accelerate Blue Economy Growth.

5.4.1 Strong Blue Economy Policy

All OCT representatives acknowledged a basic requirement for the development of a specific OCTA and individual OCT Blue Economy Policy. All experts identified a 'lack of national policy' across all the sub-sectors under their scrutiny. (See individual profiles) Supported by secondary data trawl analysis, which focused on the availability of National, Regional, and International policy, strategy and reported a distinct lack of relevant policy at the national level.

The impact of not having a clear ocean or blue economy national policy is critical. Such a strategy would reflect the national response and set out the priority BES goals to stakeholders and drive this Roadmap. The result will send out a strong communication to BES stakeholders, to show the manner in which they can be involved. Additionally, if policies and strategies develop within a common framework, the outputs can be incorporated into strategic national or regional responses.

To assist that goal an 'OCT Blue Economy Strategy' is required in the first instance, it will be the driver to encapsulate the Roadmap into an overarching OCTA (OCTs) policy document. A Blue Economy Policy will be a valued addition to this Blue Economy Roadmap, as it will provide a system where on the OCT member states can officially adopt which in turn will send out to the global community that OCTs are very serious about developing their blue economy sectors. This would also assist relevant large-scale funding or investment applications, which often require evidence of government support if the applications are to be successful.

In addition, a well-defined strategy/policy would provide individual OCTs a template and the referenced knowledge to quickly adapt the information contained in the OCT BES strategy into specific OCT Blue Economy Policies that focus solely to their individual state. Thus, the OCT BES strategy will provide a common template for all the OCTs from which they can then develop their National policy, allowing a 'cherry picking' of the elements most relevant to their country. For example, Greenland may have a stronger focus on Fisheries and less focus on Coastal Tourism.

Recommendation: The development of an official OCT Blue Economy Strategy developed with the provision of a common template for OCTs in mind.

5.4.2 Blue Economy Single Point of Contact – OCT Blue Growth Observatories

The development of a single point of contact for the development of the National/ Regional Blue Economy was highly recommended by the OCT representatives. Lack of accessible common information will lead to a piecemeal approach and thus should be avoided. The sustainable development of the OCTs Blue Economy requires all sectors to be on the same page.

Recommendation is to initiate an OCT 'Blue Growth Observatory (BGO)' mechanism. BGOs will provide a single window for OCT government and BES stakeholders to obtain strategic information in relation to queries.

1. Blue Growth observatories will provide an investment platform, creating cooperation prospects between BES sub-sectors and potential investor opportunities;
2. Identify funding mechanism and assist the development of applications;
3. Lobby funding bodies to promote OCT aspirations;
4. Assist the development of OCT BES clusters through national government in coordination with Associated EU Member State maritime clusters;
5. Create a global online platform promoting the OCT BES, aimed at stimulating investment and funding opportunities and emerging information;
6. Assist OCTs to attain funding or participation in a flagship or otherwise project in order to develop a national maritime spatial plan and/or a marine spatial plan for all OCTs;
7. Help identify sustainable marine technologies that could contribute to the OCT BES and which private sector partners could exploit those opportunities;
8. Provide and coordinate specialised skills and training and;
9. Assist in the coordination of regional OCT proposals for the BES sub-sectors.

The recommendation is to create three OCT Blue Growth Observatories (BGO) in order to optimise resources. These BGOs will provide all OCTs a BES high value knowledge powerhouse and implementation platform to inform and guide OCTs in all aspects of the BES, and more importantly information specific for their OCT. In reality, for each OCT to develop such a resource would be extremely costly and from an individual state perspective would potentially overlook funding/investment opportunities that can only be achieved through a more regional approach.

Recommendation: Development of the OCT Blue Growth Observatories initiative - a mechanism that will enable OCTs governments and BES sub-sector actors' access to a Blue Economy single point of contact.

The primary objective of the BGOs is to significantly increase funding and investment prospects in the BES sub-sectors for all OCTs and to create a user-friendly interface for individual and between OCTs. BGOs will maintain a horizon scanning capability, which will ensure that OCTs are informed well ahead of the curve for all funding and investment opportunities. They will also have the dynamic capability to draft and make applications to funding and investment bodies for OCTs. Specifically, BGO will implement the majority of the recommendations set out in this Study creating a knowledge centre for the benefit of OCTs and provide templates that OCTs can easily adapt to reflect the needs of their specific country.

On request, BGOs can provide professional and impartial advice to OCTs and will strive to assist OCTs in the development of Innovation/ R&D centres as well as maritime technology parks. BGO will also assist the development of partnerships between academic and private commercial enterprises in line with OCT government expectations and sift through enquires to ensure only viable projects are considered by the OCT governments aimed at reducing time, resources and costs for OCT governments. The BGOs will maximise on 'best practices' and ensure where projects have been successfully implemented in one OCT, that other OCTs can capitalise on the best practice reducing duplication and cost. Excepting executive experts, BGO working staff should be selected from individual OCTs ensuring that knowledge generated is shared, BGOs will also encourage OCT (University) students to carry out internships and eventually assist those students to find work in their OCT and area of interest. BGOs will also on request from OCTA and/or an individual OCT carry out research and draft specific reports.

Establishment of the Project Steering Committee

A Project Steering Committee (PSC) will be formed to ensure that BGO works within along with the PSC protocols (chairing, members, agenda, presentations, minute taking). All PSC elements and its members structure must be approved by all OCTs and be representative of the OCTs. The Project Steering Committee (PSC) are important to the success of the BGOs as it will provide an overview of all BGO related formal documents and will have the decision making process as to whether the project is on track, moving in the correct direction, or needs to factor in new concerns or opportunities.

The following geolocations are recommended for BGOs, the first in Brussels (Critical to enable face-to-face lobbying at the EU level) and ensure that OCTs are represented at pertinent meetings and forums. One situated in the Caribbean serving all OCTs located in the Caribbean, Curacao is acknowledged as the country for a BGO since the Regional UN- IMO official representative is located there, the IMO being the UN official agency for all issues maritime. The third recommendation would be New Caledonia; this because it has evidenced a mature BES sector and has an established maritime cluster and therefore a basic skills base. Both of these attributes provide a strong foundation from which to develop the BES sectors in other Pacific located OCTs. Importantly, the BGO must make visits to associated OCTs and use technology such as 'Zoom, Skype to maintain communication.

BGOs will also respond where necessary to the training and skill needs of the sub-sectors, identifying where skill gaps exist and providing the correct purpose designed training as an intervention to fill skill gaps. BGOs will also create a robust communication strategy setting out the modes, timescales and priorities for communication. This will need to be approved by the OCTs Steering Committee. One of the first exercises to be carried out by the BGO will be to provide Specialised Blue Economy Training and Skills

5.4.3 Availability of Specialised Blue Economy Training and Skills

Above and beyond BGO general and sub-sector training and skills tasks, in the first instance, it will be critical for the BGO to provide Specialised Blue Economy Training and skills for OCT governments. The BES will be a completely new sector and it would be unreasonable to expect OCT governments to know or understand the nuances and some of the complexities of the sector and its sub-components. In order for the OCTs to be aligned, the first task will be to provide information, and clarify to OCT governments what is or is not a BES sub-sector and the potential challenges and opportunities moving forward. These specific training can be carried out through online training with great regard to individual OCT questions and queries; this will enable the BGO to understand better the potential barriers to reach full BES implementation whilst empowering OCT governments with the detailed knowledge they will require to inform their communities. It is proposed that training will be provided by ocean basin.

The second Specialised Blue Economy Training and Skills will be aimed at the Commercial (Private) and academic sectors; this will initiate the necessary communication outlining the commitment of OCT governments to drive the Blue Economy and will 'set the scene' and encourage a joined up approach between commercial enterprises and university R&D departments. Similar to above these specific training can be carried out through online training with great regard to individual Commercial and Academic questions and queries; this will enable the BGO to understand barriers that are fuller of potential to reach full BES implementation whilst developing sub-sector clusters and research communities.

Recommendation: Provision of Specialised Blue Economy Sector Training and Skills for OCTs government departments and for Private and Academic Sectors. This will include grant application and development skills.

The main objective is to facilitate for strong funding and investment partnerships, which often require both sectors involvement as a precursor to validate a proposal. It is proposed that training will be provided by ocean basin.

5.4.4 Increased Investment in the Blue Economy

OCT representatives acknowledged that more investment would be required to kick-start and maintain the BES. Comments received from OCT private enterprises included "*There is a desire to establish sustainable operations but lack of investment and security in the ventures*", "*speed up the petitions and provide grants or other type of financial aid*" and "*there is some interest and there are technologies available, the issue is the financing which is not available*".

Recommendation: The design and implementation of an OCT Blue Investment Opportunity Study, which will identify and analyse all global BES investment opportunities, 'current and projected' and tailor those pertinent to OCTs BES activities. Outputs to inform and guide the investment protocol for the OCT Blue Growth Observatories, for the benefits of all OCTs.

In general, the identification of activities that could sustainably exploit the natural blue resources of the OCTs were recognised and development actively encouraged by the representatives. Nevertheless, only four BES sub-sectors were examined in some depth, which only provided a snap-shot overview. The BES is a vast sector and its potential for generating substantial wealth for OCTs cannot be underestimated, the sector itself from the global perspective is embryonic with new and more innovative sub-sectors coming to the fore almost weekly. To stay ahead of the curve it will be critical for OCTs to have access to a real time and active 'horizon scanning' capability: this should be encapsulated into the work of the Blue Growth Observatories who can update OCTs when relevant data, information and opportunity becomes available.

Recommendation: As part of the Blue Growth Observatories, development of an OCT horizon scanning capability that will match emerging new sustainable BES maritime activities with the geolocations of the OCTs and identify those activities that can attract investment and generate employment opportunities for OCTs.

6 FLAGSHIP PROJECTS

Flagship Projects are research and development projects that are strategically and scientifically defined and are of substantial size with regard to their scientific and financial volume, the number of project partners and the running time. Flagship Projects aim at the horizontal and/or vertical integration of the value chain and thus at the technological feasibility of systems solutions with a long-term potential for growth.

Flagship Projects serve to strengthen a sector or branch or to generate model solutions to important challenges faced by society. Because of their specific and high-level importance, they create an awareness of the problem among the public. These types of projects carried out in either the research category industrial research and/or experimental development, should be between two and four years duration and due to their specific classification should be of at least EUR 2 million.

Flagship projects sit under the umbrella of flagship initiatives, there are seven identified that fit within the EU Cohesion Policy and the 2010 Europe 2020 strategy provides the basis for economic recovery of Europe towards 2020. It focused on an EU strategy for smart, sustainable and inclusive growth". This was a long-term strategy for the socio-economic development of the European Union replacing the Lisbon Strategy. It underlines the importance of close collaboration of Member States for the recovery from the economic crisis and the reforms that are necessary in time of further globalisation. It set 5 targets to achieve the vision these are:

1. To raise the employment rate of the population aged 20-64 to 75%;
2. To achieve a level of 3% of GDP invested in R&D;
3. Reduce greenhouse gas emissions by at least 20% compared to 1990;
4. Reduce the share of early school leavers to 10%;
5. To help at least 20 million people out of poverty⁴⁰.

Flagship Initiatives detailing the necessary actions were designed to implement this strategy. It has identified three main priority areas: smart (based on knowledge and innovation), sustainable (resource efficient) and inclusive (fostering a high-employment economy) growth. Due to the geographic and social scale required to develop a 'flagship project' it is better to consider them from an Ocean perspective engaging the OCTs considered in this report. Projects suggested from a singular country or by the OCT representatives and specific experts that embrace one to three islands are provided within the individual profiles. The main 'flagship' initiative identified from the comments and responses from OCT representatives is as follows.

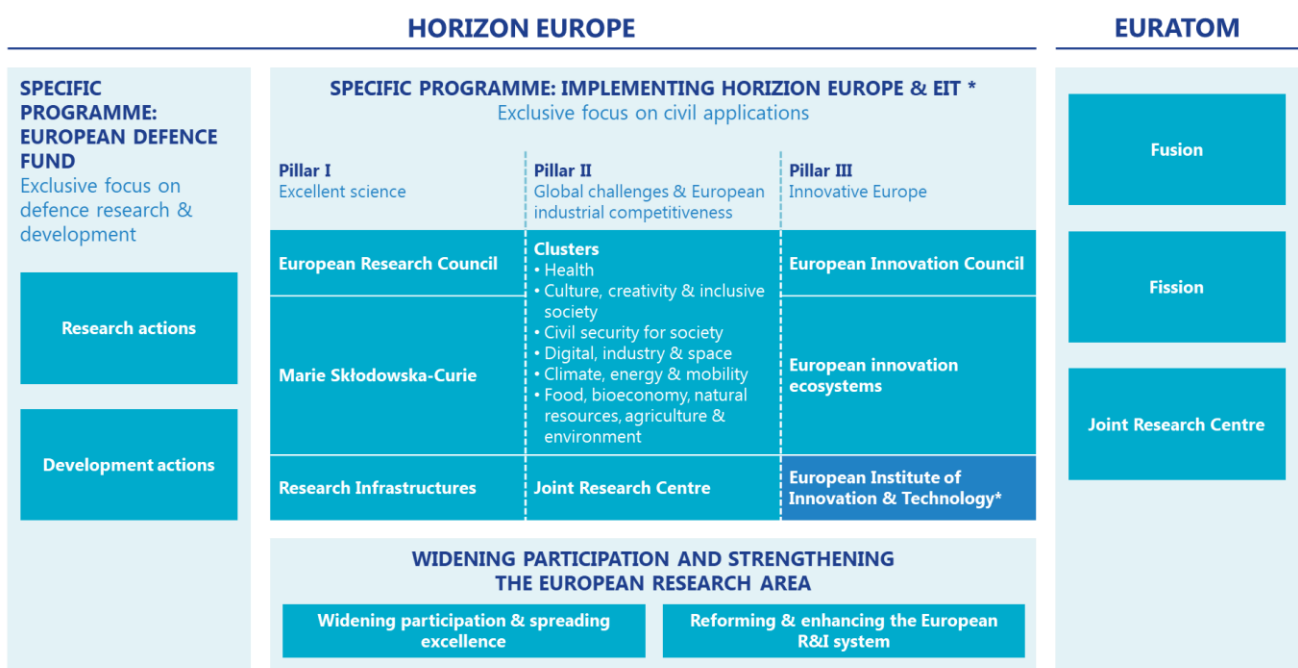
⁴⁰ [https://www.europarl.europa.eu/RegData/etudes/etudes/join/2012/474559/IPOL-REGI_ET\(2012\)474559\(ANN01\)_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/etudes/join/2012/474559/IPOL-REGI_ET(2012)474559(ANN01)_EN.pdf) (Accessed 09.03.2021)

6.1 The New Horizon Europe Programme

The EU institutions reached a political agreement on Horizon Europe on 11 December 2020 and set the budget for Horizon Europe at €95.5 billion in current prices (including €5.4 billion from the Next Generation of the EU – Recovery Fund). On this basis, the European Parliament and the Council of the EU proceed towards the adoption of the legal acts. The first Horizon Europe Strategic Plan (2021-2024) which sets out key strategic orientations for the support of research and innovation, was adopted on 15 March 2021.

The work programme for the European Research Council (ERC) was adopted on 22 February 2021. The work programme for the European Innovation Council (EIC) was adopted on 17 March and the EIC was formally launched on 18 March. The main work programme dedicated to COVID-19 variants will be adopted in March the complete main work programme is expected to be adopted in April⁴¹.

FIGURE 6-1 OVERVIEW NEW HORIZON EUROPE PROGRAMME



* The European Institute of Innovation & Technology (EIT) is not part of the Specific Programme

Source: COWI, based on Horizon Europe, EC 2021

A single programme has been identified in this Study as providing the catalyst from which a pelthra of other projects can evolve.

⁴¹ https://ec.europa.eu/info/horizon-europe_en (Accessed 23.03.2021)

6.2 Overseas Countries and Territories Blue Growth Observatories for the sustainable development of the blue economy sector (Flagship Initiative)

The implementation of the OCTs Blue Growth Observatories (See Strategic Priority Four) due to the scale, geographical scope and the clear aims, objectives and expectations set out above; the programme would present itself as a very viable OCT EU Flagship Initiative. The identified outcomes fall in line with the expectations of the 2021 New Horizon Europe funding programme.

Potentially all the other projects mentioned below, along with all the recommendations, could also fit inside that specific programme. This is because they all relate to one of the key Horizon Europe Missions: 'Healthy oceans-seas, coastal and inland waters'.

The EU Mission Healthy Ocean-Seas, Coastal and Inland waters aims to be a powerful tool to raise awareness among citizens of the importance of healthy oceans, seas, coastal and inland waters, and also to help develop solutions on a range of issues.

These include:

- Systemic solutions for the prevention, reduction, mitigation and removal of marine pollution, including plastics;
- Transition to a circular and blue economy;
- Adaptation to and mitigation of pollution and climate change in the ocean;
- Sustainable use and management of ocean resources;
- Development of new materials including biodegradable plastic substitutes, new feed and food;
- Urban, coastal and maritime spatial planning;
- Ocean governance;
- Ocean economics applied to maritime activities.

Successful 'flagship projects' are:

- The Future of Seas and Oceans Flagship Initiative' (BG-07-2019-2020);
- Marine research is playing a crucial role in wider efforts to preserve and support ocean sustainability. Innovative technology such as Blue Cloud offers us unique opportunities to understand, exploit and protect the ocean environment⁴²;
- MarTERA⁴³: Strengthening the ERA in maritime and marine technologies and Blue Growth, with a focus on technologies (instead of sectors) due to their potentially large impact of applications on the Blue Economy. End date Nov-2021;

⁴² <https://www.blue-cloud.org/about>

⁴³ <https://www.martera.eu/start>

- BlueBio⁴⁴: Strengthening Europe’s position in the blue bioeconomy by identifying new and improve existing ways of bringing bio-based products and services to the market and find new ways of creating value from in the blue bioeconomy. End date Nov-2023;
- AquaticPollutants⁴⁵: Strengthening the ERA in the field of clean and healthy aquatic ecosystems and leverage new collaboration between the freshwater, marine and health research areas. End date Dec-2024;
- BiodivERsA⁴⁶: Offering innovative opportunities for the conservation and sustainable management of biodiversity and is instrumental for the development of the Rescuing biodiversity to safeguard life on Earth Partnership. End date Oct-2025.

6.3 OCTs Maritime Spatial Planning Flagship Project

Maritime Spatial Planning (MSP) is defined in the EU Directive on MSP as ‘a process by which the relevant Member State’s authorities analyse and organise human activities in marine areas to achieve ecological, economic and social objectives’, according to the European Commission’s Directive on Maritime Spatial Planning.

Competition for maritime space – for renewable energy equipment, aquaculture and other uses – has highlighted the need to manage our waters more coherently. Maritime spatial planning (MSP) works across borders and sectors to ensure human activities at sea take place in an efficient, safe and sustainable way. The European Parliament and the Council have adopted legislation to create a common framework for maritime spatial planning in Europe.

The benefits of maritime spatial planning are:

- **Reduce conflicts** between sectors and create synergies between different activities.
- **Encourage investment** – by creating predictability, transparency and clearer rules.
- **Increase cross-border cooperation** – between EU countries to develop energy grids, shipping lanes, pipelines, submarine cables and other activities, but also to develop coherent networks of protected areas.
- **Protect the environment** – through early identification of impact and opportunities for multiple use of space.

In practice, MSP has been considered world-wide even in a broader way as encompassing both formal and informal public undertakings and initiatives on how to use the sea space in line with societally agreed goals, values and targets. MSP can result in plans, permits and other administrative decisions that decide on the spatial and temporal distribution of relevant existing and future activities and uses in the marine waters, but the outcome of MSP can also take the form of different non-binding visions, strategies, planning concepts, guidelines and governance principles.

⁴⁴ <https://bluebioeconomy.eu/>

⁴⁵ <https://aquaticpollutants.ptj.de>

⁴⁶ <https://www.biodiversa.org/>

Funding MSP cross-border projects

These EU-funded projects are designed to facilitate cooperation between EU countries in the management of maritime space and, since 2015, to support the implementation of the MSP legislation.

- SIMWESTMED – Project to support Maritime Spatial Planning, launch and carry out concrete and cross-border MSP initiatives between EU countries in the in the Western Mediterranean (2017-18). Completed. Project results. Final conference documents⁴⁷.
- SUPREME – Project to support the implementation of Maritime Spatial Planning in EU countries within their marine waters in the Eastern Mediterranean, including the Adriatic, Ionian, Aegean and Levantine Seas, launch and carry out concrete and cross-border MSP initiative between EU countries in the Eastern Mediterranean (2017-18)⁴⁸.
- Pan Baltic Scope - builds upon the previous project to continue developing innovative tools, exchanging data and harmonising MSP approaches, expanding the principles to the entire Baltic Sea. (2018 – 2019).
- SEANSE develops and tests a common approach to Strategic Environmental Assessments focussing on renewable energy and supporting the deployment of maritime spatial plans in the North Sea. (2018-2020)⁴⁹
- MarSP - The project provides management tools tailored to the environmental and socio-economic settings of each archipelago in Macaronesia (2018-2020)⁵⁰.
- OCEAN METISS - The project aims to develop MSP tools on both a regional and a local scale to boost economy while preserving the region's rich biodiversity in Reunion, an outermost region of the European Union and one of the overseas departments of France, in the Indian Ocean (2017-2019). Completed.⁵¹
- MSP GLOBAL WEST MED PILOT- The project aims to promote good MSP practices and activities to meet both regional and national priorities and needs in the context of Western Mediterranean by increasing cooperation between EU and non-EU countries in line with the WESTMED initiative. (2019)

⁴⁷ <https://www.msp-platform.eu/projects/supporting-maritime-spatial-planning-western-mediterranean-region>

⁴⁸ <http://www.msp-supreme.eu/results>

⁴⁹ <https://ec.europa.eu/easme/en/strategic-environmental-assessment-north-sea-energy-aid-maritime-spatial-planning>

⁵⁰⁵⁰ <https://ec.europa.eu/easme/en/macaronesian-maritime-spatial-planning>

⁵¹ <https://www.oceanmetiss.re/docs/?lang=en>

6.4 Marine Spatial Development and Marine Protected Areas Flagship R&D

Marine Spatial Planning is an important activity as it informs the development of Maritime spatial plans for example, on the whereabouts of a protected species, provides the environmental input to ensure that no plans are put forward to place for blue energy technology. Marine Spatial Plans develop the diverse sets of high-quality marine data and information required to inform maritime stakeholders and planners in the planning of maritime activities to support the blue economy whilst also helping to maintain healthy and productive seas and oceans in order to make sound decisions based on facts. Marine Spatial Plans, for example, integrated datasets of ocean physics, chemistry, biology, seafloor geology, and their derived products like seabed habitat maps, can help Marine Protected Areas planners decide where the most vulnerable ecosystems are that need protecting and where human activities such as wind farms and maritime shipping routes would be best located.

This is linked to EMDO-NET and the EU Atlas of the Sea, which is an interactive web-map viewer available for the general public, non-expert professionals and schools. First launched in 2010 by the European Commission, Directorate-General for Maritime Affairs and Fisheries (DG MARE), it provides at-a-glance data in a comprehensive and visual way, while at the same time serving as a support tool for marine policy and the blue economy.

Marine Protected Areas

Marine protected areas (MPAs) play an important role in protecting and conserving global ocean ecosystems through the use of globally recognized progressive targets for ocean conservation. Recent trends involve protection of high sea areas beyond national jurisdiction, the World Heritage listing of sites with Outstanding Universal Value, and a growing recognition of the importance of protecting large-scale marine areas over 150,000 km².

The many critical services provided by healthy marine ecosystems include food security, fisheries management and aquaculture. A range of issues are associated with MPAs, such as the IUCN Green List of Protected and Conserved Areas, integrated connectivity across seascapes, the carbon storage capacity of our oceans as “blue carbon,” and the important contribution of healthy oceans to a strong global economy. The critical role that MPAs play in a future changing ocean world is emphasized, by increasing ocean resilience to climate change impacts, protecting important global fisheries, as part of an effective ocean governance system, and by reducing the cumulative impacts and pressures on our oceans⁵².

⁵² <https://www.sciencedirect.com/topics/earth-and-planetary-sciences/marine-protected-area>

7 RECOMMENDATIONS FOR THE BLUE ECONOMY ROAD MAP IN ORDER

The OCTA Blue Economy Roadmap vision is: To develop and support a distinctive OCT Blue Economy Sector (BES) for OCTs and provide robust guidelines to assist individual OCTs to fulfil their aspirations of identifying and ordering their Blue Economy Industries into a sustainable and economically viable sector.

This chapter contains two parts. The first part focusses on the recommendations following the Blue Economy Roadmap strategic priorities as set out in chapter 5. The second part will zoom in on more detailed recommendations for each OCT, based on findings and observations through literature review, the online survey, and interviews.

7.1 Recommendations Strategic Priorities (Blue Economy Recommendations)

The BES aims to significantly increase high value employment opportunities for national citizens, attract investment and increase the sectors economic contribution to national GDP. Key objectives focus on short, medium and long-term goals in line with International, European and National Policies and each goal aligned to the sustainable use of national ocean blue resources ensuring the conservation of the marine environment for current and future generations.

The Following table maps out the recommendations in terms of priority and where they link together. The OCT Blue Growth Observatories FLAGSHIP Initiative will provide the mechanism to enable the majority of other recommendations. The project elements that will fit under the main flagship initiative will be highlighted in Blue.

Strategic Priority	Level	Description	Stage One	FUNDING STREAM	Stage Two	Stage Three Outputs	Time Frame
4	High	Initiation of OCT Blue Growth observatories to provide an investment platform creating cooperation prospects between BES sub-sectors and potential investor opportunities	Agreement by OCTA Members	FLAGSHIP INITIATIVE HORIZON EUROPE	Development of (BGO) Plan outlining the purpose and missions	Implementation of three OCT Blue Growth Observatories	8 months
1	High	The development of an OCT Blue Economy Sector Expansion Study, (i) identifying and clarifying the key contributing OCTs government departments and private industries; (ii) the linkages between them, (iii) a methodology for enabling BES critical mass and (iv) a template for initiating focused and targeted communication and promotion of the BES.	Agreement by OCTA Members Prepare Tender	FLAGSHIP INITIATIVE SUB -PROJECT HORIZON EUROPE	Tender submissions and Start of Work	OCT Blue Economy Sector Expansion Study Draft and Final Report	1 year
1	High	The development of the OCT Blue Economy Sector Strategy aimed at providing an overall BES strategy for OCTs and provide a template that OCTs can utilise in the development of OCT National Blue Economic Sector Strategies. This strategy clearly time sequenced, to ensure that prerequisite activities, identified and given early priority, in order to avoid holding up important activities that depend on them.	Agreement by OCTA Members Prepare Tender		Tender submissions and Start of Work	OCT Blue Economy Strategy	4 Months
3	High	OCT requirement to establish targeted research capacity for environmental and marine spatial planning	Agreement by OCTA Members Prepare Tender	FLAGSHIP INITIATIVE SUB -PROJECT HORIZON EUROPE	Tender submissions and Start of Work	Identification of local capacity and European partners to develop National Marine Spatial Plans	3 Months

Strategic Priority	Level	Description	Stage One	FUNDING STREAM	Stage Two	Stage Three Outputs	Time Frame
3	High	Requirement to establish targeted research capacity for maritime spatial planning	Agreement by OCTA Members Prepare Tender	FLAGSHIP INITIATIVE SUB -PROJECT HORIZON EUROPE	Tender submissions and Start of Work	Identification of local capacity and European partners to develop National Maritime Spatial Plans	3 Months
3	High	Creation of OCT Maritime Spatial Plans	Agreement by OCTA Members Prepare Tender	FLAGSHIP INITIATIVE SUB -PROJECT HORIZON EUROPE	Development of Horizon European Funded Project	Completion of National Maritime Spatial Plans	3 Years
4	Medium	The design and implementation of an OCT Blue Investment Opportunity Study, which will identify and analyse all global BES investment opportunities, 'current and projected' and tailor those pertinent to OCTs BES activities. Outputs to inform and guide the investment protocol for the OCT Blue Growth Observatories, for the benefits of all OCTs.	Agreement by OCTA Members Prepare Tender	OCT BLUE GROWTH OBSERVATORIES FLAGSHIP INITIATIVE SUB -PROJECT HORIZON EUROPE	Tender submissions and Start of Work	OCT Blue Investment Opportunity, Current and Projected	4 Months
4	Medium	The OCT wide Investment Know-how Platform accessible by all OCTs, this should use a virtual platform approach that OCTs can access in relation to the key sectors and provide a step by step approach to access BES investment where it exists. This provided the OCT Blue Economy Observatory (discussed later)	Agreement by OCTA Members Prepare Tender	OCT BLUE GROWTH OBSERVATORIES FLAGSHIP INITIATIVE SUB -PROJECT HORIZON EUROPE	Tender submissions and Start of Work	OCT Investment virtual 'know-how' platform	4 Months



Strategic Priority	Level	Description	Stage One	FUNDING STREAM	Stage Two	Stage Three Outputs	Time Frame
2	Medium	In collaboration with established OCTs Maritime Clusters and with the National Maritime Cluster to develop a standardised OCTA template of all industries that contribute or facilitate to the Blue Economy Sectors	Agreement by OCTA Members Prepare Tender	OCT BLUE GROWTH OBSERVATORIES FLAGSHIP INITIATIVE SUB -PROJECT HORIZON EUROPE	Tender submissions and Start of Work	OCT Blue Economy Strategy	6 Months
1	Medium	Development of an OCT common platform tool (or offer an existing tool) to provide to every OCT an online template to enable OCTs governments an accessible means to develop national cluster development	Agreement by OCTA Members Prepare Tender	OCT BLUE GROWTH OBSERVATORIES FLAGSHIP INITIATIVE SUB -PROJECT HORIZON EUROPE	Tender submissions and Start of Work	Provision of a virtual common platform tool for OCT and BES clusters	4 Months
1	Medium	Where OCTs do not have an established BES Maritime Cluster and in order to reduce duplication of costs, the establishment of BES Maritime Clusters taking into account multiple countries. The eventual economic analysis would take into account individual countries.	Agreement by OCTA Members Prepare Tender	OCT BLUE GROWTH OBSERVATORIES FLAGSHIP INITIATIVE SUB -PROJECT HORIZON EUROPE	Tender submissions and Start of Work	Established BES clusters in all OCTs or multi island	6 Months
2	Medium	OCTA Study, Developing OCT Blue Economy Human Capital Training and Education, a Guidance and Roadmap	Agreement by OCTA Members Prepare Tender	OCT BLUE GROWTH OBSERVATORIES FLAGSHIP INITIATIVE SUB -PROJECT HORIZON EUROPE	Tender submissions and Start of Work	Guidance and Roadmap Report Developing OCT Blue Economy Human Capital Training and Education.	6 Months



Strategic Priority	Level	Description	Stage One	FUNDING STREAM	Stage Two	Stage Three Outputs	Time Frame
2	Medium	Optimisation of Blue Economy Innovation and Incubation Centres and Technology Parks, Guide for OCTs to maximise investment programs to facilitate for sustainable growth	Agreement by OCTA Members Prepare Tender	OCT BLUE GROWTH OBSERVATORIES FLAGSHIP INITIATIVE SUB -PROJECT HORIZON EUROPE	Tender submissions and Start of Work	Report: Optimisation of Blue Economy Innovation and Incubation Centres and Technology Parks, Guide for OCTs to maximise investment programs	6 Months
3	Medium	Drafting of an OCT Blue Tourism Strategy this will consider the following: Guidelines on how to prevent impacts on biodiversity and enhance benefits for recreation and tourism supported by marine protected areas.	Agreement by OCTA Members	OCT BLUE GROWTH OBSERVATORIES FLAGSHIP INITIATIVE SUB -PROJECT HORIZON EUROPE	Tender submissions and Start of Work	Report. OCT Blue Tourism Strategy and Best Management Practices	9 months
3	Medium	Drafting of an OCT Blue Energy Strategy that will take into account the sub recommendations	Agreement by OCTA Members	OCT BLUE GROWTH OBSERVATORIES FLAGSHIP INITIATIVE SUB -PROJECT HORIZON EUROPE	Tender submissions and Start of Work	Report. OCT Blue Energy Strategy and Best Management Practices	10 months
3	Medium	OCTA Report, Guidance for OCTs on the sub-sectors most feasible for Attaining Strong Blue Economic Growth	Agreement by OCTA Members Prepare Tender	OCT BLUE GROWTH OBSERVATORIES FLAGSHIP INITIATIVE SUB -PROJECT HORIZON EUROPE	Tender submissions and Start of Work	OCTA Report, OCT Guidance on the BES sub-sectors most feasible for Attaining Strong Blue Economic Growth	6 Months



Strategic Priority	Level	Description	Stage One	FUNDING STREAM	Stage Two	Stage Three Outputs	Time Frame
3	Medium	OCTA Study Outlining the Importance of Effective Maritime Governance and the Development of the BES for OCTs	Agreement by OCTA Members Prepare Tender	OCT BLUE GROWTH OBSERVATORIES FLAGSHIP INITIATIVE SUB -PROJECT HORIZON EUROPE	Tender submissions and Start of Work	OCTA Report: Importance of Effective Maritime Governance and the Development of the BES for OCTs	6 Months
3	Medium	Increase maritime governance cooperation between the National State Overseeing Authority and OCT Governments	Agreement by OCTA Members Prepare Tender	OCT BLUE GROWTH OBSERVATORIES FLAGSHIP INITIATIVE SUB -PROJECT HORIZON EUROPE	Tender submissions and Start of Work	Established maritime governance cooperation between the National State Overseeing Authority and OCT Governments BES clusters in all OCTs or multi-island	1 YEAR
3	Medium	OCTA Study: Requirement of OCT BES Enforcement Protocols to reinforce the sustainable development of BES operations, and discourage unlawful practices	Agreement by OCTA Members Prepare Tender	OCT BLUE GROWTH OBSERVATORIES FLAGSHIP INITIATIVE SUB -PROJECT HORIZON EUROPE	Tender submissions and Start of Work	Report: OCT Enforcement Protocols to reinforce the sustainable development of BES operations, and discourage unlawful practices	6 Months
3	Medium	Development of OCT sustainable fisheries policies.	Agreement by OCTA Members	OCT BLUE GROWTH OBSERVATORIES FLAGSHIP INITIATIVE SUB -PROJECT HORIZON EUROPE	Development of Horizon European Funded Project	OCT Sustainable Fisheries Policies	2 YEARS



Strategic Priority	Level	Description	Stage One	FUNDING STREAM	Stage Two	Stage Three Outputs	Time Frame
3	Medium	OCTA Study, Optimum OCT guide for the enforcement of fisheries for island states.	Agreement by OCTA Members	OCT BLUE GROWTH OBSERVATORIES FLAGSHIP INITIATIVE SUB -PROJECT HORIZON EUROPE	Development of Horizon European Funded Project	Optimum guide for the enforcement of OCT fisheries	8 months
3	Medium	OCTA study: Opportunities for BES fish processing plants, investment and global marketplace	Agreement by OCTA Members	OCT BLUE GROWTH OBSERVATORIES FLAGSHIP INITIATIVE SUB -PROJECT HORIZON EUROPE	Development of Horizon European Funded Project	Report. Opportunities for BES fish processing plants, investment, and global marketplace	8 months
3	Medium	OCTA Report: an economic study to provide guidance to the initiation and development of aquaculture sub-sectors for OCTs, aimed at exploiting sustainable resources to enhance employment opportunities and increasing national GDP from blue resources	Agreement by OCTA Members	OCT BLUE GROWTH OBSERVATORIES FLAGSHIP INITIATIVE SUB -PROJECT HORIZON EUROPE	Development of Horizon European Funded Project	Report. Opportunities for BES fish processing plants, investment and global marketplace	8 months
3	Low	Increase the remit of the PWP 3 platform (i) to identify, define and adopt strategic indicators and (ii) encourage the sharing of scientific carbon capture and ocean environment data by professional bodies in order to provide an alert system to help guide OCT decision making processes	Agreement by OCTA Members		Support by the Blue Growth Observatory	PWP 3 Platform potential increased	3 months



Strategic Priority	Level	Description	Stage One	FUNDING STREAM	Stage Two	Stage Three Outputs	Time Frame
2	Low	Feasibility study, explaining the 'capacity of OCT ports to facilitate for focused BES development', the report will examine the key ports of the OCTs and initiate discussion with the Harbour Masters to ascertain the potentials for placing specific BES infrastructure near or with access to the ocean within the confines or close to the port	Agreement by OCTA Members Prepare Tender	OCT BLUE GROWTH OBSERVATORIES FLAGSHIP INITIATIVE SUB -PROJECT HORIZON EUROPE	Tender submissions and Start of Work	Feasibility Report Capacity of OCT ports to facilitate for focused BES development.	6 Months
2	Low	OCTA Report: OCT Guidance for the Optimal Requirements of a OCTs National Environmental R&D and Communication Centres, to include outline of the high priority fields, global BES contribution, and identify where local employment opportunities and GDP can be maximised.	Agreement by OCTA Members Prepare Tender	OCT BLUE GROWTH OBSERVATORIES FLAGSHIP INITIATIVE SUB -PROJECT HORIZON EUROPE	Tender submissions and Start of Work	OCTA Report: OCT Guidance for the Optimal Requirements of a OCTs National Environmental R&D and Communication Centres	6 Months
4	Low	Development of an OCT horizon scanning capability that will match emerging new sustainable BES maritime activities with the geolocations of the OCTs and identify those activities that can attract investment and generate employment opportunities for OCTs	Agreement by OCTA Members	OCT BLUE GROWTH OBSERVATORIES FLAGSHIP INITIATIVE SUB -PROJECT HORIZON EUROPE	Tender submissions and Start of Work with the Blue Growth Observatory	OCT Blue Growth Observatory Horizon Scanning Capability	3 months
1	Low	Sint Maarten and Saint-Pierre-et-Miquelon receive specific focus and support to help clarify their vision of their (BES) sectors and key stakeholders.	Agreement by OCTA Members Prepare specific operations with OCTs		Support by Blue Growth Observatory Tender submissions and Start of Work	Increase support to Sint Maarten and Saint-Pierre-et-Miquelon	2 Months



Strategic Priority	Level	Description	Stage One	FUNDING STREAM	Stage Two	Stage Three Outputs	Time Frame
1	Low	Greenland OCT to operationalise a two-way communication with the Danish Maritime Cluster with a focus on the BES industries to gain support for the initiation and development of the Greenland BES Maritime Cluster.	<p>Agreement by OCTA Members</p> <p>Prepare specific operations with Denmark and Greenland</p>		<p>Support by Blue Growth Observatory</p> <p>Tender submissions and Start of Work</p>	<p>Established communication with the Danish Maritime Cluster and Greenland with a focus on the BES industries</p>	2 Months



7.2 Recommendations for each OCT

In support of the main, OCTA-wide recommendations made in the section above, this section presents more detailed recommendations for each OCT, based on findings and observations through literature review, the online survey, and interviews. These recommendations are incorporated in the main recommendations of the previous chapter, but are listed again here in order to provide inspiration for actions individual OCTs could implement. A number of these recommendations are repeated for multiple OCTs, as certain areas where action is suggested are common to most OCTA members. This list is not meant to be a comprehensive roadmap for each OCT, as this would go beyond the scope of this study.

7.2.1 Aruba

Blue Maritime

- Improving maritime enforcement, primarily through two main sub-recommendations (detailed below). This recommendation falls within the remit of the OCTA-level recommendation of developing a study on the Requirement of OCT BES Enforcement Protocols to reinforce the sustainable development of BES operations, and discourage unlawful practices, under subchapter 5.3 Strategic Priority Three - Reinforcement of the natural ocean environment, social and economic interface, and is common to most OCTs.
 - Establish maritime enforcement capabilities to protect the entirety of Blue Economy Sectors, including maritime, tourism, fisheries, blue energy. Given the increasing escalation of Illegal, Unauthorised and Unreported fishing (IUU), it will be critical for Aruba and other OCTs to increase maritime enforcement capacity, not only to send out a strong signal for those who would attempt to steal national resources, but also to protect valuable flora and fauna. This increased enforcement resource could be self-sufficient, as fines imposed on criminals would provide an income applying the 'polluter pays' approach.
 - Instigating better communication with Associated EU Member State with regards to Maritime Enforcement Protocols. OCT representatives interviewed recognised the need for better maritime governance, the government sector applying more emphasis than the private sector. This is particularly relevant in the context of the rise in piracy, illegal dumping of toxic waste at sea and illegal unregulated and unreported fishing. However, the expert investigations noted that the 'maritime' oversight for all OCTs remains with France, The Netherlands, and Denmark. This recommendation is further detailed at OCTA level under subchapter 5.3 Strategic Priority Three - Reinforcement of the natural ocean environment, social and economic interface, and is common to most OCTs.
- Support for the Blue Growth Observatories (BGOs) to provide Aruba a professional resource for application into funding programmes and investment programmes. BGOs are one of the flagship initiatives recommended in the Study and are further discussed in chapters 5.4 and 6.1. BGOs will provide all OCTs a BES high value knowledge powerhouse and implementation platform to inform and guide OCTs in all aspects of the BES, and more importantly information specific for their OCT.
- Maritime, Marine and BES Planning should be developed at national level. This is explained in further detail in chapter 5.3 – Strategic Priority Three. The main subsequent recommendations are:
 - Prepare and implement the Aruba Maritime spatial plan. These must be drawn up by maritime experts and must ensure that human activities in marine areas are organised in order to ensure ecological, economic and social objectives are attained (Section 6.3).

- Development of a Maritime-BES Strategy at national level. These are valuable for ensuring an integrated development approach of the two fields, as well as guiding investors and stakeholders.
- Increase efforts in submitting applications for new Horizon Europe Projects, particularly through joint projects with other OCTs or in the OCTA framework. These include the Flagship Projects proposed in Chapter 6.1.
- Develop the Aruba maritime BES cluster to enable full economic realisation. This will require the outputs of the study set out in the main report (Section 5.1.1.) the OCT Blue Economy Sector Expansion Study, (i) identifying and clarifying the key contributing OCTs government departments and private industries; (ii) the linkages between them, (iii) a methodology for enabling BES critical mass and (iv) a template for initiating focused and targeted communication and promotion of the BES.
- Increase of Aruba BES skills capacity and access to education, skills and supporting infrastructure capacity. This can be done through the implementation of Blue Innovation Centres to assist Start Up Companies and the development of Blue Techno Parks. These are noted by the experts as critical for OCTs as Blue Innovation, Incubation, Entrepreneurial centres and Blue Techno Parks will significantly increase the Human Capital of BES and ensure the future continuity of young people developing the necessary skills at the national level. In addition, these centres will help countries to retain skills and reduce the national 'brain drain' problem where students achieve knowledge but leave because they cannot find an avenue of career progression where they are located, creating a knowledge void at the national level. (For details, see Section 5.2.3.)
- Mutual reinforcement of public and private partnership initiatives and opportunities, Aruba has a strong public-private dialogue. However, this could be improved by providing strategic direction for private enterprises affording them the confidence to invest in Blue commercial development. (For details, see Section 5.4.4.)
- Implementation of the Green Ports Initiative with port reception facilities to provide 'green shipping fuels', the Green Ports EU funded programme. The maritime sector has confirmed its commitment to switching from oil-based fuels to green fuels by 2050, the Cruise Industry committed to change by 2030. (For details, see Section 5.2.2.)

Blue Coastal Tourism

- Following the drafting of an OCT-wide Blue Tourism Strategy (as detailed in chapter 7.1), Aruba could benefit from the development of a specific Aruba Blue Tourism Strategy, which could be created together with neighbouring OCTs. The strategy should, in particular:
 - Take into account the developed 'OCT Blue Tourism Standards and Audit Scheme', which aims to promote OCT tourism initiatives.
 - Develop an indicator system for the sustainable management at destination level and develop coastal and maritime tourism dedicated indicators. These should be linked to the OCT Blue Tourism Standards and Audit Scheme.
 - The development of a feasibility study to explore Coastal Tourism Diversification Opportunities – particularly in relation to the shift from mass and cruise tourism.
 - Programmes for the provision of Sustainable management training for the hospitality sector providers.
- Funding applications (particularly in the field of EU Blue Tourism) created in partnership with other islands at the regional level. This can be done through the BGOs detailed in Chapter 6.1.

- Capacity Building in natural resource areas; two main issues have been identified: (i) some areas suffer from a lack of technical knowledge, whilst others (ii) have a significant shortage of manpower at local level and in parts of the administration.

Blue Energy

- To enter a cooperation agreement with Bonaire and Curaçao to develop a pilot project for Offshore wind energy and/or Wave and /or OTEC, with marine storage and marine green hydrogen production. All three OCTs would benefit from pooling resources in an area that requires relatively high initial investments.
- In the context of the further development of the BES clusters, the undertaking of a mapping of the key Aruba stakeholders of the BES blue energy cluster subsector. This would enable easier communication and networking within the cluster.

Food Security

- Increased Government support to protect and increase (re-seed) areas of coral and mangrove, which are the natural, biological protections against sea incursion and storm surge, and breeding and nursery grounds for marine animals and fish.
- Strategic provision of support to engage in investment tailored financial facilities (for example, seasonal credits) to local growers and fishers, who are targeting the local market.
- Feasibility study into opportunities of the aquaculture market, in cooperation with Curaçao and Bonaire, to maximise economic returns
- In the context of the further development of the BES clusters, the undertaking of a mapping of the Blue food security key stakeholders to enable the development of the Aruba's Blue food cluster subsector. This would enable easier communication and networking withing the cluster.

7.2.2 Bonaire

Maritime

- Improving maritime enforcement, primarily through two main sub-recommendations (detailed below). This recommendation falls within the remit of the OCTA-level recommendation of developing a study on the Requirement of OCT BES Enforcement Protocols to reinforce the sustainable development of BES operations, and discourage unlawful practices, under subchapter 5.3 Strategic Priority Three - Reinforcement of the natural ocean environment, social and economic interface, and is common to most OCTs.
 - Establish maritime enforcement capabilities to protect the entirety of Blue Economy Sectors, including maritime, tourism, fisheries, blue energy. Given the increasing escalation of Illegal, Unauthorised and Unreported fishing (IUU), it will be critical for Bonaire and other OCTs to increase maritime enforcement capacity, not only to send out a strong signal for those who would attempt to steal national resources, but also to protect valuable flora and fauna. This increased enforcement resource could be self-sufficient, as fines imposed on criminals would provide an income applying the 'polluter pays' approach.
 - Instigating better communication with Associated EU Member State with regards to Maritime Enforcement Protocols. OCT representatives interviewed recognised the need for better maritime governance, the government sector applying more emphasis than the private sector. This is particularly relevant in the context of the rise in piracy, illegal dumping of toxic waste at sea and illegal unregulated and unreported fishing. However, the expert investigations noted that the 'maritime' oversight for all OCTs remains with France, The Netherlands, and

Denmark. This recommendation is further detailed at OCTA level under subchapter 5.3 Strategic Priority Three - Reinforcement of the natural ocean environment, social and economic interface, and is common to most OCTs.

- Support for the Blue Growth Observatories (BGOs) to provide Bonaire a professional resource for application into funding programmes and investment programmes. BGOs are one of the flagship initiatives recommended in the Study and are further discussed in chapters 5.4 and 6.1. BGOs will provide all OCTs a BES high value knowledge powerhouse and implementation platform to inform and guide OCTs in all aspects of the BES, and more importantly information specific for their OCT.
- Maritime, Marine and BES Planning should be developed at national level. This is explained in further detail in chapter 5.3 – Strategic Priority Three. The main subsequent recommendations are:
 - Prepare and implement the Bonaire Maritime spatial plan. These must be drawn up by maritime experts and must ensure that human activities in marine areas are organised in order to ensure ecological, economic and social objectives are attained (Section 6.3).
 - Development of a Maritime-BES Strategy at national level. These are valuable for ensuring an integrated development approach of the two fields, as well as guiding investors and stakeholders.
- Increase efforts in submitting applications for new Horizon Europe Projects, particularly through joint projects with other OCTs or in the OCTA framework. These include the Flagship Projects proposed in Chapter 6.1.
- Develop the overarching Bonaire BES 'maritime' cluster to enable full economic realisation. This will require the outputs of the study set out in the main report (Section 5.1.1.) the OCT Blue Economy Sector Expansion Study, (i) identifying and clarifying the key contributing OCTs government departments and private industries; (ii) the linkages between them, (iii) a methodology for enabling BES critical mass and (iv) a template for initiating focused and targeted communication and promotion of the BES.
- Increase of Bonaire BES skills capacity and access to education, skills and supporting infrastructure. This can be done through the implementation of Blue Innovation Centres to assist Start Up Companies and the development of Blue Techno Parks. These noted by the experts as critical for OCTs as Blue Innovation, Incubation, Entrepreneurial centres and Blue Techno Parks will significantly increase the Human Capital of BES and ensure the future continuity of young people developing the necessary skills at the national level. In addition, these centres will help countries to retain skills and reduce the national 'brain drain' problem where students achieve knowledge but leave because they cannot find an avenue of career progression where they are located, creating a knowledge void at the national level. (For details, see Section 5.2.3.)
- Mutual reinforcement of public and private partnership initiatives and opportunities, Bonaire already has a strong public-private dialogue. However, this could be improved by providing strategic direction for private enterprises affording them the confidence to invest in Blue commercial development. (For details, see Section 5.4.4.)
- Implementation of the Green Ports Initiative with port reception facilities to provide 'green shipping fuels', the Green Ports EU funded programme. The maritime sector has confirmed its commitment to switching from oil-based fuels to green fuels by 2050, the Cruise Industry committed to change by 2030. (For details, see Section 5.2.2.)

Blue Coastal Tourism

- Following the drafting of an OCT-wide Blue Tourism Strategy (as detailed in chapter 7.1), Bonaire could benefit from the development of a specific Bonaire Blue Tourism Strategy, which could be created together with neighbouring OCTs. The strategy should, in particular:
 - Take into account the developed 'OCT Blue Tourism Standards and Audit Scheme', which aims to promote OCT tourism initiatives.
 - Develop an indicator system for the sustainable management at destination level and develop coastal and maritime tourism dedicated indicators. These should be linked to the OCT Blue Tourism Standards and Audit Scheme.
 - The development of a feasibility study to explore Coastal Tourism Diversification Opportunities – particularly in relation to the shift from mass and cruise tourism.
 - Programmes for the provision of Sustainable management training for the hospitality sector providers.
- Funding applications (particularly in the field of EU Blue Tourism) created in partnership with other islands at the regional level. This can be done through the BGOs detailed in Chapter 6.1.
- Capacity Building in natural resource areas; two main issues have been identified: (i) some areas suffer from a lack of technical knowledge, whilst others (ii) have a significant shortage of manpower at local level and in parts of the administration.
- Tourism sector reforming through the development of the Bonaire Blue Tourism Cluster.
- Continued implementation of the Legal 'Blue Economy' framework, which is the current Bonaire working document.

Blue Energy

- To enter in a cooperation agreement with Aruba and Curaçao to be part of a pilot project for Offshore wind energy and/or Wave and /or OTEC, with marine storage and marine green hydrogen production
- In the context of the further development of the BES clusters, the undertaking of a mapping of the key Bonaire stakeholders of the BES blue energy cluster subsector. This would enable easier communication and networking within the cluster.

Food Security

- Monitoring for potential implementation in Bonaire of salt-water agriculture, as well as low water input agriculture (e.g. hydroponics)
- Feasibility study to the potential economic return for Bonaire of Aquaculture and Mariculture – Sector also involving the production of plants (algae and or seaweeds)
- Feasibility study into opportunities of the aquaculture market, in cooperation with Aruba and Curaçao to maximise economic returns
- Increased Government support to protect and increase (re-seed) areas of coral and mangrove, which are the natural, biological protections against sea incursion and storm surge, and breeding and nursery grounds for marine animals and fish.
- In the context of the further development of the BES clusters, the undertaking of a mapping of the Blue food security key stakeholders to enable the development of the Bonaire's Blue food cluster subsector. This would enable easier communication and networking within the cluster.

- Development of local capacity and incentives to retain local qualified skills. This can be done through the identification of blue scientific and socio-economic career pathways that can contribute to planning and attract inward investment opportunities.
- Prioritise intra-regional cooperation developed within a strategic framework that is beneficial to all OCTs involved, aimed at attracting substantial funding. This can be done through the BGOs detailed in Chapter 6.1.

7.2.3 Curaçao

Blue Maritime

- Improving maritime enforcement, primarily through two main sub-recommendations (detailed below). This recommendation falls within the remit of the OCTA-level recommendation of developing a study on the Requirement of OCT BES Enforcement Protocols to reinforce the sustainable development of BES operations, and discourage unlawful practices, under subchapter 5.3 Strategic Priority Three - Reinforcement of the natural ocean environment, social and economic interface, and is common to most OCTs.
 - Establish maritime enforcement capabilities to protect the entirety of Blue Economy Sectors, including maritime, tourism, fisheries, blue energy. Given the increasing escalation of Illegal, Unauthorised and Unreported fishing (IUU), it will be critical for Curaçao and other OCTs to increase maritime enforcement capacity, not only to send out a strong signal for those who would attempt to steal national resources, but also to protect valuable flora and fauna. This increased enforcement resource could be self-sufficient, as fines imposed on criminals would provide an income applying the 'polluter pays' approach.
 - Instigating better communication with Associated EU Member State with regards to Maritime Enforcement Protocols. OCT representatives interviewed recognised the need for better maritime governance, the government sector applying more emphasis than the private sector. This is particularly relevant in the context of the rise in piracy, illegal dumping of toxic waste at sea and illegal unregulated and unreported fishing. However, the expert investigations noted that the 'maritime' oversight for all OCTs remains with France, The Netherlands, and Denmark. This recommendation is further detailed at OCTA level under subchapter 5.3 Strategic Priority Three - Reinforcement of the natural ocean environment, social and economic interface, and is common to most OCTs.
- Establish administrative capacity to host one of the Blue Growth Observatories (BGOs) and ensure its work is linked with that of the Regional UN- IMO official representative. BGOs are one of the flagship initiatives recommended in the Study and are further discussed in chapters 5.4 and 6.1. BGOs will provide all OCTs a BES high value knowledge powerhouse and implementation platform to inform and guide OCTs in all aspects of the BES, and more importantly information specific for their OCT.
- Maritime, Marine and BES Planning should be developed at national level. This is explained in further detail in chapter 5.3 – Strategic Priority Three. The main subsequent recommendations are:
 - Prepare and implement the Curaçao Maritime spatial plan. These must be drawn up by maritime experts and must ensure that human activities in marine areas are organised in order to ensure ecological, economic and social objectives are attained (Section 6.3).
 - Development of a Maritime-BES Strategy at national level. These are valuable for ensuring an integrated development approach of the two fields, as well as guiding investors and stakeholders.
- Increase efforts in submitting applications for new Horizon Europe Projects, particularly through joint projects with other OCTs or in the OCTA framework. These include the Flagship Projects proposed in Chapter 6.1.

- Curaçao has demonstrated that they are receiving increasing container throughput, considering that containerisation is one of the largest shipping market sectors, it is recommended that Curaçao optimise port facilities to increase container diversification, inclusive of transit loads
- Develop Curaçao maritime (BES) cluster to enable full economic realisation. This will require the outputs of the study set out in the main report (Section 5.1.1.) the OCT Blue Economy Sector Expansion Study, (i) identifying and clarifying the key contributing OCTs government departments and private industries; (ii) the linkages between them, (iii) a methodology for enabling BES critical mass and (iv) a template for initiating focused and targeted communication and promotion of the BES
- Increase of Curaçao BES skills capacity and access to education, skills and supporting infrastructure. This can be done through the implementation of Blue Innovation Centres to assist Start Up Companies and the development of Blue Techno Parks. These noted by the experts as critical for OCTs as Blue Innovation, Incubation, Entrepreneurial centres and Blue Techno Parks will significantly increase the Human Capital of BES and ensure the future continuity of young people developing the necessary skills at the national level. In addition, these centres will help countries to retain skills and reduce the national 'brain drain' problem where students achieve knowledge but leave because they cannot find an avenue of career progression where they are located, creating a knowledge void at the national level. (For details, see Section 5.2.3.)
- Mutual reinforcement of public and private partnership initiatives and opportunities, Curaçao already has a strong public-private dialogue. However, this could be improved by providing strategic direction for private enterprises affording them the confidence to invest in Blue commercial development. (For details, see Section 5.4.4.)
- Implementation of the Green Ports Initiative with port reception facilities to provide 'green shipping fuels', the Green Ports EU funded programme. The maritime sector has confirmed its commitment to switching from oil-based fuels to green fuels by 2050, the Cruise Industry committed to change by 2030. (For details, see Section 5.2.2.)

Blue Tourism

- Following the drafting of an OCT-wide Blue Tourism Strategy (as detailed in chapter 7.1), Curaçao could benefit from the development of a specific Curaçao Blue Tourism Strategy, which could be created together with neighbouring OCTs. The strategy should, in particular:
 - Take into account the developed 'OCT Blue Tourism Standards and Audit Scheme', which aims to promote OCT tourism initiatives.
 - Develop an indicator system for the sustainable management at destination level and develop coastal and maritime tourism dedicated indicators. These should be linked to the OCT Blue Tourism Standards and Audit Scheme.
 - The development of a feasibility study to explore Coastal Tourism Diversification Opportunities – particularly in relation to the shift from mass and cruise tourism.
 - Programmes for the provision of Sustainable management training for the hospitality sector providers.
- Funding applications (particularly in the field of EU Blue Tourism) created in partnership with other islands at the regional level. This can be done through the BGOs detailed in Chapter 6.1.
- Capacity Building in natural resource areas; two main issues have been identified: (i) some areas suffer from a lack of technical knowledge, whilst others (ii) have a significant shortage of manpower at local level and in parts of the administration.
- Tourism sector reforming through the development of the Curaçao Blue Tourism Cluster.

Blue Energy

- Because of ocean similarities between many OCTs, it is recommended that a cooperation plan with other OCTs is developed in order to progress a study that will result in a common agreed program for the development and implementation of marine energy resources
- To enter in a cooperation agreement with Aruba and Bonaire to be part of a pilot project for Offshore wind energy and/or Wave and /or OTEC, with marine storage and marine green hydrogen production.
- Capacity Building: there is a lack of technical knowledge in natural resource areas. It is recommended that this be remedied by the development of Curacao-level initiatives to attract talent and knowledge, as well as through cooperation with neighbouring OCTs and the pooling of resources.
- The National Export Strategy identifies technology, in particular digital solutions, to strengthen and link all economic activity in Curaçao.
- In the context of the further development of the BES clusters, the undertaking of a mapping of the key Curaçao stakeholders of the BES blue energy cluster subsector. This would enable easier communication and networking within the cluster.

Food Security

- Conduct a comprehensive resource inventory, as basis for guiding future policy on agriculture and ocean exploitation
- Increased Government support to protect and increase (re-seed) areas of coral and mangrove, which are the natural, biological protections against sea incursion and storm surge, and breeding and nursery grounds for marine animals and fish
- Strategic provision of support to engage in investment tailored financial facilities (for example, seasonal credits) to local growers and fishers, who are targeting the local market
- Feasibility study into opportunities of the aquaculture market, in cooperation with Aruba and Bonaire to maximise economic returns
- Development of local capacity and incentives to retain local qualified skills. This can be done through the identification of blue scientific and socio-economic career pathways that can contribute to planning and attract inward investment opportunities
- Prioritise intra-regional cooperation within a strategic framework that is beneficial to all OCTs involved, aimed at attracting substantial funding. This can be done through the BGOs detailed in Chapter 6.1.
- In the context of the further development of the BES clusters, the undertaking of a mapping of the Blue food security key stakeholders to enable the development of the Curaçao Blue food cluster subsector. This would enable easier communication and networking within the cluster.

7.2.4 French Polynesia

Blue Maritime

- Optimisation of French Polynesia port facilities to increase BES diversification, such as research vessels and blue energy maritime requirements, as well as investment in port reception facilities to embrace new shipping fuels.

- Develop French Polynesia full maritime (BES) cluster to enable full economic realisation. This will require the outputs of the study set out in the main report (Section 5.1.1.) – the OCT Blue Economy Sector Expansion Study, (i) identifying and clarifying the key contributing OCTs government departments and private industries; (ii) the linkages between them, (iii) a methodology for enabling BES critical mass and (iv) a template for initiating focused and targeted communication and promotion of the BES.
- Improving maritime enforcement, primarily through two main sub-recommendations (detailed below). This recommendation falls within the remit of the OCTA-level recommendation of developing a study on the Requirement of OCT BES Enforcement Protocols to reinforce the sustainable development of BES operations, and discourage unlawful practices, under subchapter 5.3 Strategic Priority Three - Reinforcement of the natural ocean environment, social and economic interface, and is common to most OCTs.
 - Establish maritime enforcement capabilities to protect the entirety of Blue Economy Sectors, including maritime, tourism, fisheries, blue energy. Given the increasing escalation of Illegal, Unauthorised and Unreported fishing (IUU), it will be critical for French Polynesia and other OCTs to increase maritime enforcement capacity, not only to send out a strong signal for those who would attempt to steal national resources, but also to protect valuable flora and fauna. This increased enforcement resource could be self-sufficient, as fines imposed on criminals would provide an income applying the 'polluter pays' approach.
 - Instigating better communication with Associated EU Member State with regards to Maritime Enforcement Protocols. OCT representatives interviewed recognised the need for better maritime governance, the government sector applying more emphasis than the private sector. This is particularly relevant in the context of the rise in piracy, illegal dumping of toxic waste at sea and illegal unregulated and unreported fishing. However, the expert investigations noted that the 'maritime' oversight for all OCTs remains with France, The Netherlands, and Denmark. This recommendation is further detailed at OCTA level under subchapter 5.3 Strategic Priority Three - Reinforcement of the natural ocean environment, social and economic interface, and is common to most OCTs.
- Support for the Blue Growth Observatories (BGOs) to provide French Polynesia a professional resource for application into funding programmes and investment programmes. BGOs are one of the flagship initiatives recommended in the Study and are further discussed in chapters 5.4 and 6.1. BGOs will provide all OCTs a BES high value knowledge powerhouse and implementation platform to inform and guide OCTs in all aspects of the BES, and more importantly information specific for their OCT.
- Maritime, Marine and BES Planning should be developed at national level. This is explained in further detail in chapter 5.3 – Strategic Priority Three. The main subsequent recommendations are:
 - Prepare and implement the French Polynesia Maritime spatial plan. These must be drawn up by maritime experts and must ensure that human activities in marine areas are organised in order to ensure ecological, economic and social objectives are attained (Section 6.3).
 - Development of a Maritime-BES Strategy at national level. These are valuable for ensuring an integrated development approach of the two fields, as well as guiding investors and stakeholders.
- Increase efforts in submitting applications for new Horizon Europe Projects, particularly through joint projects with other OCTs or in the OCTA framework. These include the Flagship Projects proposed in Chapter 6.1.
- Increase of French Polynesia BES skills capacity and access to education, skills and supporting infrastructure. This can be done through the implementation of Blue Innovation Centres to assist Start Up Companies and the development of Blue Techno Parks. These are noted by the experts as critical for OCTs as Blue Innovation, Incubation, Entrepreneurial centres and Blue Techno Parks will

significantly increase the Human Capital of BES and ensure the future continuity of young people developing the necessary skills at the national level. In addition, these centres will help countries to retain skills and reduce the national 'brain drain' problem where students achieve knowledge but leave because they cannot find an avenue of career progression where they are located, creating a knowledge void at the national level. (For details, see Section 5.2.3.)

- Mutual reinforcement of public and private partnership initiatives and opportunities, French Polynesia already has a strong public-private dialogue. However, this could be improved by providing strategic direction for private enterprises affording them the confidence to invest in Blue commercial development. (For details, see Section 5.4.4.)
- Implementation of the Green Ports Initiative with port reception facilities to provide 'green shipping fuels', the Green Ports EU funded programme. The maritime sector has confirmed its commitment to switching from oil-based fuels to green fuels by 2050, the Cruise Industry committed to change by 2030. (For details, see Section 5.2.2.)
- Developing and extending the remit of the Associated EU Member State (France) regional maritime enforcement actions to include initiatives specific for French Polynesia. For example reporting protocols where there is a suspicion of the lawfulness of a fishing activity, that information should be relayed to French Polynesia maritime police or similar so that enforcement action may be taken when the suspect vessel reaches a French Polynesia port.

Blue Tourism

- Following the drafting of an OCT-wide Blue Tourism Strategy (as detailed in chapter 7.1), French Polynesia could benefit from the development of a specific French Polynesia Blue Tourism Strategy, which could be created together with neighbouring OCTs. The strategy should, in particular:
 - Take into account the developed 'OCT Blue Tourism Standards and Audit Scheme', which aims to promote OCT tourism initiatives.
 - Develop an indicator system for the sustainable management at destination level and develop coastal and maritime tourism dedicated indicators. These should be linked to the OCT Blue Tourism Standards and Audit Scheme.
 - The development of a feasibility study to explore Coastal Tourism Diversification Opportunities – particularly in relation to the shift from mass and cruise tourism.
 - Programmes for the provision of Sustainable management training for the hospitality sector providers.
- French Polynesia Funding applications (particularly in the field of EU Blue Tourism) created in partnership with other islands at the regional level. This can be done through the BGOs detailed in Chapter 6.1.
- Capacity Building in natural resource areas; two main issues have been identified: (i) some areas suffer from a lack of technical knowledge, whilst others (ii) have a significant shortage of manpower at local level and in parts of the administration.
- Tourism sector reforming through the development of the French Polynesia Blue Tourism Cluster.
- Increased French Polynesia investment into blue tourism transport modes, such as air, train and road transport.

Blue Energy

- Because of ocean similarities between many OCTs, it is recommended that a French Polynesia develop a plan in cooperation with other OCTs in order to progress a study that will result in a common agreed program for the development and implementation of marine energy resources.
- Integrated pilot project for Offshore floating wind energy and/or wave energy converters and/or OTEC, associated with marine storage and marine green hydrogen production.
- In the context of the further development of the BES clusters, the undertaking of a mapping of the key French Polynesia stakeholders of the BES blue energy cluster subsector. This would enable easier communication and networking within the cluster.

Food Security

- Further French Polynesia investment to capitalise on the aquaculture BES sub-sector.
- Investment in restructuring and organisation of artisanal fishing on the lagoons (mainly in the Tuomoto Archipelago)
- Develop and implement a Sustainability scheme of French Polynesia blue guarantees for all fish products produced within the country.
- Increase in fish processing capacity – particularly with regard to refrigeration.
- Maintain existing pollution responses to ensure clean aquaculture
- Redevelopment of Port Pêcheur at Pape’ete to expand the long-line fishing fleet that operates in the French Polynesia EEZ, aimed at increasing economic contribution
- Drafting of a Feasibility study of investment potential of food storage for resilience during climatic disruption (e.g. drying of traditional crops)
- Prioritise intra-regional cooperation within a strategic framework that is beneficial to all OCTs involved, aimed at attracting substantial funding. This can be done through the BGOs detailed in Chapter 6.1.
- Increase French Polynesia socio-economic research of the livelihoods systems in the different communities, aimed at creating a Monitoring and Evaluation baseline, to monitor changes (and the impacts of government intervention)
- In the context of the further development of the BES clusters, the undertaking of a mapping of the Blue food security key stakeholders to enable the development of the French Polynesia Blue food cluster subsector. This would enable easier communication and networking within the cluster.

7.2.5 French Southern and Antarctic Lands (TAAF)

Blue Maritime

- Mutual reinforcement of public and private partnership initiatives and opportunities. TAAF has a strong public-private dialogue. However, this could be improved by providing strategic direction for private enterprises affording them the confidence to invest in Blue commercial development. (For details, see Section 5.4.4.)
- Implementation of the Green Ports Initiative with port reception facilities to provide ‘green shipping fuels’, the Green Ports EU funded programme. The maritime sector has confirmed its commitment to switching from oil-based fuels to green fuels by 2050, the Cruise Industry committed to change by 2030. (For details, see Section 5.2.2.)

- Development of a port diversification plan, particularly in order to anticipate the increased tourism and food product demands.
- Create the TAAF Maritime BES Cluster in association where possible with other neighbouring islands to enable full economic realisation. This will require the outputs of the study set out in the main report (Section 5.1.1.) the OCT Blue Economy Sector Expansion Study, (i) identifying and clarifying the key contributing OCTs government departments and private industries; (ii) the linkages between them, (iii) a methodology for enabling BES critical mass and (iv) a template for initiating focused and targeted communication and promotion of the BES
- Support for the Blue Growth Observatories (BGOs) to provide TAAF a professional resource for application into funding programmes and investment programmes. BGOs are one of the flagship initiatives recommended in the Study and are further discussed in chapters 5.4 and 6.1. BGOs will provide all OCTs a BES high value knowledge powerhouse and implementation platform to inform and guide OCTs in all aspects of the BES, and more importantly information specific for their OCT.
- Maritime, Marine and BES Planning should be developed at national level. This is explained in further detail in chapter 5.3 – Strategic Priority Three. The main subsequent recommendations are:
 - Prepare and implement the French Southern and Antarctic Lands Maritime spatial plan. These must be drawn up by maritime experts and must ensure that human activities in marine areas are organised in order to ensure ecological, economic and social objectives are attained (Section 6.3).
 - Development of a Maritime-BES Strategy at national level. These are valuable for ensuring an integrated development approach of the two fields, as well as guiding investors and stakeholders.
- Increase efforts in submitting applications for new Horizon Europe Projects, particularly through joint projects with other OCTs or in the OCTA framework. These include the Flagship Projects proposed in Chapter 6.1.

Blue Tourism

- Following the drafting of an OCT-wide Blue Tourism Strategy (as detailed in chapter 7.1), TAAF could benefit from the development of a specific TAAF Blue Tourism Strategy. The strategy should, in particular:
 - Take into account the developed 'OCT Blue Tourism Standards and Audit Scheme', which aims to promote OCT tourism initiatives.
 - Develop an indicator system for the sustainable management at destination level and develop coastal and maritime tourism dedicated indicators. These should be linked to the OCT Blue Tourism Standards and Audit Scheme.
 - The development of a feasibility study to explore Coastal Tourism Diversification Opportunities – particularly in relation to the shift from mass and cruise tourism.
 - Programmes for the provision of Sustainable management training for the hospitality sector providers.
- Funding applications (particularly in the field of EU Blue Tourism) created in partnership with other islands at the regional level. This can be done through the BGOs detailed in Chapter 6.1.
- Capacity Building in natural resource areas; two main issues have been identified: (i) some areas suffer from a lack of technical knowledge, whilst others (ii) have a significant shortage of manpower at local level and in parts of the administration.

- Due to fragility of the Antarctic climate and biodiversity, introduce Blue Tourism Licence for TAAF visitors; similar to permits put in place for climbing peaks in the Himalayas (such as the Mount Everest Permit).

Blue Energy

- Because of ocean similarities between many OCTs, it is recommended that a cooperation plan with other OCTs is developed in order to progress a study that will result in a common agreed program for the development and implementation of marine energy resources
- TAAF could propose zones for small pilot equipment testing – especially wave energy converters and/or wind equipment, associated with marine storage and marine green hydrogen production. TAAF's target would be triple: (1) to provide electricity at a modest level (2) to develop rustic model(s) for equipment with autonomous O&M and (3) to test this model(s) in controlled extreme conditions. This could be financed and supported by EU funds, highlighting services for remote zones and climate change impacted territories
- In the context of the further development of the BES clusters, the undertaking of a mapping of the key TAAF potential stakeholders of the BES blue energy cluster subsector. This would enable easier communication and networking within the cluster.

Food Security

- TAAF feasibility study of the economic provision for application of indoor hydroponic techniques, to grow plants with minimal soil and minimal water, using local resources and eliminating waste, currently being researched by the University of Aberystwyth (Wales) and the British Antarctic Survey (Crop Production in Remote and Extreme Locations
<https://www.sciencedirect.com/science/article/abs/pii/S2211912418300257>)
- Identification of Blue food security key stakeholders to enable the development of the TAAF Blue food cluster subsector

7.2.6 Greenland

Blue Maritime

- Improving Greenland maritime enforcement, primarily through two main sub-recommendations (detailed below). This recommendation falls within the remit of the OCTA-level recommendation of developing a study on the Requirement of OCT BES Enforcement Protocols to reinforce the sustainable development of BES operations, and discourage unlawful practices, under subchapter 5.3 Strategic Priority Three - Reinforcement of the natural ocean environment, social and economic interface, and is common to most OCTs.
 - Establish maritime enforcement capabilities to protect the entirety of Blue Economy Sectors, including maritime, tourism, fisheries, blue energy. Given the increasing escalation of Illegal, Unauthorised and Unreported fishing (IUU), it will be critical for Greenland and other OCTs to increase maritime enforcement capacity, not only to send out a strong signal for those who would attempt to steal national resources, but also to protect valuable flora and fauna. This increased enforcement resource could be self-sufficient, as fines imposed on criminals would provide an income applying the 'polluter pays' approach.

- Instigating better communication with Associated EU Member State with regards to Maritime Enforcement Protocols. OCT representatives interviewed recognised the need for better maritime governance, the government sector applying more emphasis than the private sector. This is particularly relevant in the context of the rise in piracy, illegal dumping of toxic waste at sea and illegal unregulated and unreported fishing. However, the expert investigations noted that the 'maritime' oversight for all OCTs remains with France, The Netherlands, and Denmark. This recommendation is further detailed at OCTA level under subchapter 5.3 Strategic Priority Three - Reinforcement of the natural ocean environment, social and economic interface, and is common to most OCTs.
- Support for the Blue Growth Observatories (BGOs) to provide Greenland a professional resource for single or combined application into funding programmes and investment programmes. BGOs are one of the flagship initiatives recommended in the Study and are further discussed in chapters 5.4 and 6.1. BGOs will provide all OCTs a BES high value knowledge powerhouse and implementation platform to inform and guide OCTs in all aspects of the BES, and more importantly information specific for their OCT.
- Maritime, Marine and BES Planning should be developed at national level. This is explained in further detail in chapter 5.3 – Strategic Priority Three. The main subsequent recommendations are:
 - Prepare and implement the Greenland Maritime spatial plan. These must be drawn up by maritime experts and must ensure that human activities in marine areas are organised in order to ensure ecological, economic and social objectives are attained (Section 6.3).
 - Development of a Maritime-BES Strategy at national level. These are valuable for ensuring an integrated development approach of the two fields, as well as guiding investors and stakeholders.
- Increase efforts in submitting applications for new Horizon Europe Projects, particularly through joint projects with other OCTs or in the OCTA framework. These include the Flagship Projects proposed in Chapter 6.1.
- Operationalise a two-way communication with the Danish Maritime Cluster with a focus on the BES industries to gain support for the initiation and development of the Greenland BES Maritime Cluster
- Greenland has demonstrated that they are receiving increasing container throughput, considering that containerisation is one of the largest shipping market sectors, it is recommended that Greenland optimise port facilities to increase container diversification, inclusive of transit loads.
- Optimisation of Greenland port facilities to increase BES diversification, such as research vessels and blue energy maritime requirements as well as investment in port reception facilities to embrace new shipping fuels
- Develop the Greenland BES maritime cluster and subsectors to enable full economic realisation. This will require the outputs of the study set out in the main report (Section 5.1.1.) the OCT Blue Economy Sector Expansion Study, (i) identifying and clarifying the key contributing OCTs government departments and private industries; (ii) the linkages between them, (iii) a methodology for enabling BES critical mass and (iv) a template for initiating focused and targeted communication and promotion of the BES
- Increase of Greenland's BES skills capacity and access to education, skills and supporting infrastructure. This can be done through the implementation of Blue Innovation Centres to assist Start Up Companies and the development of Blue Techno Parks. These are noted by the experts as critical for OCTs as Blue Innovation, Incubation, Entrepreneurial centres and Blue Techno Parks will significantly increase the Human Capital of BES and ensure the future continuity of young people developing the necessary skills at the national level. In addition, these centres will help countries to retain skills and

reduce the national 'brain drain' problem where students achieve knowledge but leave because they cannot find an avenue of career progression where they are located, creating a knowledge void at the national level. (For details, see Section 5.2.3.)

- Mutual reinforcement of public and private partnership initiatives and opportunities, Greenland has a strong public-private dialogue. However, this could be improved by providing strategic direction for private enterprises affording them the confidence to invest in Blue commercial development. (For details, see Section 5.4.4.)
- Implementation of the Green Ports Initiative with port reception facilities to provide 'green shipping fuels', the Green Ports EU funded programme. The maritime sector has confirmed its commitment to switching from oil-based fuels to green fuels by 2050, the Cruise Industry committed to change by 2030. (For details, see Section 5.2.2.)

Coastal Tourism

- Following the drafting of an OCT-wide Blue Tourism Strategy (as detailed in chapter 7.1), Greenland could benefit from the development of a specific Greenland Blue Tourism Strategy. The strategy should, in particular:
 - Take into account the developed 'OCT Blue Tourism Standards and Audit Scheme', which aims to promote OCT tourism initiatives.
 - Develop an indicator system for the sustainable management at destination level and develop coastal and maritime tourism dedicated indicators. These should be linked to the OCT Blue Tourism Standards and Audit Scheme.
 - The development of a feasibility study to explore Coastal Tourism Diversification Opportunities – particularly in relation to the shift from mass and cruise tourism.
 - Programmes for the provision of Sustainable management training for the hospitality sector providers.
- Funding applications (particularly in the field of EU Blue Tourism) created in partnership with other islands at the regional level. This can be done through the BGOs detailed in Chapter 6.1.
- Capacity Building in natural resource areas; two main issues have been identified: (i) some areas suffer from a lack of technical knowledge, whilst others (ii) have a significant shortage of manpower at local level and in parts of the administration.
- Lessons to be learnt from Iceland, in particular to the mass tourism market. The mass-tourism business model is currently at a 'locked horns' juncture with regards to long term sustainability because it creates extensive environmental burdens, including congestion, nature conservation, and problems in processing solid waste and water. As a business model, therefore, it will eventually limit the potential for adding value to a nation and communities.
- Create the Greenland Blue Tourism Cluster, sub sector of the BES Maritime Sector
- Development of a Feasibility study on Blue Tourism access to transportation infrastructure. This is particularly relevant in regards of developing a needs and cost-benefit analysis.

Blue Energy

- Because of ocean similarities between many OCTs, it is recommended that a cooperation plan with other states and OCTs is developed in order to progress a study that will result in a common agreed program for the development and implementation of marine energy resources

- Greenland may lead a call for pilot project mixing a combination of marine energies (wind, current or wave) with hydrogen production, storage, and supply station for cargo boats. The first projects being at very high investment costs they would have to be highly supported through European programs.
- Regarding marine energy, it is recommended to go directly to combination systems and not to remain at the level of smaller pilots.
- Mining is experiencing a renaissance in Greenland, as climate change opens new possibilities for exploration and exploitation.
- In the context of the further development of the BES clusters, the undertaking of a mapping of the key Greenland stakeholders of the BES blue energy cluster subsector. This would enable easier communication and networking within the cluster.

Food Security

- Research is still required into marine life populations, fish migrations and basic oceanography of the Greenland EEZ. It should be the basis for sustainable planning, not only of the renewable natural resources, but also of the long-term advisability of mineral exploitation.
- Greenland fisheries enforcement gap analysis and protocols study; in partnership with Associated EU Member State to identify where gaps exist within the provision of Danish maritime oversight and the requirements of Greenland to protect its fisheries
- In the context of the further development of the BES clusters, the undertaking of a mapping of the Blue food security key stakeholders to enable the development of the Greenland Blue food cluster subsector. This would enable easier communication and networking within the cluster.
- To develop the capacity and infrastructure provision systems for the Greenland Inuit Fisheries Sector, supported by the Ministries of Fisheries and Agriculture, in order to increase the Greenland Blue Fisheries Sector
- To develop the Greenland food control quality assurance protocol and trademarks in order to enable the Greenland fisheries sector to trade equally within the EU trade space and beyond
- To assist the Greenland Fisheries community to develop a Greenland marketing campaign
- To develop a Greenland Fisheries Innovation and Techno Park, which would include industrial processing infrastructure aimed at increasing critical mass for the fisheries sector
- To create and promote the Greenland fisheries products through a systematic and targeted campaign using a clear and precise made/produced in 'Greenland Product message'.

7.2.7 New Caledonia

Blue Maritime

- Establish administrative capacity for New Caledonia to host one of the three OCT Blue Growth Observatories (BGOs). This is because New Caledonia already has a Maritime Cluster, which currently has a focus on the leisure sector but is highly functional. Therefore, New Caledonia already has a 'cluster' structure from which to build on and has already established communications with the French Cluster. BGOs are one of the flagship initiatives recommended in the Study and are further discussed in chapters 5.4 and 6.1. BGOs will provide all OCTs a BES high value knowledge powerhouse and implementation platform to inform and guide OCTs in all aspects of the BES, and more importantly information specific for their OCT.

- Improving New Caledonia maritime enforcement, primarily through two main sub-recommendations (detailed below). This recommendation falls within the remit of the OCTA-level recommendation of developing a study on the Requirement of OCT BES Enforcement Protocols to reinforce the sustainable development of BES operations, and discourage unlawful practices, under subchapter 5.3 Strategic Priority Three - Reinforcement of the natural ocean environment, social and economic interface, and is common to most OCTs.
 - Establish maritime enforcement capabilities to protect the entirety of Blue Economy Sectors, including maritime, tourism, fisheries, blue energy. Given the increasing escalation of Illegal, Unauthorised and Unreported fishing (IUU), it will be critical for New Caledonia and other OCTs to increase maritime enforcement capacity, not only to send out a strong signal for those who would attempt to steal national resources, but also to protect valuable flora and fauna. This increased enforcement resource could be self-sufficient, as fines imposed on criminals would provide an income, applying the 'polluter pays' approach.
 - Instigating better communication with the New Caledonia Associated EU Member State (France) with regards to Maritime Enforcement Protocols. OCT representatives interviewed recognised the need for better maritime governance, the government sector applying more emphasis than the private sector. This is particularly relevant in the context of the rise in piracy, illegal dumping of toxic waste at sea and illegal unregulated and unreported fishing. However, the expert investigations noted that the 'maritime' oversight for all OCTs remains with France, The Netherlands, and Denmark. This recommendation is further detailed at OCTA level under subchapter 5.3 Strategic Priority Three - Reinforcement of the natural ocean environment, social and economic interface, and is common to most OCTs.
- Maritime, Marine and BES Planning should be developed at national level. This is explained in further detail in chapter 5.3 – Strategic Priority Three. The main subsequent recommendations are:
 - Prepare and implement the New Caledonia Maritime spatial plan. These must be drawn up by maritime experts and must ensure that human activities in marine areas are organised in order to ensure ecological, economic and social objectives are attained (Section 6.3).
 - Development of a Maritime-BES Strategy at national level. These are valuable for ensuring an integrated development approach of the two fields, as well as guiding investors and stakeholders.
- Expand the remit of the New Caledonian Maritime cluster to account for all BES sub-sectors. This will require the outputs of the study set out in the main report (Section 5.1.1.) the OCT Blue Economy Sector Expansion Study, (i) identifying and clarifying the key contributing OCTs government departments and private industries; (ii) the linkages between them, (iii) a methodology for enabling BES critical mass and (iv) a template for initiating focused and targeted communication and promotion of the BES
- Increase efforts in submitting applications for new Horizon Europe Projects, particularly through joint projects with other OCTs or in the OCTA framework. These include the Flagship Projects proposed in Chapter 6.1.
- Increase of New Caledonia BES skills capacity and access to education, skills and supporting infrastructure. This can be done through the implementation of Blue Innovation Centres to assist Start Up Companies and the development of Blue Techno Parks. These noted by the experts as critical for OCTs as Blue Innovation, Incubation, Entrepreneurial centres and Blue Techno Parks will significantly increase the Human Capital of BES and ensure the future continuity of young people developing the necessary skills at the national level. In addition, these centres will help countries to retain skills and reduce the national 'brain drain' problem where students achieve knowledge but leave because they cannot find an avenue of career progression where they are located, creating a knowledge void at the national level. (For details, see Section 5.2.3.)

- Mutual reinforcement of public and private partnership initiatives and opportunities, New Caledonia already has a strong public-private dialogue. However, this could be improved by providing strategic direction for private enterprises affording them the confidence to invest in Blue commercial development. (For details, see Section 5.4.4.)
- Implementation of the Green Ports Initiative with port reception facilities to provide 'green shipping fuels', the Green Ports EU funded programme. The maritime sector has confirmed its commitment to switching from oil-based fuels to green fuels by 2050, the Cruise Industry committed to change by 2030. (For details, see Section 5.2.2.)
- Optimisation of New Caledonia port facilities to increase BES diversification, such as research vessels and blue energy maritime requirements as well as investment in port reception facilities to embrace new shipping fuels
- Development of the New Caledonia Blue Economy Strategy, although the OCTA Blue Economy Roadmap provides the 'meat on the bone' for all OCTs and promotes specific action to generate the economic advantages provided by the Blue Economy, in order for it to develop at the OCT National level, it is important for each OCT to develop a blue economy strategy of its own. This will communicate effectively to potential investors and funding bodies (such as the EU) that New Caledonia is fully committed to developing its BES sector. The main report recommendations suggest a cost-effective method of achieving such a strategy quickly and efficiently. (See section 5.4 Strong Blue Economy Policy)

Coastal Tourism

- Following the drafting of an OCT-wide Blue Tourism Strategy (as detailed in chapter 7.1), New Caledonia could benefit from the development of a specific New Caledonia Blue Tourism Strategy, which could be created together with neighbouring OCTs. The strategy should, in particular:
 - Take into account the developed 'OCT Blue Tourism Standards and Audit Scheme', which aims to promote OCT tourism initiatives.
 - Develop an indicator system for the sustainable management at destination level and develop coastal and maritime tourism dedicated indicators. These should be linked to the OCT Blue Tourism Standards and Audit Scheme.
 - The development of a feasibility study to explore Coastal Tourism Diversification Opportunities – particularly in relation to the shift from mass and cruise tourism.
 - Programmes for the provision of Sustainable management training for the hospitality sector providers.
- New Caledonia Funding applications (particularly in the field of EU Blue Tourism) created in partnership with other islands at the regional level. This can be done through the BGOs detailed in Chapter 6.1.
- Capacity Building in natural resource areas; two main issues have been identified: (i) some areas suffer from a lack of technical knowledge, whilst others (ii) have a significant shortage of manpower at local level and in parts of the administration.
- The development of a Feasibility study on the economic impacts of increasing diversification of the New Caledonia tourism product and the new accessible markets to it.

Blue Energy

- Because of ocean similarities between many OCTs, it is recommended that a cooperation plan with other OCTs is developed in order to progress a study that will result in a common agreed program for the development and implementation of marine energy resources

- To implement a regulatory framework allowing and giving the rules for IPPs, incl. for hydrogen production and electricity storage
- In the context of the further development of the BES clusters, the undertaking of a mapping of the key New Caledonia stakeholders of the BES blue energy cluster subsector. This would enable easier communication and networking within the cluster.

Food Security

- The drafting of a Feasibility study on the development of New Caledonia's aquaculture sub-sector, particularly regarding seahorses, lobsters, coquille Saint Jacques, and certain seaweeds. The Study should also focus on marketing and distribution aspects.
- Development of local capacity and development of incentives to retain local qualified skills This can be done through the identification of blue scientific and socio-economic career pathways that can contribute to planning and attract inward investment opportunities
- Prioritise intra-regional cooperation within a strategic framework that is beneficial to all OCTs involved, aimed at attracting substantial funding. This can be done through the BGOs detailed in Chapter 6.1.
- Increased Government support to protect and increase (re-seed) areas of coral and mangrove, which are the natural, biological protections against sea incursion and storm surge, and breeding and nursery grounds for marine animals and fish
- In the context of the further development of the BES clusters, the undertaking of a mapping of the Blue food security key stakeholders to enable the development of the New Caledonia Blue food cluster subsector. This would enable easier communication and networking within the cluster.

7.2.8 Saba

Blue Maritime

- Development of either a Saba, or contribution to a regional maritime (BES) cluster to enable full economic realisation. This will require the outputs of the study set out in the main report (Section 5.1.1.) the OCT Blue Economy Sector Expansion Study, (i) identifying and clarifying the key contributing OCTs government departments and private industries; (ii) the linkages between them, (iii) a methodology for enabling BES critical mass and (iv) a template for initiating focused and targeted communication and promotion of the BES
- Support for the Blue Growth Observatories (BGOs) to provide Saba a professional resource for application into funding programmes and investment programmes. BGOs are one of the flagship initiatives recommended in the Study and are further discussed in chapters 5.4 and 6.1. BGOs will provide all OCTs a BES high value knowledge powerhouse and implementation platform to inform and guide OCTs in all aspects of the BES, and more importantly information specific for their OCT.
- Maritime, Marine and BES Planning should be developed at national level. This is explained in further detail in chapter 5.3 – Strategic Priority Three. The main subsequent recommendations are:
 - Prepare and implement the Saba Maritime spatial plan. These must be drawn up by maritime experts and must ensure that human activities in marine areas are organised in order to ensure ecological, economic and social objectives are attained. (Section 6.3).
 - Development of a Maritime-BES Strategy at national level. These are valuable for ensuring an integrated development approach of the two fields, as well as guiding investors and stakeholders.

- Increase of BES skills capacity at the local level in collaboration with other OCTs in the region. This can be done with the support of the Blue Growth Observatories (BGOs).
- Mutual reinforcement of Saba's public and private partnership initiatives and opportunities. This could be improved by providing strategic direction for private enterprises affording them the confidence to invest in Blue commercial development. (For details, see Section 5.4.4.)
- Implementation of the Green Ports Initiative with port reception facilities to provide 'green shipping fuels', the Green Ports EU funded programme. The maritime sector has confirmed its commitment to switching from oil-based fuels to green fuels by 2050, the Cruise Industry committed to change by 2030. (For details, see Section 5.2.2.)

Blue Tourism

- Following the drafting of an OCT-wide Blue Tourism Strategy (as detailed in chapter 7.1), Saba could benefit from the development of a specific Saba Blue Tourism Strategy, which could be created together with neighbouring OCTs. The strategy should, in particular:
 - Take into account the developed 'OCT Blue Tourism Standards and Audit Scheme', which aims to promote OCT tourism initiatives.
 - Develop an indicator system for the sustainable management at destination level and develop coastal and maritime tourism dedicated indicators. These should be linked to the OCT Blue Tourism Standards and Audit Scheme.
 - The development of a feasibility study to explore Coastal Tourism Diversification Opportunities – particularly in relation to the shift from mass and cruise tourism.
 - Programmes for the provision of Sustainable management training for the hospitality sector providers.
- Funding applications (particularly in the field of EU Blue Tourism) created in partnership with other islands at the regional level. This can be done through the BGOs detailed in Chapter 6.1.
- Capacity Building in natural resource areas; two main issues have been identified: (i) some areas suffer from a lack of technical knowledge, whilst others (ii) have a significant shortage of manpower at local level and in parts of the administration.
- Increase the Marine Protected Area size and investment in natural capital. This will provide benefits for tourism, biodiversity and food security.

Blue Energy

- Because of ocean similarities between many OCTs, it is recommended that a cooperation plan with other OCTs is developed in order to progress a study that will result in a common agreed program for the development and implementation of marine energy resources
- Enter in a cooperation agreement with other neighbouring islands to be part of a pilot project for Offshore wind energy and/or OTEC, with marine storage and marine green hydrogen production

Food Security

- Invest in Fish Attracting Devices (FADS) to attract and concentrate pelagic species, to reduce fishing pressure on the sensitive reef areas.
- Feasibility study to the potential economic return for Saba of Aquaculture and Mariculture – Sector also involving the production of plants (algae and or seaweeds)

- Development of local capacity and incentives to retain local qualified skills This can be done through the identification of blue scientific and socio-economic career pathways that can contribute to planning and attract inward investment opportunities.
- Prioritise intra-regional cooperation within a strategic framework that is beneficial to all OCTs involved, aimed at attracting substantial funding. This can be done through the BGOs detailed in Chapter 6.1.
- Increased Government support to protect and increase (re-seed) areas of coral and mangrove, which are the natural, biological protections against sea incursion and storm surge, and breeding and nursery grounds for marine animals and fish.
- In the context of the further development of the BES clusters, the undertaking of a mapping of the Blue food security key stakeholders to enable the development of the Saba Blue food cluster subsector. This would enable easier communication and networking within the cluster.

7.2.9 Saint Barthélemy

Blue Maritime

- Improving Saint Barthélemy maritime enforcement, primarily through two main sub-recommendations (detailed below). This recommendation falls within the remit of the OCTA-level recommendation of developing a study on the Requirement of OCT BES Enforcement Protocols to reinforce the sustainable development of BES operations, and discourage unlawful practices, under subchapter 5.3 Strategic Priority Three - Reinforcement of the natural ocean environment, social and economic interface, and is common to most OCTs.
 - Establish maritime enforcement capabilities to protect the entirety of Blue Economy Sectors, including maritime, tourism, fisheries, blue energy. Given the increasing escalation of Illegal, Unauthorised and Unreported fishing (IUU), it will be critical for Saint Barthélemy and other OCTs to increase maritime enforcement capacity, not only to send out a strong signal for those who would attempt to steal national resources, but also to protect valuable flora and fauna. This increased enforcement resource could be self-sufficient, as fines imposed on criminals would provide an income applying the 'polluter pays' approach.
 - Instigating better communication with Associated EU Member State with regards to Maritime Enforcement Protocols. OCT representatives interviewed recognised the need for better maritime governance, the government sector applying more emphasis than the private sector. This is particularly relevant in the context of the rise in piracy, illegal dumping of toxic waste at sea and illegal unregulated and unreported fishing. However, the expert investigations noted that the 'maritime' oversight for all OCTs remains with France, The Netherlands, and Denmark. This recommendation is further detailed at OCTA level under subchapter 5.3 Strategic Priority Three - Reinforcement of the natural ocean environment, social and economic interface, and is common to most OCTs.
- Support for the Blue Growth Observatories (BGOs) to provide Saint Barthélemy a professional resource for application into funding programmes and investment programmes. BGOs are one of the flagship initiatives recommended in the Study and are further discussed in chapters 5.4 and 6.1. BGOs will provide all OCTs a BES high value knowledge powerhouse and implementation platform to inform and guide OCTs in all aspects of the BES, and more importantly information specific for their OCT.
- Maritime, Marine and BES Planning should be developed at national level. This is explained in further detail in chapter 5.3 – Strategic Priority Three. The main subsequent recommendations are:
 - Prepare and implement the Saint Barthélemy Maritime spatial plan. These must be drawn up by maritime experts and must ensure that human activities in marine areas are organised in order to ensure ecological, economic and social objectives are attained (Section 6.3).

- Development of a Maritime-BES Strategy at national level. These are valuable for ensuring an integrated development approach of the two fields, as well as guiding investors and stakeholders.
- Creation of the Saint Barthélemy Maritime (BES) Cluster to enable full economic realisation. This will require the outputs of the study set out in the main report (Section 5.1.1.) the OCT Blue Economy Sector Expansion Study, (i) identifying and clarifying the key contributing OCTs government departments and private industries; (ii) the linkages between them, (iii) a methodology for enabling BES critical mass and (iv) a template for initiating focused and targeted communication and promotion of the BES
- Saint Barthélemy has demonstrated that they have the capacity in ports to expand and should optimise port facilities to increase BES diversification, such as research vessels and blue energy maritime requirements as well as investment in port reception facilities to embrace new shipping fuels
- Increase of Saint Barthélemy BES skills capacity and access to education, skills and supporting infrastructure. This can be done through the implementation of Blue Innovation Centres to assist Start Up Companies and the development of Blue Techno Parks. These are noted by the experts as critical for OCTs as Blue Innovation, Incubation, Entrepreneurial centres and Blue Techno Parks will significantly increase the Human Capital of BES and ensure the future continuity of young people developing the necessary skills at the national level. In addition, these centres will help countries to retain skills and reduce the national 'brain drain' problem where students achieve knowledge but leave because they cannot find an avenue of career progression where they are located, creating a knowledge void at the national level. (For details, see Section 5.2.3.)
- Mutual reinforcement of public and private partnership initiatives and opportunities, Saint Barthélemy has a strong public-private dialogue. However, this could be improved by providing strategic direction for private enterprises affording them the confidence to invest in Blue commercial development. (For details, see Section 5.4.4.)
- Implementation of the Green Ports Initiative with port reception facilities to provide 'green shipping fuels', the Green Ports EU funded programme. The maritime sector has confirmed its commitment to switching from oil-based fuels to green fuels by 2050, the Cruise Industry committed to change by 2030. (For details, see Section 5.2.2.)
- Closer cooperation with neighbouring islands and OCTs in order to increase the use of economies of scale

Blue Tourism

- Following the drafting of an OCT-wide Blue Tourism Strategy (as detailed in chapter 7.1), Saint Barthélemy could benefit from the development of a specific Saint Barthélemy Blue Tourism Strategy, which could be created together with neighbouring OCTs. The strategy should, in particular:
 - Take into account the developed 'OCT Blue Tourism Standards and Audit Scheme', which aims to promote OCT tourism initiatives.
 - Develop an indicator system for the sustainable management at destination level and develop coastal and maritime tourism dedicated indicators. These should be linked to the OCT Blue Tourism Standards and Audit Scheme.
 - The development of a feasibility study to explore Coastal Tourism Diversification Opportunities – particularly in relation to the shift from mass and cruise tourism. This should particularly focus on the development of the niche eco-based tourism model.
 - Programmes for the provision of Sustainable management training for the hospitality sector providers.

- Funding applications (particularly in the field of EU Blue Tourism) created in partnership with other islands at the regional level. This can be done through the BGOs detailed in Chapter 6.1.
- Capacity Building in natural resource areas; two main issues have been identified: (i) some areas suffer from a lack of technical knowledge, whilst others (ii) have a significant shortage of manpower at local level and in parts of the administration.
- Increase data availability, during the study it was difficult to find data relating to Saint Barthélemy from the primary data providers. (World Bank, United Nations and other similar institutions). This requires attention as it is vital that potential investors have easy access to reliable data.
- Identify Saint Barthélemy Blue tourism stakeholders to enable the development of the BES Blue Tourism cluster subsector.

Blue Energy

- Because of ocean similarities between many OCTs, it is recommended that a cooperation plan with other OCTs is developed in order to progress a study that will result in a common agreed program for the development and implementation of marine energy resources
- To enter in a cooperation agreement with other neighbouring OCTs to be part of a pilot project for Offshore wind energy and/or OTEC, with marine storage and marine green hydrogen production.
- In the context of the further development of the BES clusters, the undertaking of a mapping of the key Saint Barthélemy stakeholders of the BES blue energy cluster subsector. This would enable easier communication and networking within the cluster.

Food Security

- Investigate and, where possible, replicate the experiences of other islands in horticulture in areas with limited land availability.
- Contact should be maintained not only with French CIRAD, but also with other regional research entities, such as The Caribbean Agricultural Research and Development Institute (CARDI), which carries out research and development for agriculture, and aims to strengthen regional collaboration for agricultural research in the Caribbean region from its base in Trinidad.
- To research viable food growing enterprises. For example, new crop varieties and practices have been made available in the Caribbean under the Caribbean sustainable Banana project.
- Cooperate with CARDI in upgrading of facilities for intra-regional agricultural trade and transport and the evaluation of investment opportunities, as well as the provision of market intelligence
- Development of local capacity and incentives to retain local qualified skills. This can be done through the identification of blue scientific and socio-economic career pathways that can contribute to planning and attract inward investment opportunities.
- Prioritise intra-regional cooperation within a strategic framework that is beneficial to all OCTs involved, aimed at attracting substantial funding. This can be done through the BGOs detailed in Chapter 6.1.
- Increased Government support to protect and increase (re-seed) areas of coral and mangrove, which are the natural, biological protections against sea incursion and storm surge, and breeding and nursery grounds for marine animals and fish.
- In the context of the further development of the BES clusters, the undertaking of a mapping of the Blue food security key stakeholders to enable the development of Saint Barthélemy's Blue food cluster subsector. This would enable easier communication and networking within the cluster.

7.2.10 Saint-Pierre-et-Miquelon

Blue Maritime

- Improving maritime enforcement, primarily through two main sub-recommendations (detailed below). This recommendation falls within the remit of the OCTA-level recommendation of developing a study on the Requirement of OCT BES Enforcement Protocols to reinforce the sustainable development of BES operations, and discourage unlawful practices, under subchapter 5.3 Strategic Priority Three - Reinforcement of the natural ocean environment, social and economic interface, and is common to most OCTs.
 - Establish Saint-Pierre-et-Miquelon maritime enforcement capabilities to protect the entirety of Blue Economy Sectors, including maritime, tourism, fisheries, blue energy. Given the increasing escalation of Illegal, Unauthorised and Unreported fishing (IUU), it will be critical for Saint-Pierre-et-Miquelon and other OCTs to increase maritime enforcement capacity, not only to send out a strong signal for those who would attempt to steal national resources, but also to protect valuable flora and fauna. This increased enforcement resource could be self-sufficient, as fines imposed on criminals would provide an income applying the 'polluter pays' approach.
 - Instigating better communication with Associated EU Member State with regards to Maritime Enforcement Protocols. OCT representatives interviewed recognised the need for better maritime governance, the government sector applying more emphasis than the private sector. This is particularly relevant in the context of the rise in piracy, illegal dumping of toxic waste at sea and illegal unregulated and unreported fishing. However, the expert investigations noted that the 'maritime' oversight for all OCTs remains with France, The Netherlands, and Denmark. This recommendation is further detailed at OCTA level under subchapter 5.3 Strategic Priority Three - Reinforcement of the natural ocean environment, social and economic interface, and is common to most OCTs.
- Support for the Blue Growth Observatories (BGOs) to provide Saint-Pierre-et-Miquelon a professional resource for application into funding programmes and investment programmes. BGOs are one of the flagship initiatives recommended in the Study and are further discussed in chapters 5.4 and 6.1. BGOs will provide all OCTs a BES high value knowledge powerhouse and implementation platform to inform and guide OCTs in all aspects of the BES, and more importantly information specific for their OCT.
- Maritime, Marine and BES Planning should be developed at national level. This is explained in further detail in chapter 5.3 – Strategic Priority Three. The main subsequent recommendations are:
 - Prepare and implement the Saint-Pierre-et-Miquelon Maritime spatial plan. These must be drawn up by maritime experts and must ensure that human activities in marine areas are organised in order to ensure ecological, economic and social objectives are attained (Section 6.3).
 - Development of a Maritime-BES Strategy at national level. These are valuable for ensuring an integrated development approach of the two fields, as well as guiding investors and stakeholders.
- Development of the Saint-Pierre-et-Miquelon maritime BES cluster to attain critical mass. This will require the outputs of the study set out in the main report (Section 5.1.1.) the OCT Blue Economy Sector Expansion Study, (i) identifying and clarifying the key contributing OCTs government departments and private industries; (ii) the linkages between them, (iii) a methodology for enabling BES critical mass and (iv) a template for initiating focused and targeted communication and promotion of the BES
- Increased Port investment Saint-Pierre-et-Miquelon has demonstrated that they have the capacity to expand their ports and are recommended optimise port facilities to increase BES diversification, such

as research vessels and blue energy maritime requirements as well as investment in port reception facilities to embrace new shipping fuels

- Feasibility study Saint-Pierre-et-Miquelon ports diversification plan aimed at increasing growth in exports, as well as considering the diversification of economic sectors in general.
- Saint-Pierre-et-Miquelon to prioritise intra-regional cooperation within a strategic framework that is beneficial to all OCTs involved, aimed at attracting substantial funding. This can be done through the BGOs detailed in Chapter 6.1.
- Increase partnership with the Agence Française de Développement (AFD), with a focus on the development of the Blue Maritime Sector.
- Increase of Saint-Pierre-et-Miquelon BES skills capacity and access to education, skills and supporting infrastructure. This can be done through the implementation of Blue Innovation Centres to assist Start Up Companies and the development of Blue Techno Parks. These noted by the experts as critical for OCTs as Blue Innovation, Incubation, Entrepreneurial centres and Blue Techno Parks will significantly increase the Human Capital of BES and ensure the future continuity of young people developing the necessary skills at the national level. In addition, these centres will help countries to retain skills and reduce the national 'brain drain' problem where students achieve knowledge but leave because they cannot find an avenue of career progression where they are located, creating a knowledge void at the national level. (For details, see Section 5.2.3.)
- Mutual reinforcement of public and private partnership initiatives and opportunities, Saint-Pierre-et-Miquelon has a strong public-private dialogue. However, this could be improved by providing strategic direction for private enterprises affording them the confidence to invest in Blue commercial development. (For details, see Section 5.4.4.)
- Implementation of the Green Ports Initiative with port reception facilities to provide 'green shipping fuels', the Green Ports EU funded programme. The maritime sector has confirmed its commitment to switching from oil-based fuels to green fuels by 2050, the Cruise Industry committed to change by 2030. (For details, see Section 5.2.2.)
- To implement a capacity building program at the Saint-Pierre-et-Miquelon Marine observatory and marine technical school of Saint-Pierre. This is because the Marine Observatory and Marine Technical School of Saint-Pierre is an existing marine-maritime infrastructure and therefore expanding its capacity will speed up the implementation of knowledge driven skills to encourage wider participation with a focus on local skill development.

Blue Tourism

- Increase the Saint-Pierre-et-Miquelon Blue Tourism partnership programs with the Agence Française de Développement (AFD).
- Following the drafting of an OCT-wide Blue Tourism Strategy (as detailed in chapter 7.1), Saint-Pierre-et-Miquelon could benefit from the development of a specific Saint-Pierre-et-Miquelon Blue Tourism Strategy, which could be created together with neighbouring OCTs. The strategy should, in particular:
 - Take into account the developed 'OCT Blue Tourism Standards and Audit Scheme', which aims to promote OCT tourism initiatives.
 - Develop an indicator system for the sustainable management at destination level and develop coastal and maritime tourism dedicated indicators. These should be linked to the OCT Blue Tourism Standards and Audit Scheme.
 - The development of a feasibility study to explore Coastal Tourism Diversification Opportunities – particularly in relation to the shift from mass and cruise tourism.

- Programmes for the provision of Sustainable management training for the hospitality sector providers.
- Funding applications (particularly in the field of EU Blue Tourism) created in partnership with other islands at the regional level. This can be done through the BGOs detailed in Chapter 6.1.
- Capacity Building in natural resource areas; two main issues have been identified: (i) some areas suffer from a lack of technical knowledge, whilst others (ii) have a significant shortage of manpower at local level and in parts of the administration.
- Identification of Saint-Pierre-et-Miquelon Blue tourism key stakeholder to enable the development of the Blue tourism cluster subsector

Blue Energy

- Because of ocean similarities between many OCTs, it is recommended that a cooperation plan with other OCTs is developed in order to progress a study that will result in a common agreed program for the development and implementation of marine energy resources
- Pilots projects on marine energy should be opened through calls for innovation project proposal
- In the context of the further development of the BES clusters, the undertaking of a mapping of the key Saint-Pierre-et-Miquelon stakeholders of the BES blue energy cluster subsector. This would enable easier communication and networking within the cluster.

Food Security

- The introduction of incentives for many small family producers (part-time, if necessary) to start enterprises, in order to spread both risks and benefits. The same principle is applicable to fishing, growing, or simple processing.
- Development of a Study of the natural resource base and of likely long-term changes due to climate change, as well as the establishment of a resource monitoring system
- In the context of the further development of the BES clusters, the undertaking of a mapping of the Blue food security key stakeholders to enable the development of the Saint-Pierre-et-Miquelon Blue food cluster subsector. This would enable easier communication and networking within the cluster.
- Lack of data on fisheries population numbers and ecology of some species of growing importance is an increasing issue. Investment and action in this area is recommended. This is also linked to a need to increase the monitoring of Saint-Pierre-et-Miquelon fishing fleet to ensure sustainability.
- Monitoring of Saint-Pierre-et-Miquelon fishing fleet to ensure sustainability
- Examination of the potential financial contribution of aquaculture to support and extend the blue food economic subsector

7.2.11 Sint Eustatius

Blue Maritime

- Improving Sint Eustatius maritime enforcement, primarily through two main sub-recommendations (detailed below). This recommendation falls within the remit of the OCTA-level recommendation of developing a study on the Requirement of OCT BES Enforcement Protocols to reinforce the sustainable development of BES operations, and discourage unlawful practices, under subchapter 5.3 Strategic Priority Three - Reinforcement of the natural ocean environment, social and economic interface, and is common to most OCTs.

- Establish maritime enforcement capabilities to protect the entirety of Blue Economy Sectors, including maritime, tourism, fisheries, blue energy. Given the increasing escalation of Illegal, Unauthorised and Unreported fishing (IUU), it will be critical for Sint Eustatius and other OCTs to increase maritime enforcement capacity, not only to send out a strong signal for those who would attempt to steal national resources, but also to protect valuable flora and fauna. This increased enforcement resource could be self-sufficient, as fines imposed on criminals would provide an income applying the 'polluter pays' approach.
- Instigating better communication with Associated EU Member State with regards to Maritime Enforcement Protocols. OCT representatives interviewed recognised the need for better maritime governance, the government sector applying more emphasis than the private sector. This is particularly relevant in the context of the rise in piracy, illegal dumping of toxic waste at sea and illegal unregulated and unreported fishing. However, the expert investigations noted that the 'maritime' oversight for all OCTs remains with France, The Netherlands, and Denmark. This recommendation is further detailed at OCTA level under subchapter 5.3 Strategic Priority Three - Reinforcement of the natural ocean environment, social and economic interface, and is common to most OCTs.
- Support for the Blue Growth Observatories (BGOs) to provide Sint Eustatius a professional resource for application into funding programmes and investment programmes. BGOs are one of the flagship initiatives recommended in the Study and are further discussed in chapters 5.4 and 6.1. BGOs will provide all OCTs a BES high value knowledge powerhouse and implementation platform to inform and guide OCTs in all aspects of the BES, and more importantly information specific for their OCT.
- Maritime, Marine and BES Planning should be developed at national level. This is explained in further detail in chapter 5.3 – Strategic Priority Three. The main subsequent recommendations are:
 - Prepare and implement the Saint Eustatius Maritime spatial plan. These must be drawn up by maritime experts and must ensure that human activities in marine areas are organised in order to ensure ecological, economic and social objectives are attained (Section 6.3).
 - Development of a Maritime-BES Strategy at national level. These are valuable for ensuring an integrated development approach of the two fields, as well as guiding investors and stakeholders.
- Creation of the Sint Eustatius Maritime (BES) Cluster to enable full economic realisation. This will require the outputs of the study set out in the main report (Section 5.1.1.) the OCT Blue Economy Sector Expansion Study, (i) identifying and clarifying the key contributing OCTs government departments and private industries; (ii) the linkages between them, (iii) a methodology for enabling BES critical mass and (iv) a template for initiating focused and targeted communication and promotion of the BES
- Development of a long-term port diversification plan, Sint Eustatius has demonstrated that their ports have the capacity to expand and it is recommended that they optimise port facilities to increase BES diversification, such as research vessels and blue energy maritime requirements as well as investment in port reception facilities to embrace new shipping fuels
- Increase of Sint Eustatius BES skills capacity and access to education, skills and supporting infrastructure. This can be done through the implementation of Blue Innovation Centres to assist Start Up Companies and the development of Blue Techno Parks. These noted by the experts as critical for OCTs as Blue Innovation, Incubation, Entrepreneurial centres and Blue Techno Parks will significantly increase the Human Capital of BES and ensure the future continuity of young people developing the necessary skills at the national level. In addition, these centres will help countries to retain skills and reduce the national 'brain drain' problem where students achieve knowledge but leave because they cannot find an avenue of career progression where they are located, creating a knowledge void at the national level. (For details, see Section 5.2.3.)

- Mutual reinforcement of public and private partnership initiatives and opportunities, Sint Eustatius has a strong public-private dialogue. However, this could be improved by providing strategic direction for private enterprises affording them the confidence to invest in Blue commercial development. (For details, see Section 5.4.4.)
- Implementation of the Green Ports Initiative with port reception facilities to provide 'green shipping fuels', the Green Ports EU funded programme. The maritime sector has confirmed its commitment to switching from oil-based fuels to green fuels by 2050, the Cruise Industry committed to change by 2030. (For details, see Section 5.2.2.)
- Closer cooperation with neighbouring islands and OCTs in order to increase the use of economies of scale

Blue Tourism

- Following the drafting of an OCT-wide Blue Tourism Strategy (as detailed in chapter 7.1), Sint Eustatius could benefit from the development of a specific Saint Eustatius Blue Tourism Strategy, which could be created together with neighbouring OCTs. The strategy should, in particular:
 - Take into account the developed 'OCT Blue Tourism Standards and Audit Scheme', which aims to promote OCT tourism initiatives.
 - Develop an indicator system for the sustainable management at destination level and develop coastal and maritime tourism dedicated indicators. These should be linked to the OCT Blue Tourism Standards and Audit Scheme.
 - The development of a feasibility study to explore Coastal Tourism Diversification Opportunities – particularly in relation to the shift from mass and cruise tourism.
 - Programmes for the provision of Sustainable management training for the hospitality sector providers.
- Funding applications (particularly in the field of EU Blue Tourism) created in partnership with other islands at the regional level. This can be done through the BGOs detailed in Chapter 6.1.
- Sint Eustatius Capacity Building in natural resource areas; two main issues have been identified: (i) some areas suffer from a lack of technical knowledge, whilst others (ii) have a significant shortage of manpower at local level and in parts of the administration.
- Increase availability of Sint Eustatius tourism data. It is important that potential investors can easily access data from reliable sources such as the World Bank, the International Tourism Association and the United Nations. Whilst conducting the Study, it became evident that this requires attention.
- Identification of Sint Eustatius Blue tourism key stakeholder to enable the development of the Blue tourism cluster subsector

Blue Energy

- Because of ocean similarities between many OCTs, it is recommended that a cooperation plan with other OCTs is developed in order to progress a study that will result in a common agreed program for the development and implementation of marine energy resources
- Enter in a cooperation agreement with other neighbouring islands to be part of a pilot project for Offshore wind energy and/or OTEC, with marine storage and marine green hydrogen production.
- In the context of the further development of the BES clusters, the undertaking of a mapping of the key Sint Eustatius stakeholders of the BES blue energy cluster subsector. This would enable easier communication and networking within the cluster.

Food Security

- Increase investments in Fish attracting devices (FADS) to attract pelagic species
- Feasibility study to ascertain cost benefit of Sint Eustatius investment in Aquaculture and Mariculture - involving the production of plants (algae and or seaweeds) or herbivores potentially shows more financial potential than mass culture of expensive protein-feed consuming fishes and crustaceans. ("Food from the Oceans", Wageningen)
- Focus on salt-water agriculture, as well as low water input agriculture (e.g. hydroponics), as on Bonaire.
- Development of local capacity and incentives to retain local qualified skills. This can be done through the identification of blue scientific and socio-economic career pathways that can contribute to planning and attract inward investment opportunities.
- Prioritise intra-regional cooperation within a strategic framework that is beneficial to all OCTs involved, aimed at attracting substantial funding. This can be done through the BGOs detailed in Chapter 6.1.
- Increased Government support to protect and increase (re-seed) areas of coral and mangrove, which are the natural, biological protections against sea incursion and storm surge, and breeding and nursery grounds for marine animals and fish.
- In the context of the further development of the Sint Eustatius BES clusters, the undertaking of a mapping of the Blue food security key stakeholders to enable the development of the Sint Eustatius Blue food cluster subsector. This would enable easier communication and networking within the cluster.

7.2.12 Sint Maarten

Blue Maritime

- Improving Sint Maarten maritime enforcement, primarily through two main sub-recommendations (detailed below). This recommendation falls within the remit of the OCTA-level recommendation of developing a study on the Requirement of OCT BES Enforcement Protocols to reinforce the sustainable development of BES operations, and discourage unlawful practices, under subchapter 5.3 Strategic Priority Three - Reinforcement of the natural ocean environment, social and economic interface, and is common to most OCTs.
 - Establish maritime enforcement capabilities to protect the entirety of Blue Economy Sectors, including maritime, tourism, fisheries, blue energy. Given the increasing escalation of Illegal, Unauthorised and Unreported fishing (IUU), it will be critical for Sint Maarten and other OCTs to increase maritime enforcement capacity, not only to send out a strong signal for those who would attempt to steal national resources, but also to protect valuable flora and fauna. This increased enforcement resource could be self-sufficient, as fines imposed on criminals would provide an income applying the 'polluter pays' approach.
 - Instigating better communication with Associated EU Member State with regards to Maritime Enforcement Protocols. OCT representatives interviewed recognised the need for better maritime governance, the government sector applying more emphasis than the private sector. This is particularly relevant in the context of the rise in piracy, illegal dumping of toxic waste at sea and illegal unregulated and unreported fishing. However, the expert investigations noted that the 'maritime' oversight for all OCTs remains with France, The Netherlands, and Denmark. This recommendation is further detailed at OCTA level under subchapter 5.3 Strategic Priority Three - Reinforcement of the natural ocean environment, social and economic interface, and is common to most OCTs.
- Support for the Blue Growth Observatories (BGOs) to provide Sint Maarten a professional resource for application into funding programmes and investment programmes. BGOs are one of the flagship

initiatives recommended in the Study and are further discussed in chapters 5.4 and 6.1. BGOs will provide all OCTs a BES high value knowledge powerhouse and implementation platform to inform and guide OCTs in all aspects of the BES, and more importantly information specific for their OCT.

- Maritime, Marine and BES Planning should be developed at national level. This is explained in further detail in chapter 5.3 – Strategic Priority Three. The main subsequent recommendations are:
 - Prepare and implement the Sint Maarten Maritime spatial plan. These must be drawn up by maritime experts and must ensure that human activities in marine areas are organised in order to ensure ecological, economic and social objectives are attained (Section 6.3).
 - Development of a Maritime-BES Strategy at national level. These are valuable for ensuring an integrated development approach of the two fields, as well as guiding investors and stakeholders.
- Sint Maarten to receive specific focus and support to help clarify their vision of their (BES) sectors and key stakeholders. This can be done through the Blue Growth Observatories (BGOs), or through specific action at local level.
- Creation of the Sint Maarten Maritime (BES) Cluster to enable full economic realisation. This will require the outputs of the study set out in the main report (Section 5.1.1.) the OCT Blue Economy Sector Expansion Study, (i) identifying and clarifying the key contributing OCTs government departments and private industries; (ii) the linkages between them, (iii) a methodology for enabling BES critical mass and (iv) a template for initiating focused and targeted communication and promotion of the BES
- Development of a long-term port diversification plan, Sint Maarten has demonstrated that their ports have the capacity to expand and it is recommended that they optimise port facilities to increase BES diversification, such as research vessels and blue energy maritime requirements as well as investment in port reception facilities to embrace new shipping fuels
- Increase of Sint Maarten BES skills capacity and access to education, skills and supporting infrastructure. This can be done through the implementation of Blue Innovation Centres to assist Start Up Companies and the development of Blue Techno Parks. These noted by the experts as critical for OCTs as Blue Innovation, Incubation, Entrepreneurial centres and Blue Techno Parks will significantly increase the Human Capital of BES and ensure the future continuity of young people developing the necessary skills at the national level. In addition, these centres will help countries to retain skills and reduce the national 'brain drain' problem where students achieve knowledge but leave because they cannot find an avenue of career progression where they are located, creating a knowledge void at the national level. (For details, see Section 5.2.3.)
- Mutual reinforcement of public and private partnership initiatives and opportunities, Sint Maarten already has a strong public-private dialogue. However, this could be improved by providing strategic direction for private enterprises affording them the confidence to invest in Blue commercial development. (For details, see Section 5.4.4.)
- Implementation of the Green Ports Initiative with port reception facilities to provide 'green shipping fuels', the Green Ports EU funded programme. The maritime sector has confirmed its commitment to switching from oil-based fuels to green fuels by 2050, the Cruise Industry committed to change by 2030. (For details, see Section 5.2.2.)
- Increased 'blue' investment via application to blue investment platform
- Closer cooperation with neighbouring islands and OCTs in order to increase the use of economies of scale
- Expanding the remit of the Sint Maarten National Security Service to embrace additional island maritime enforcement

Blue Tourism

- Following the drafting of an OCT-wide Blue Tourism Strategy (as detailed in chapter 7.1), Sint Maarten could benefit from the development of a specific Sint Maarten Blue Tourism Strategy, which could be created together with neighbouring OCTs. The strategy should, in particular:
 - Take into account the developed 'OCT Blue Tourism Standards and Audit Scheme', which aims to promote OCT tourism initiatives.
 - Develop an indicator system for the sustainable management at destination level and develop coastal and maritime tourism dedicated indicators. These should be linked to the OCT Blue Tourism Standards and Audit Scheme.
 - The development of a feasibility study to explore Coastal Tourism Diversification Opportunities – particularly in relation to the shift from mass and cruise tourism. This should focus on the development of the niche eco-based tourism model and promote Sint Maarten as a sustainable eco-tourism destination.
 - Programmes for the provision of Sustainable management training for the hospitality sector providers.
- Sint Maarten Funding applications (particularly in the field of EU Blue Tourism) created in partnership with other islands at the regional level. This can be done through the BGOs detailed in Chapter 6.1.
- Capacity Building in natural resource areas; two main issues have been identified: (i) some areas suffer from a lack of technical knowledge, whilst others (ii) have a significant shortage of manpower at local level and in parts of the administration.
- Identification of Sint Maarten Blue tourism key stakeholder to enable the development of the Blue tourism cluster subsector
- Improve the long-term environmental sustainability of Sint Maarten tourism exploitation; (avoidance of mass tourism model) to gain competitive advantage
- Improving natural resource management, as well as increasing the sustainability and resilience of the Sint Maarten blue tourism sector
- Restoration of ecosystems, particularly Mangroves, to ensure the sustainability of natural capital a key attractor for eco/blue tourism visitors.

Blue Energy

- Because of ocean similarities between many OCTs, it is recommended that a cooperation plan with other OCTs is developed in order to progress a study that will result in a common agreed program for the development and implementation of marine energy resources
- To enter in a cooperation agreement with other neighbouring islands to be part of a pilot project for Offshore wind energy and/or OTEC, with marine storage and marine green hydrogen production.
- In the context of the further development of the BES clusters, the undertaking of a mapping of the key Sint Maarten stakeholders of the BES blue energy cluster subsector. This would enable easier communication and networking within the cluster.

Food Security

- Capacity Building in natural resource areas; two main issues have been identified: (i) some areas suffer from a lack of technical knowledge, whilst others (ii) have a significant shortage of manpower at local level and in parts of the administration.

- Conduct a Sint Maarten comprehensive resource inventory, as basis for guiding future policy on agriculture and ocean exploitation
- Provision of extension support and financial facilities to local growers and fishers, who are targeting the local market
- Development of Sint Maarten local capacity and incentives to retain local qualified skills. This can be done through the identification of blue scientific and socio-economic career pathways that can contribute to planning and attract inward investment opportunities
- Prioritise intra-regional cooperation within a strategic framework that is beneficial to all OCTs involved, aimed at attracting substantial funding. This can be done through the BGOs detailed in Chapter 6.1.
- Increased Sint Maarten Government support to protect and increase (re-seed) areas of coral and mangrove, which are the natural, biological protections against sea incursion and storm surge, and breeding and nursery grounds for marine animals and fish
- In the context of the further development of the BES clusters, the undertaking of a mapping of the Blue food security key stakeholders to enable the development of the Sint Maarten Blue food cluster subsector. This would enable easier communication and networking within the cluster.
- Protect and increase (re-seed) areas of coral and mangrove, which are the natural, biological protections against sea incursion and storm surge, and breeding and nursery grounds for marine animals and fish

7.2.13 Wallis and Futuna

Blue Maritime

- Development of the Wallis and Futuna maritime BES cluster to enable full economic realisation. This will require the outputs of the study set out in the main report (Section 5.1.1.) the OCT Blue Economy Sector Expansion Study, (i) identifying and clarifying the key contributing OCTs government departments and private industries; (ii) the linkages between them, (iii) a methodology for enabling BES critical mass and (iv) a template for initiating focused and targeted communication and promotion of the BES
- Development of a long-term port diversification plan, Wallis and Futuna has demonstrated that their ports have the capacity to expand and it is recommended that they optimise port facilities to increase BES diversification, such as research vessels and blue energy maritime requirements as well as investment in port reception facilities to embrace new shipping fuels
- Wallis and Futuna Funding applications (particularly in the field of EU Blue Tourism) with other OCTs
- Increase of Wallis and Futuna BES skills capacity and access to education, skills and supporting infrastructure. This can be done through the implementation of Blue Innovation Centres to assist Start Up Companies and the development of Blue Techno Parks. These noted by the experts as critical for OCTs as Blue Innovation, Incubation, Entrepreneurial centres and Blue Techno Parks will significantly increase the Human Capital of BES and ensure the future continuity of young people developing the necessary skills at the national level. In addition, these centres will help countries to retain skills and reduce the national 'brain drain' problem where students achieve knowledge but leave because they cannot find an avenue of career progression where they are located, creating a knowledge void at the national level. (For details, see Section 5.2.3.)
- Mutual reinforcement of public and private partnership initiatives and opportunities, Wallis and Futuna already has a strong public-private dialogue. However, this could be improved by providing strategic direction for private enterprises affording them the confidence to invest in Blue commercial development. (For details, see Section 5.4.4.)

- Implementation of the Green Ports Initiative with port reception facilities to provide 'green shipping fuels', the Green Ports EU funded programme. The maritime sector has confirmed its commitment to switching from oil-based fuels to green fuels by 2050, the Cruise Industry committed to change by 2030. (For details, see Section 5.2.2.)
- Further Port expansion of the Port of Mata-Utu for Wallis and Futuna to embrace other port activities especially related to the BES sector, such as blue energy infrastructure or research vessel berthing.
- Support for the Blue Growth Observatories (BGOs) to provide Wallis and Futuna a professional resource for application into funding programmes and investment programmes. BGOs are one of the flagship initiatives recommended in the Study and are further discussed in chapters 5.4 and 6.1. BGOs will provide all OCTs a BES high value knowledge powerhouse and implementation platform to inform and guide OCTs in all aspects of the BES, and more importantly information specific for their OCT.
- Maritime, Marine and BES Planning should be developed at national level. This is explained in further detail in chapter 5.3 – Strategic Priority Three. The main subsequent recommendations are:
 - Prepare and implement the Wallis and Futuna Maritime spatial plan. These must be drawn up by maritime experts and must ensure that human activities in marine areas are organised in order to ensure ecological, economic and social objectives are attained (Section 6.3).
 - Development of a Maritime-BES Strategy at national level. These are valuable for ensuring an integrated development approach of the two fields, as well as guiding investors and stakeholders.
- Along with New Caledonia and French Polynesia, Wallis and Futuna should develop a Study to establish where there are gaps maritime enforcement capabilities to protect the entirety of Blue Economy Sectors, including maritime, tourism, fisheries, blue energy
- Funding applications created in partnership with other islands at the regional level. This can be done through the BGOs detailed in Chapter 6.1.
- Initiate the drafting of an action plan to increase export capacity, as well as container throughput.

Blue Tourism

- Develop the work on the Pacific Ocean Ecosystem Analysis (PACIOCEA)
- Following the drafting of an OCT-wide Blue Tourism Strategy (as detailed in chapter 7.1), Wallis and Futuna could benefit from the development of a specific Wallis and Futuna Blue Tourism Strategy, which could be created together with neighbouring OCTs. The strategy should, in particular:
 - Take into account the developed 'OCT Blue Tourism Standards and Audit Scheme', which aims to promote OCT tourism initiatives.
 - Develop an indicator system for the sustainable management at destination level and develop coastal and maritime tourism dedicated indicators. These should be linked to the OCT Blue Tourism Standards and Audit Scheme.
 - The development of a feasibility study to explore Coastal Tourism Diversification Opportunities – particularly in relation to the shift from mass and cruise tourism.
 - Programmes for the provision of Sustainable management training for the hospitality sector providers.
- Funding applications (particularly in the field of EU Blue Tourism) created in partnership with other islands at the regional level. This can be done through the BGOs detailed in Chapter 6.1.
- Capacity Building in natural resource areas; two main issues have been identified: (i) some areas suffer from a lack of technical knowledge, whilst others (ii) have a significant shortage of manpower at local level and in parts of the administration.

- The Development of the Wallis and Futuna Climate-change adaptation strategy
- Identification of Wallis and Futuna Blue tourism key stakeholders to enable the development of the Blue tourism cluster subsector
- Apply for funding from the Blue tourism EU, and other Funding applications (particularly in the field of EU Blue Tourism) in cooperation with other OCTs
- Increasing Wallis and Futuna local and hospitality providers' access to education, skills and supporting infrastructure
- Investment in the Wallis and Futuna Niche Blue Tourism Sector, in particular regarding the water sports sector
- Improve the long-term environmental sustainability of Wallis and Futuna tourism exploitation – particularly through avoidance of mass tourism model, in order to gain competitive advantage

Blue Energy

- Because of ocean similarities between many OCTs, it is recommended that a cooperation plan with other OCTs is developed in order to progress a study that will result in a common agreed program for the development and implementation of marine energy resources
- To enter in a cooperation agreement with other neighbouring islands to be part of a pilot project for Offshore wind energy and/or wave energy converters and/or OTEC, associated with marine storage and marine green hydrogen production
- In the context of the further development of the BES clusters, the undertaking of a mapping of the key Wallis and Futuna potential stakeholders of the BES blue energy cluster subsector. This would enable easier communication and networking within the cluster.

Food Security

- Continue research into the EEZ – particularly regarding species enumeration and sea-bed cartography, to permit objective planning Further research into inland ecology (Wallis) and agro-forestry options are also recommended.
- Restoration of ecosystems, particularly Mangroves, to ensure the sustainability of natural capital a key attractor for eco/blue tourism visitors.
- Ensure management of Wallis and Futuna natural and biological protections against sea incursion and storm surge, as well as the management of breeding and nursery grounds for marine animals and fish.
- Increase fish processing capability, which would require the purchase of a fishing fleet and the upgrading of dock facilities in order to expand catch potential. Similarly, local pork processing should be developed in order to substitute imports of European charcuterie
- Provide appropriate training in primary production methods, as well as in processing plant management, marketing, and distribution.
- Wallis and Futuna capacity building efforts should revise structures, to ensure employment longevity of staff and more local staff at all levels, with a sustainable career vision
- In the context of the further development of the BES clusters, the undertaking of a mapping of the Blue food security key stakeholders to enable the development of the Wallis and Futuna Blue food cluster subsector. This would enable easier communication and networking within the cluster.

8 BIBLIOGRAPHY

- A. Filous, R. J. Lennox, E.E.G. Clua, A.J. Danylchuk (2019), Fisheries selectivity and annual exploitation of the principal species harvested in a data-limited artisanal fishery at a remote atoll in French Polynesia.
- A. Lindop, E. Bultel, K. Zylich and D. Zeller (2015), Reconstructing the former Netherlands Antilles marine catches from 1950 to 2010.
- A.Bergin, D.Brewster, and A.Bachhawat (2019), Ocean Horizons: Strengthening Maritime Security in Indo-Pacific Island States.
- Accord particulier entre l'etat de la Nouvelle Caledonie et le territoire des Iles Wallis et Futuna (2003)
- Accord particulier entre l'etat, la Nouvelle Caledonie et le territoire des Iles Wallis et Tutuna (2013).
- ADE (2015), Evaluation PEFA 2015 en Polynésie Française.
- Affaire Maritime Nouvelle Caledonie (2018), REPARTITION DES COMPETENCES MARITIMES EN NOUVELLE-CALEDONIE.
- Agence Calédonienne de l'Énergie(2019), La feuille de route 2019 de l'Agence Calédonienne de l'Énergie.
- Andre van Schalk (1997), Proyecto PUDRENA
- Aqualectra (2019), Maturing outside of our comfort zone.
- Aruba Marketing (2018), Fighting World Hunger with Digital Agriculture.See:
<https://blogs.arubanetworks.com/industries/fighting-world-hunger-with-digital-agriculture/>
- ASSEMBLEE TERRITORIALEDES ILES WALLIS ET FUTUNA (2019) LA STRATEGIE DE CONVERGENCE DE WALLIS ET FUTUNA.
- Assise des Outre-Mer (n.d.), Livre Bleu outre-mer.
- B. De Boer, D. Hoogerwerf, I. Kristensen, J. Post (1973), Antillean Fish guide.
- B. van Zanten, F. Laclé, S. van Duren, V. Soberon, P. van Beukering (2018), The Value Natural Capital for the TourismIndustryof Aruba.
- Blue Denmark (n.d.), Commerce Competence Cooperation.
- Blue Hale Curacao (n.d.), BLUE HALO CURAÇAO RECOMMENDATIONSFOR A SUSTAINABLE OCEAN POLICY.
- Blue Halo Curacao (2016), Economic Valuation of Curaçao's Marine Resources.
- BREA (2018), ECONOMIC CONTRIBUTION OF CRUISE TOURISM TO THE DESTINATION ECONOMIES.
- Cacima (2017), Le secteur du tourisme decroisière à Saint-Pierre-et-Miquelon.
- Caribbean Export Development agency (2007), DOING BUSINESS WITH CURAÇAO.
- Caroline Yeager (2013), The Development of the Tourism Industry in French Polynesia.

Catherine Lin (2020), HUNGER AND MALNUTRITION IN NEW CALEDONIA. See: <https://borgenproject.org/malnutrition-in-new-caledonia/#:~:text=While%20hunger%20is%20not%20an,thus%2C%20below%20the%20poverty%20line.>

CBS (2015), Curaçao Environmental Statistics Compendium 2015.

CBS (2016), Trends in the Caribbean Netherlands.

CBS (2020), Economic growth on Bonaire in 2018.

CENTRALE BANK VAN CURAÇAO EN SINT MAARTEN (2020), The Economy of Curaçao and Sint Maarten in Data and Charts Yearly Overview.

Charton et al. (2016), Fish, food security and health in Pacific Island countries and territories: a systematic literature review.

CIA WORLD FACTBOOK (2020), Saint Pierre and Miquelon Economy 2020.

CLEO PASKAL (2018), Strategic Overview of Oceania.

Cluster maritime Nouvelle Calédonie (2016), Énergies Marines Renouvelables (EMR).

Commission de régulation de l'énergie (2018), Mission de la CRE en Guadeloupe, à Saint-Martin et à Saint-Barthélemy.

Conservation International (n.d.), Stratégie pour la Biodiversité de Wallis et Futuna.

Cornerstone Economics (2020), Agriculture in Aruba: A sector ripe for the picking. See: <https://www.cornerstoneeconomics.com/post/agriculture-in-aruba-a-sector-ripe-for-the-picking>

Countries of the World (2020), Curacao Economy 2020. See: https://theodora.com/wfbcurent/curacao/curacao_economy.html.

COUNTRY NOTE ON NATIONAL FISHERIES MANAGEMENT SYSTEM – GREENLAND (n.d.)

Creocean (2019), Etude du potentiel des énergies renouvelables marines en Nouvelle Calédonie

Creocean (2019), Suivi de l'état de santé des communautés benthiques et ichtyologiques de la Réserve Naturelle de Saint-Barthélemy.

Curacao Chronicle (2018), Camelia-Römer: Government ready for innovation in agriculture. See: <https://curacaochronicle.com/main/camelia-romer-government-ready-for-innovation-in-agriculture/>

Curacao Chronicle (2018), The Venezuelan impact on Curaçao's economy. See: <https://www.curacaochronicle.com/post/main/cft-the-venezuelan-impact-on-curacaos-economy/>

Curacao Ports Authority & CİNEX (n.d.), DEVELOPMENT OPPORTUNITIES FOR WILLEMSTAD.

Curacao Ports Authority (n.d.), Waaigat Development Guidelines.

Curacao Ports Authority (n.d.), West Wharf Development Guidelines.

Curaloe (2019), Sustainability Policy and reporting 2019.

D. Debrot, S. van den Burg (2019), Food from the Oceans. Factsheet 3. Nexus interventions for small tropical islands: case study Bonaire. Technical Report · February 2019

Damien ERNST (n.d.), Harvesting wind energy in Greenland: a project for Europe and a huge step towards the building a global electrical grid.

Danish Maritime Authority (2015), Summary report on North Sea regulation and standards.

Danish Maritime Authority (2016), Employment and production in Blue Denmark 2016.

Danish Maritime Authority (2016), OPPORTUNITIES AND CHALLENGES FOR THE DANISH REALM'S MARITIME INDUSTRY IN THE ARCTIC.

DCNA nature (n.d.), POP Bonaire: Rural Development Program: 2014-2018.

De COMMISSIE INTEGRALE SOCIAAL-ECONOMISCHE AANPAK BONAIRE (1992), Uitgebracht aan het Bestuurscollege van het Eilandgebied Bonaire en de Regeringen van de Nederlandse Antillen en Nederland, volgens het Eilandsbesluit.

Delegation interministérielle à la reconstruction des îles de Saint-Barthélemy et Saint-Martin (n.d.), Report of the French government's interministerial commissioner for the reconstruction of Saint-Barthélemy and Saint-Martin.

DIRECTION DES AFFAIRES MARITIMES DE LA NOUVELLE-CALÉDONIE (2019).

Directorate of Housing, Spatial Planning and Environment VROM, Aruba (n.d.), Development of an Environmental Assessment Method for Aruba.

Dornan, M, Morgan, W, Newton Cain, T, Tarte, S (2018), What's in a term? "Green growth" and the "blue-green economy" in the Pacific islands.

DTAM (2019), Analyse territoriale éolienne de l'archipel de Saint-Pierre et Miquelon.

DTU (2011), Solar heating in Greenland Resource assessment and potential.

E.de Bruijn, M. Hugen, M. James, H. Winters (2018), Food Security on Curaçao: An Interdisciplinary Food Systems Approach on Vulnerability and the Impact of Tourism

E.M.G. Kokkermans (2007), Comparison of growth of the reef fish species *Haemulon flavolineatum* (French grunt) between seagrass beds, mangroves and the coral reef, as a test for the nursery hypothesis.

Economic Development Division Pacific Community (SPC) (2016), Air and sea transport in Wallis and Futuna: Report of a 2014 study.

ECORYS (2019), Duurzame ontwikkeling Bonaire, Sint Eustatius en Saba.

EDF (2019), Bilan Prévisionnel.

Elise Bultel and Kyrstn Zyllich (2015), Fisheries catch reconstruction of the Western Atlantic French archipelago of Saint Pierre et Miquelon, 1950-2010.

Enercal(2018), Quels potentiels d'énergies marines renouvelables (EMR) en Nouvelle-Calédonie ?

Environmental Law Institut (2016), Sustainable Fisheries & Coastal Zoning in Curaçao.

Erickson Smith (2013), Subsistence Subsiding: Eighty Years of Change in French Polynesia's Fisheries. See: https://www.sea.edu/spice_atlas/fakarava_atlas/subsistence_subsiding_eighty_years_of_change_in_french_polynesian_fisheries

ETM / OTEC / SWAC (2019), LES ENTREPRISES DU « SWAC ET DE L'ETM » S'ORGANISENT POUR LA PPE.

European Union (2010), Legal aspects of Arctic shipping.

European Union (2012), Setting out the fishing opportunities and financial contribution provided for in the Fisheries Partnership Agreement between the European Community (1) on the one hand, and the Government of Denmark and the Home Rule Government of Greenland (2), on the other hand.

European Union (2020), COUNCIL REGULATION (EU) 2020/123 of 27 January 2020.

FAO (2008), Country Profile: Food Security Indicators.

FAO/SPREP/SPC/USP (2009), CLIMATE CHANGE AND FOOD SECURITY IN THE PACIFIC.

Farrell et al. (2020), COVID-19 and Pacific food system resilience: opportunities to build a robust response.

Food and Agriculture Organization of the United Nations (2018), Fishery and Aquaculture Country Profiles Curacao.

Food and agriculture Organization of the United Nations (2020), REGIONAL ANALYSIS OF THE NATIONALLY DETERMINED CONTRIBUTIONS IN THE CARIBBEAN.

Funge-Smith S, Bennett A. (2019), A fresh look at inland fisheries and their role in food security and livelihoods.

Future Directions International (2019), Food and Water Security in New Caledonia.

G. Grimsditch, M.S. Engel, M.J.A. Vermeij (2011), Coral Reef Resilience Assessment of the Bonaire National Marine Park, Netherlands Antilles

G. Louisa (n.d.), Food (In)dependency the Curaçao case.

G. Van Werven, C.J. Jepma, W. Bakker (n.d.), Masterplan strategische ontwikkeling Bonaire 2010-2025.

Gouvernement de la Nouvelle Calédonie (2008), LISTE DES ENTREPRISES AGREES POUR LE TRANSPORT ET LES ACTIVITES NAUTIQUES A CARACTERE TOURISTIQUE EN NOUVELLE-CALEDONIE .

Gouvernement de la Nouvelle Calédonie (2010), Schéma pour la transition énergétique (STENC).

Gouvernement de la Nouvelle Calédonie (2018), Bilan énergétique Nouvelle Calédonie 2018.

Gouvernement de la Nouvelle Calédonie (n.d.), LES MARQUES EXTERIEURES DES NAVIRES DE PLAISANCE.

Gouvernement de la Nouvelle Calédonie (n.d.), SERVICE DE LA NAVIGATION ET DE LA SECURITE MARITIMES.

Government of Aruba (2011), The Green Gateway.

Government of Aruba (2015), 2020 Vision Green Deck ARUBA.

Government of Greenland (2014), Greenland's oil and mineral strategy 2014-2018.

Government of Greenland (2014), The Fifth National Report Greenland.

Government of Greenland (2017), SEKTORPLAN FOR ENERGI- OG VANDFORSYNING.

Government of Sint Maarten (2020), Draft National Development Vision 2030.

H.W.G. Meesters, D.M.E. Slijkerman, M. de Graaf, and A.O. Debrot (2010), Management plan for the natural resources of the EEZ of the Dutch Caribbean

HAUT-COMMISSARIAT DE LA REPUBLIQUEEN POLYNESIE FRANCAISE (2015), Pacific Economic Cooperation Council "PECC International Project 2015-2016 -Managing the Blue Economy -Future of Port Management and Shipping in the Asia-Pacific".

HELENE GOIRAN (2018), The Role of the French Military on Key Issues for Oceania.

HINICO & Technopolis (2016), Plan d'actions pour la transition Energetique a Saint barthelemy.

IFREMER (2019), Le Dispositif Ultramarin de L'IFREMER.

IMF (2018), KINGDOM OF THE NETHERLANDS—CURAÇAO AND SINT MAARTEN

IMF (2019), KINGDOM OF THE NETHERLANDS—CURAÇAO AND SINT MAARTEN

Intell-Echo (2016), L'Observatoire d'information économique pour la cooperation régionale entre le Canada atlantique et Saint-Pierre et Miquelon, France.

Intergre (2017), Stratégie d'adaptation au changement climatique du Territoire des îles Wallis et Futuna.

Island Studies.ca (2017), Saint-Pierre et Miquelon.

ITC (2020), Curaçao turns toward technology to build a resilient economy. See:
<https://www.intracen.org/news/Curacao-turns-toward-technology-to-build-resilient-economy/>

ITOPF (2018), A Summary of Oil Spill Response Arrangements& Resources Worldwide.

ITOPF (2018), Country & Territory Profiles.

IVM Institute for Environmental Studies (2013), The total economic value of nature on Bonaire.

J.E.Tamis & E.M. Foekema (2016), Blue carbon in the Dutch Caribbean

J.M. Cheer et al. (2018), Tourism in Pacific island countries: A status quo round-up

Jennifer Lightle (2017), Imported Food Affecting Malnutrition in French Polynesia.

Jenny Steel (2020), Coronavirus Exasperates Homelessness on St Maarten.
See:<https://caribbeannetwork.ntr.nl/2020/12/18/coronavirus-exasperates-homelessness-on-st-maarten/>

Jessica A Gephart et al. (2015), Shocks to fish production: Identification, trends, and consequences.

Johann Bell (n.d), Implications of climate change for fisheries in the tropical Pacific.

Jones. D et al. (2018), Can the optimisation of pop-up agriculture in remote communities help feed the world?

Joost Huijbregts (2016), Economic impact of tourism on St. Eustatius.

JOURNAL OFFICIEL DE LA NOUVELLE-CALEDONIE (2010).

JOURNAL OFFICIEL DE LA NOUVELLE-CALEDONIE (2020).

Kingdom of the Netherlands (2017), Report on the implementation of the Sustainable Development Goals.

L. Borst and S.A. de Haas (2005), A hydrogeological investigation of Bonaire's watersystem.

L. Jelsma, D.K. Maris, W. Hijman (2011), The Impact of Tourism on Curaçao's Economy: A Scenario Approach.

L.R. THOMAS, K.J. SIEGEL, B.OWASHI, A.J. ESTEP, T. GEDAMKE, and S.E. LESTER (n.d.), Determining Effective Fisheries Monitoring and Assessment Approaches in Data-limited Contexts: A Case Study of the Fisheries in Montserrat and Curaçao.

La conservation de Ramsar (2017), Île Europa.

La conservation de Ramsar (2018), Réserve naturelle nationale des Terres australes françaises.

Le terminal de croisières (2018), Aménagement du terminal de croisières du port de Saint-Pierre

Leach B. F., Intoh Mishiko, Smith I. W. G.(1984), Fishing, Turtle Hunting, and Mammal Exploitation at Fa'ahia, Huanine, FrenchPolynesia.

Limites Maritime.gouv (n.d.), Espace Maritime de la France A Saint Pierre et Miquelon.

Limites Maritimes.gouv (2019), Espace Maritimes de la France aux Iles Saint Martin et Saint Barthelemy.

Limites Maritimes.gouv (2019), Espace Maritimes de la France Wallis et Futuna.

Linde K. J. van Bets, Machiel A. J. Lamers & Jan P. M. van Tatenhove (2017), Governing cruise tourism at Bonaire: a networksand flows approach.

M. van der Geest & D. Slijkerman (2019), Nexus interventions for small tropical islands: case study Bonaire.

M.H.G. van Sambeek, H.G.M. Eggenkamp & M.J.M. Vissers (2000), The groundwater quality of Aruba, Bonaire and Curacao: a hydrogeochemical study.

Mangrove.org (2014), Aruba Ports Authority Reef Islands - REM Mangrove Reforestation.

Martin Breum (2018), Ready or not, Greenland is poised to see a rise in cruise ship tourism.

Matthew Dornan, Ron Duncan (2018), The Pacific islands in the twenty-first century.

MINISTÈRE DES OUTRE-MER (2014), Décret no2014-483 du 13 mai 2014 relatif aux conseils maritimes ultramarinset aux documents stratégiques de bassin maritime.

MINISTÈRE DU TOURISME, DES TRANSPORTS AÉRIENS INTERNATIONAUX, DE LA MODERNISATION DE L'ADMINISTRATION ET DE LA FONCTION PUBLIQUE (n.d.), STRATÉGIE DE DÉVELOPPEMENT TOURISTIQUE DE LA POLYNÉSIE FRANÇAISE 2015-2020.

Ministerie van Economische Zaken en Klimaat (2019), Integraal Nationaal Energie- en Klimaatplan.

Ministries of Agriculture, Nature and Food Quality, Infrastructure and Water Management and Interior and Kingdom relations of The Netherlands (2020), NATURE AND ENVIRONMENT POLICY PLAN CARIBBEAN NETHERLANDS 2020 -2030.

MINISTRIES OF VROMI and TEZVTGOVERNMENTOF SINT MAARTEN (2014),National Energy Policyfor Country Sint Maarten.

Ministry of General Affaires (2013), STRATEGIES FOR SUSTAINABLE LONG TERM ECONOMIC DEVELOPMENT IN CURACAO.

Ministry of Traffic, Transport and Planning (n.d.), St. Anna Bay & Waaiat.

NASCO (2015), Report of the Inter-sessional Meeting of the West Greenland Commission.

Nasco (2020), Management and Sampling of the St Pierre and Miquelon Salmon Fishery.

Natuurbeleidsplan Bonaire 1999 -2004.

Nic Maclellan (2017), France and the Blue Pacific.

No author (2013), Maritime Emergency Response Plan for the Dutch Caribbean.

No author (2018), Curaçao Should Adopt Fish Reproduction Zonesto Recover Reef Fish Stocks and Improve Coastal Resources

Nordregio (n.d.), GREEN GROWTH IN NORDIC REGIONS.

Nouvelle Calédonie Pacific heart (2018), Stop Over Handbook In New Caledonia.

NSP (2019), Energy Efficiency & Energy Diversification

OCTA (2015), Overseas Countries and Territories: Environmental Profiles.

OECS (2018), Aquaponics: new ways to help reduce the OECS Food Import Bill. See: <https://pressroom.oecs.org/aquaponics-new-ways-to-help-reduce-the-oecs-food-import-bill>

Organigramme des services de l'administration supérieure des Îles Wallis et Futuna (2020)

OSAC (2020), Dutch Caribbean 2020 Crime & Safety Report.

P. Verweij, A. Cormont, J. Nel, B. de Rooij, L. Jones-Walters, D. Slijkerman, K. Soma, M. van Eupen (2020), A nature inclusive vision for Bonaire in 2050.

P. Verweij, E. Meesters and D. Debrot (2015), Indicators on the status and trends of ecosystems in the Dutch Caribbean

P. Visser, E. Meesters, F. van Duy (2018), Bottom topography, groundwater discharge and cyanobacterial mats of mesophotic reefs.

Paino Vanai (2000), Status of Coral Reefs 2000 in Southeast and Central Pacific.

Parke nacional Aruba (2019), Preliminary Management Plan.

Pascal Le Floc'h and Lucie Chopot (2019), Qui veut la peau du concombre de mer?

Petit Guyeau (2018), Review of the Spatial Development Plan St. Eustatius.

Phaedra Romney (2020), Agriculture forms the basis of a systemic change that will revitalize the economy of Sint Maarten. See: <https://challenges.openideo.com/challenge/food-system-vision-prize/open-submission/nurture-the-green-pillar>.

PROGRAMMING DOCUMENT FOR THE SUSTAINABLE DEVELOPMENT OF GREENLAND (n.d.).

P-Y. Le Meur, P. Cochonat, C. David, et al. (2016), Les ressources minérales profondes en Polynésie française / Deep-sea mineral resources in French Polynesia.

Ralph Cantave (2020), Corona crisis brings agriculture back to Sint Maarten. See: <https://caribbeannetwork.ntr.nl/2020/07/21/corona-crisis-brings-agriculture-back-to-forefront-of-sint-maarten-life/>

Republique Francaise (2015), National strategy for the security of maritime areas.

Republique Francaise (2016), Appui au Préfet de Saint-Pierre et Miquelon sur les problématiques portuaires.

Republique Francaise Direction des territoires de l'Alimentation de la Mer Saint Pierre et Miquelon (2014), A French harbour at the gates fo Nother America.

Republique Francaise Direction des territoires de l'Alimentation de la Mer Saint Pierre et Miquelon (2016), VULIT : Vulnérabilité du littoral de Saint Pierre et Miquelon face aux risques côtiers.

Republique Francaise Direction des territoires de l'Alimentation de la Mer Saint Pierre et Miquelon (2018), Arrete n:559 du 28 sep 2018.

Republique Francaise Terres Australes et Antartiques Francaise (2018), La lettre des TAAF.

Republique Francaise Terres Australes et Antartiques Francaise (2019), Arrete n:2019-111 du 24 octobre 2019.

Republique Francaise Terres Australes et Antartiques Francaise (2019), Arrete n:2019-193 du 7 novembre 2019.

Republique Francaise Terres Australes et Antartiques Francaise (2019), Arrete n:2019-59 du 2 juillet 2019.

Republique Francaise Terres Australes et Antartiques Francaise (2019), Mise en œuvre du nouveau plan de gestion de pêche à la légine australedans les zones économiques exclusives (ZEE) de Crozet et de Kerguelen.

Republique Francaise Terres Australes et Antartiques Francaise (2019), Rapport sur la gestion de la pêche de légine dans les Terres australes et antarctiques françaises.

Republique Francaise Terres Australes et Antartiques Francaise (n.d.), District de Crozet.

Republique Francaise territoire des Iles Wallis et Futuna (2017), Programmation pluriannuelle de l'énergie pour les Iles Wallis et Futuna 2016-2018 / 2019-2023.

Robert Gillett (2016), Fisheries in the Economies of Pacific Island Countries and Territories.

Royal Greenland (2019), Sustainable Fisheries Policy.

S.R. Smith, W.J. van der Burg, A.O. Debrot, G. van Buurt, J.A. de Freitas (2014), Key Elements Towards a Joint Invasive Alien Species Strategy for the Dutch Caribbean.

SAAEB (2019), Suivi des espèces envahissantes et bio-salissures marines à Saint-Pierre et Miquelon Année 2019.

SAFEGE Consortium (2015), Overseas Countries and Territories: Environmental Profiles.

Saint Pierre et Miquelon Collectivite territoriale (2016), ETUDE MARKETING DE LA DESTINATION SAINT-PIERRE-ET-MIQUELON.

Saint Pierre et Miquelon Collectivite territoriale (2018), PROGRAMMATION PLURIANNUELLE DE L'ÉNERGIE Archipel de de Saint-Pierre et Miquelon Saint-Pierre et Miquelon.

Saint Pierre et Miquelon Collectivite territoriale (n.d.), Schéma de Développement Stratégique Plan d'action 2015-2020.

Sara Venusti (2017), IS IT POSSIBLE TO REDUCE THE SINT MAARTEN POVERTY RATE?.
See: <https://borgenproject.org/sint-maarten-poverty-rate/>

Scott LAGUEUX (n.d.), Curacao's inner harbour connectivity, community culture & commerce.

SCV Geelhoed, N Janinhoff, JP Verdaat, RSA van Bemmelen & M Scheidat (2013), Aerial surveys of marinemammals and other fauna around Aruba, Curaçao and Bonaire

SDG (n.d.), SintMaartenand the 2030 Agenda.

Sea-ex (n.d.), Government Contacts & Information Resources for Commercial Fishing, Seafood, Aquaculture, Marine & Oceans in Tahiti. See: <http://www.sea-ex.com/countryinfo/tahiti.htm>

Shom (2018), Espace maritime de la France En Nouvelle Calédonie.

Sonia Pollock and Catherine Puleo (2014), Renewable Energy and Ocean Thermal Energy Conversion in French Polynesia.

SPC international (n.d.) Wallis and Futuna - The pacific Community.

SPM Fragiles (n.d.), Projet d'étude sur les Algues de Saint-Pierre et Miquelon.

SPTO (2018), 2018 Annual Tourism Performance Overview.

St Maarten Agriculture (2017), The Case of the Illusive Nut – AGRICULTURE ON ST. MAARTEN. See: <https://stmaartenagriculture.com/case-illusive-nut-agriculture-st-maarten/>

St Maarten trust Fund (2020), Sint Maarten Tourism Recovery:2020-2022 Priority Action Plan.

Sustainable Fisherie Group UC Santa Barbara (2015), A Review of the Ecology and Economics of Curaçao's Marine Resources.

T. de Scisciolo(2015), The Assessment of Aruba's Shoreline Pollution: A Comparison between the South Coast and the North Coast.

TAAF (2021), LA FRANCE ÉTEND SON DOMAINE SOUS-MARIN AU LARGE DE SAINT-PAUL ET AMSTERDAM. See: <https://taaf.fr/actualite/la-france-etend-son-domaine-sous-marin-au-large-de-saint-paul-et-amsterdam/>

TAAF (2021), LA RESSOURCE HALIEUTIQUE ET L'HISTORIQUE DE LAPÊCHE À CROZET ET KERGUELEN

TAAF (2021), LUTTE CONTRE LA PÊCHE ILLICITE.

TAAF (2021), PÊCHE À LA LANGOUSTE

TAAF (2021), PÊCHE AU POISSON DES GLACES

TEEB (n.d.), Tourism value of ecosystems in Bonaire.

TEMPLATES FOR THE SIXTH NATIONAL REPORT (n.d.)

Terres Australes et Antartiques Francaise (2019), Arrete n:2020-150 du 9 decembre 2020.

The Government of Greenland and the European Commission (2104), PROGRAMMING DOCUMENT FOR THE SUSTAINABLE DEVELOPMENT OF GREENLAND 2014-2020(2014/137/EU).

The World Bank (n.d.), Sint Maarten National Recovery and Resilience PlanA Roadmap to Building Back Better.

Thierry Santa (2019), Congrès de la Nouvelle-Calédonie Jeudi 22 août 2019.

Tourism Corporation Bonaire (2017), Tourism: Synergizing people and nature for a better tomorrow.

Trading Economics (2020), New Caledonia.

Transparency International (2013), National integrity system assessment Curacao 2013.

U.S. Department of Energy (2020), Curacao Energy Snapshot.

UNCATDSTAT (2020), General PROFILE: FRENCH SOUTHERN TERRITORIES.

UNCATDSTAT (2020), General PROFILE: Greenland

UNCATDSTAT (2020), General PROFILE: Saint Pierre and Miquelon.

UNCATDSTAT (2020), MARITIME PROFILE: FRENCH SOUTHERN TERRITORIES.

UNCATDSTAT (2020), MARITIME PROFILE: Greenland.

UNCATDSTAT (2020), MARITIME PROFILE: Saint Pierre and Miquelon.

UNCATDSTAT (2020), MARITIME PROFILE: Wallis and Futuna Islands.

UNCATDSTAT(2020), General PROFILE: French Polynesia.

UNCATDSTAT(2020), General PROFILE: Wallis and Futuna Islands.

UNCATDSTAT(2020), Genreal PROFILE: New Caledonia.

UNCATDSTAT(2020), MARITIME PROFILE: BONAIRE, SINT EUSTATIUS AND SABA.

UNCATDSTAT(2020), MARITIME PROFILE: French Polynesia.

UNCATDSTAT(2020), MARITIME PROFILE: New Caledonia.

UNCATDSTAT(2020), MARITIME PROFILE: Saint Barthelemy.

UNCATDSTAT(2020), MARITIME PROFILE: SINT MAARTEN (Dutch Part).

UNDP (1980), Programme for Fisheries Development and Diversification in the Souther Netherlands Antilles: Aruba, Curacao and Bonaire

UNDP (2011), Curaçao & Sint Maarten.

UNICEF(2013), The Situation of Children and Adolescents in Sint Maarten.

United Nations (2011), AN ASSESSMENT OF THE ECONOMIC IMPACT OF CLIMATE CHANGE ON THE TOURISM SECTOR IN ARUBA.

UNITED NATIONS WORLD FOOD PROGRAMME (2020), Caribbean COVID-19 Food Security & Livelihoods Impact Survey.

UNOPS (2019), TRANSFORMING URBAN CURACAO.

US security Briefing (n.d.), Saint-Pierre and Miquelon – Introduction.

USDA foreign Agricultural service (2010), Netherlands Antilles Food and Agricultural Import Regulations and Standards -Narrative.

USDA Foreign Agricultural Service (2018), Opportunities Abound in Aruba's Retail Sector.

- V. Iese et al. (2018), Facing food security risks: The rise and rise of the sweet potato in the Pacific Islands.
- Van Wynsberge S, Andre foute t S, Gilbert A, Stein A, Remoissenet G (2013), Best Management Strategies for Sustainable Giant Clam Fishery in FrenchPolynesia Islands.
- Waitt Institute (2016), COMMUNITY CONSULTATION FINDINGS.
- Waitt Institute (2018), BEST PRACTICES FOR COASTAL DEVELOPMENT IN CURAÇ AO1Coastal Development in Curaçao:Best Practices to Minimize Adverse Impacts to Curaçao's Marine Environmen.
- Waitt Institute (2017), The State of Curaçao's Coral Reefs.
- Weimerskirch et al. (2020), Quelle est l'ampleur de la pêche illégale? Les albatros répondent.
- Williams et Al. (2005), Checklist of the shore fishes of Wallis Islands
- World Bank Group (2020), Building Aruba's Food Security During the COVID-19 Pandemic and Beyond.
- World Food Programme (n.d.), FOOD SECURITY IN VULNERABLE ISLANDS.
- Y. Le Bars, E. Faugeres, P. Menauteau (2010),L'énergie dans le développement de la Nouvelle-Calédonie.

APPENDIX A – OCT PROFILES

This section contains profiles for all OCTs. These include maps showing locations related to food security, blue energy, blue tourism, and maritime. A more detailed and interactive map is available through the links below.

OCT	Link
Aruba	https://www.google.com/maps/d/edit?mid=13S4WPVITIIWBLzqddtU0BCTEEoT02JU-&usp=sharing
Bonaire	https://www.google.com/maps/d/edit?mid=1 L9V6Zv2Tj3NKAOEI3zVEc5FIUFMA94R&usp=sharing
Curacao	https://www.google.com/maps/d/edit?mid=1DA8ACx3VpUhQ-iSk2Jtjgqt7n-GmsiRB&usp=sharing
Saba	https://www.google.com/maps/d/edit?mid=10VdnxgkbfQxxjTUW7DHmbJIYzvO6ypM&usp=sharing
Sint-Eustatius	https://www.google.com/maps/d/edit?mid=16YoxzzpJzmYEOkC_kTJyilTnuYFarYD&usp=sharing
Sint-Maarten	https://www.google.com/maps/d/edit?mid=1vua_U0aXU5EhgkMOKpz1IoWAMmOrDcS5&usp=sharing
Saint- Barthélemy	https://www.google.com/maps/d/edit?mid=1FileLH2Pvm1wrM2ziP88NRgsbH7aS5tT&usp=sharing
New Caledonia	https://www.google.com/maps/d/edit?mid=1XABVKh2I509rpeS8oRUduplSqwTvYyma&usp=sharing
French Polynesia	https://www.google.com/maps/d/edit?mid=1P8GkcrMqPuH3AqelizOiHBeMvxxXEv5_&usp=sharing
Wallis & Futuna	https://www.google.com/maps/d/viewer?mid=1UXx5b-qj2hm-bGU24t1UwpLnzqh7BG6&usp=sharing
French Southern and Antarctic Lands	https://www.google.com/maps/d/edit?mid=1M_kNSNge1TgnzaQ7ZgHJMijYXmo-asi&usp=sharing
Saint-Pierre- et-Miquelon	https://www.google.com/maps/d/edit?mid=1f_DtQOcKUmKG0cAto6xPwcfxyKNWD5e1&usp=sharing
Greenland	https://www.google.com/maps/d/edit?mid=15DF2mKh3ooZc1hElFwtMoYW1paZ-i8aa&usp=sharing

The following pages also include the larger maps as are portrayed in the individual profiles. All marked locations are described below these maps. Note that not all locations are visible since they might fall off the map.

Legend to the maps:

- Blue Tourism locations / opportunities
- Maritime locations / opportunities
- Food security locations / opportunities
- Blue energy locations / opportunities

OCT profiles explained

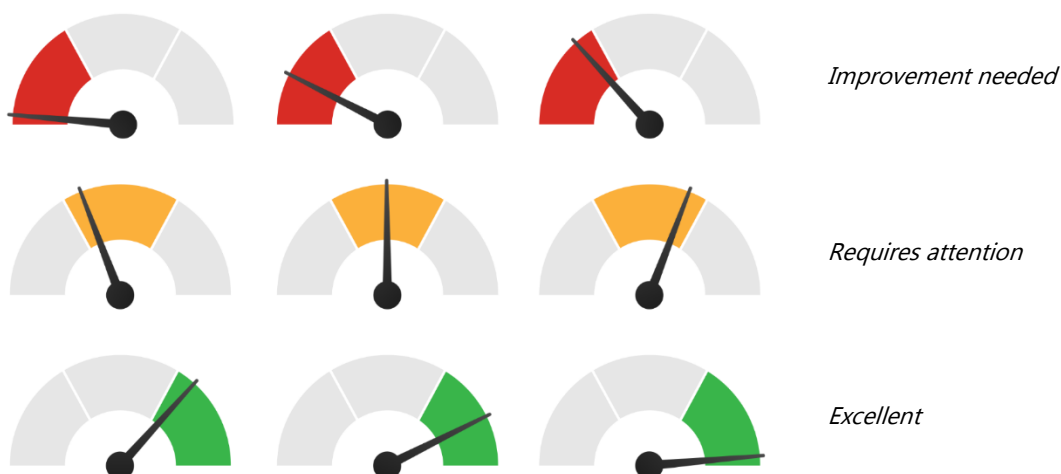
The OCT profiles each consist of 5 pages which contain a general introduction, and a page for each of the topics: food security, blue energy, blue tourism, and maritime. This section provides a short explanation behind the status dials, scoring system, and a more detailed explanation for some specific terms.

Each page starts with an overview with **dials** on the top of the page to indicate the status of identified policies and/or reports in the OCT on a specific topic. These are based on a scoring system ranging from 1 (lowest) to 9 (highest). All topics cover external policy, internal policy and International / regional. This is further explained in the table below.

TABLE 0-1 SUBJECTS ON IDENTIFIED POLICIES AND/OR REPORTS EXPLAINED

Subject	Explanation
External policy	This refers to all policies determined outside the OCT (in most cases by the Member State to which the OCT is associated) that has effect on the functioning of an OCT.
Internal policy	This refers to all policies and strategies determined by the government of the OCT itself.
International / regional	This refers to any analytical reports, or recommendations for policy or strategy (including any regional agreements and protocols) that emanate from international or regional organizations and affect the functioning of the OCT.

FIGURE 0-1 OVERVIEW OF DIALS USED TO INDICATE THE STATUS (SCORES 1-9)



Each topic also contains a SWOT analysis, which emphasizes the **S**trengths, **W**eaknesses, **O**pportunities and **T**hreats. These are described in a box as illustrated below:

S: Description of strengths
W: Description of weaknesses
O: Description of opportunities
T: Description of threats

In the **blue energy** section of the profiles, two more dials represent an overview of the global interest for marine energies through the dials indicated in the table below.

FIGURE 0-2 OVERVIEW OF DIALS USED TO INDICATE THE STATUS

Subject	Explanation
Marine energies resources	The scoring aims to represent the available resources compared to the needs of energy of the OCT
Impact of implementing Marine energies on CO2 emissions of the OCT	This score aims at considering the interest of the transition effort to marine energies compared to the current mix, in terms of CO2 emissions.

A similar scoring method with a colour scale from fair to exceptional is used. This score is a current statement as it comes from resources with preliminary evaluation and following either the available publications on the subjects, or what has been communicated to the expert during the interviews. It is pointed out that this evaluation is not always in the influence of the OCT. This section includes a table with the energy resources of the OCT. To avoid any confusion about the interpretation, the following tables elaborate on the meaning of the terms used in the different evaluation tables.

TABLE A-2 TABLE ON OCT MARINE ENERGY RESOURCES EXPLAINED

OCT Energy resource	Explanation
Fixed wind	Offshore wind power plant with bottom fixed anchoring technology. The resource is evaluated regarding global wind atlas or specific local atlas, mean winds at 100m height must be >7m/s. Bathymetry is analysed: Fixed offshore soil must be <50m depth.
Floating wind	Offshore wind power plant with floating technology. The resource is evaluated regarding global wind atlas or specific local atlas, mean winds at 100m height must be >7m/s. Bathymetry is analysed: Floating turbines soil must be <100m depth
Tidal current	No specific resource atlas is available, global tide heights variations with specific bathymetry is analysed in low depth areas.
Wave	Electricity production from the energy of the waves: The harvested energy depends on the speed, height and frequency of the wave, as well as the water density. A cross study of bathymetry, wind, and wave models with historical data is lead to obtain a global potential.
SWAC / OTEC	Ocean Thermal Energy Conversion (OTEC) plants produce electricity in a cycle of vaporization of a changing state fluid exploiting at least a 20°C temperature gradient of water. Deep offshore platforms are considered. Seawater Air Conditioning (SWAC) takes advantage of available deep cold water from the ocean to replace conventional AC systems. Depth of 1000m for 5°C water temperature is required <10km from the coast. Steep bathymetry is required.
Salinity gradient	Electrochemical Energy from salinity gradient: The most advanced salinity gradient technology is Reverse Electro Dialysis (RED) using difference in the salt concentration. The Global ocean salinity atlas is analysed along the availability of fresh water.
Tidal range	Energy of the Tidal: Sea heights variations are evaluated from global atlas and coupled to specific coastal conditions (estuaries or bays) that must be reached to consider sufficient amplification of the potential.

Marine Storage	Potential energy storage under deep water. Its potential is evaluated considering depth and soil accessibility for bottom fixed solutions
Marine Hydrogen	Hydrogen can be produced from electricity generated using renewable sources via an electrolysis process. Basically the raw material is water (even salty) , the mean is electricity coming from any of the above Marine energies and the result is hydrogen, as a fuel to be used by boats, heavy vehicles, industrial processes and many future other uses. Marine hydrogen has been evaluated as a whole, knowing that the needed technologies for potential hydrogen marine platforms, would be quite near to the ones of the oil & gas platforms, but without the drilling related impacts.

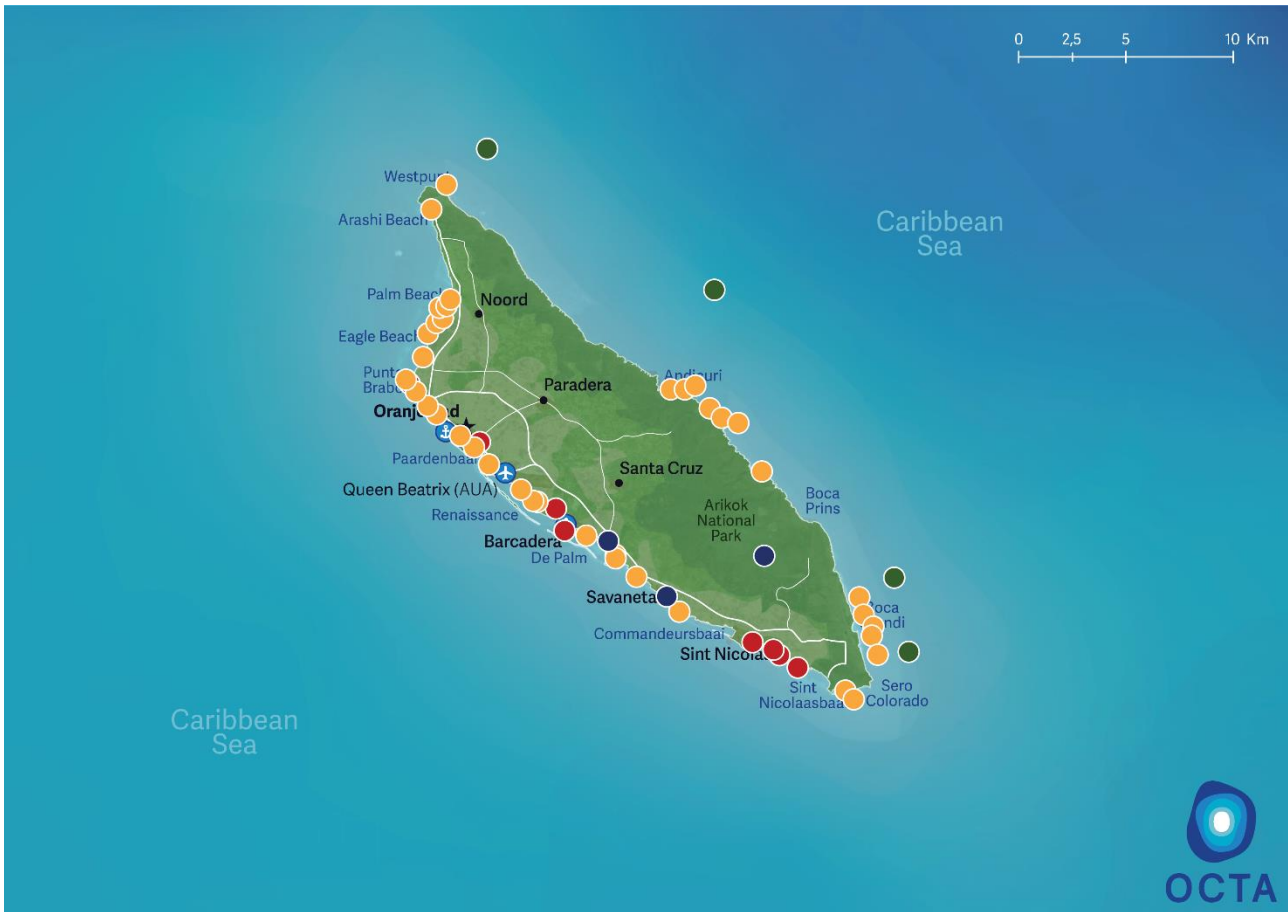
TABLE A-3 TABLE ON OCT ENERGY RESOURCES: SCORING ELEMENTS EXPLAINED

OCT Energy resource	Explanation
Resource Atlas Knowledge	A neutral and scientific atlas of the resource exists and has been documented over the marine territory, for the related type of energy.
Inside Territorial Waters	Preliminary evaluation of the potential within the 12 Nautical Miles from coast of the territory, for the related type of energy.
Outside Territorial Waters	Preliminary evaluation of the potential outside the 12 Nautical Miles and within the exclusive economic zone of the territory, for the related type of energy.
Policy / Planning	A local, or a State's, Marine energies policy or Marine energies program or Plan exists and has been documented on the marine territory, for the related type of energy.
Targeted objectives	Assessment of the gap between the current situation and the targeted objectives for the related type of energy. (for example: if there is no tidal, no need to work in order to include tidal energy in the policy or master plan, so target is "aligned" to the current situation. If the policy includes a global reference to marine energies and the resource of wind is very good, the target should be higher for this energy, than only putting a general target, etc..)

TABLE A-4 TABLE ON OCT MEANS SCORING ELEMENTS EXPLAINED

OCT Means	Explanation
Means to reach the targets	<p>Can the OCT rely on own internal means to go to the « reachable targets » as they are listed on the table before? These means are:</p> <ul style="list-style-type: none"> • Knowledge: Academic level, adequate type for marine energies and availability of academic infrastructure in the OCT itself for capacity building, etc. • Law and Regulation: OCT Public sector enforcement in the field of energy and electricity, and do the several regulations allow or favour the implementation of marine energies (or the contrary)? • Operational people: How strong and how ready is the local private sector to handle the new market of the marine energy? • Marine Cluster / Innovation centres: do they exist in the OCT? Do they support marine energies? Are they active and well-known to anybody? Do they advertise? • Finance: Is there OCT local investors? local bank able to involve local economy and make money come back to the territory? • Communication: Do advocacy for marine energies exists through NGOs or civil society in the OCT so that to ease project dissemination and acceptance?
Reachable means	How easily can the OCT, either build partnership with others, or can reach alone an adequate level for the same here above means.

Aruba



Food Security

- Agriculture (Butucu)
- Coastal Fishing (Santo Largo)
- Desalination (Near Water-En Energiebedrijf Aruba)

Blue Energy

- Wind potential (Off the coast of Grapefield Beach)
- Wind potential (Off the coast of Westpunt Beach)
- SWAC potential & projects
- Wave potential (Off the coast of Bachelor's Beach)

Blue Tourism

- Varadero Aruba Marina & Boatyard
- Aruba Surfside Marina
- Renaissance beach
- Aruba Cruise Terminal

- Bushiri Beach
- Druif Beach
- Divi Beach
- Manchebo Beach
- Eagle Beach
- Beach at the Blue Residences
- PUREBEACH
- Scuba Diving
- Ocean Faith Watersport, Sailing & Snorkeling - Private Charters - Sunset Tours, Boat Rental
- Octopus Aruba Sailing, Snorkeling, Sunset & Private Tours
- Palm Beach
- Arashi Beach
- Westpunt Beach
- Andicuri Beach
- Blackstone beach
- Natural Aquamarine Swimming Hole
- Pure Diving Aruba
- Barcadera Beach (kite and windsurf)
- De Palm Island Ferry Terminal

- Aruba Outdoor Adventures
- Mangel Halto
- Aruba Beach Chalets
- Rodger's Beach
- Baby Beach
- Bachelor's Beach
- Boca Grandi
- Kite School
- Grapefield Beach
- Rincon beach
- Dos Playa
- Conchi
- Boca Keto
- Daimari Beach

Maritime

- Port of Oranjestad
- Port of Manchebo
- Port of Sint Nicolaas Baai
- Port of Barcadera
- Port Office
- Coastal Dock
- Dock (Close to Citigo Aruba Oil refinery)
- Dock (Close to Dry Cargo Pier)

Bonaire



Food Security

- Groundwater polluted
- Agriculture (Near the Flamingo Sanctuary)
- Protected Reef (Off Bon Bini Na Kas, Queen's Highway)

Blue Energy

- Wind potential (Off the coast of Sorobon)
- Wind potential (Near Playa Grandi)
- Wave potential (Off the east coast)

Blue Tourism

- Klein Bonaire

- Just A Nice Dive (D)
- Klein Bonaire
- Bonaventure (G)
- Andrea I Dive site (23)
- Andrea II Dive Site (22)
- Playa Chikitu
- Playa Grandi
- Lac Cai Beach
- Sorobon Beach
- Kiteboarding Bonaire
- Pink Beach (53)
- Alice in Wonderland diving site (45)
- Cesar's Dreams (Unofficial Dive Site)
- Angelas Anchor (unofficial dive site)
- Delfins Beach Resort Bonaire
- Belmar Bonaire Oceanfront Apartments

- Bachelor's Beach (38)
- Wannadive South
- Compass Sailing
- VIP Diving
- Ohana Clear Canoe
- Bonaire Cruise Port
- Dive Friends Bonaire @ Yellow Submarine
- Harbour Village Marina
- Caribe Watersport En Watertaxi Bonaire

Maritime

- Bopec Oil Terminal
- Bonoil
- Bonaire Cruise Port
- Curoil Mooring
- Brasil Bay
- Salina

Curacao



Food Security

- Coral Contamination (Playa Lagun)
- Coral Contamination (Between Playa Kalki and Playa Grandi)
- Coral Contamination (Playa Largu)
- Coral Contamination (Near Jan Thiel Beach)
- Coral Contamination (near Blue Bay)
- Coral Contamination (Off the coast of Curacao-Divers / Deutsche Tauchshule)
- Coral Contamination (Off renaissance)
- Coral Contamination (close to Playa Hundu)

Blue Energy

- Wind potential (Off the coast of Kueba di Shingot)
- Wave potential (Off the coast of Kueba di Shingot)
- SWAC potential & projects) (Near Marichi Pier)

Blue Tourism

- Playa Porto Marie
- Playa Hunku
- Cas Abao
- B Diving & Watersports
- Playa Largu
- Playa San Juan
- Playa Manzaliña
- Playa San Juan
- Playa Hundu
- Marení Beach
- Boka Hulu

- Playa Santu Pretu
- Let's Go Watersports
- Playa Santa Cruz
- Boka Santa Cruz
- Playa Lagun
- Playa Jeremi
- Kleine Knip
- Grote Knip
- Playa Jeremi
- Marazul Dive Resort
- Playa Forti
- All West Apartments & Diving
- Playa Grandi
- playa piskadó
- Go West Diving Curacao
- Playa Kalki
- Cliff Villa
- Playa Gipy
- Playa Kanoa
- Nix Kiteboarding Kitesurfing School Curacao
- Fuik Beach
- Santa Barbara Beach, Curaçao
- Barbara Strand
- Director's Bay / Direktorsbaai
- Tugboat Beach
- Curacao Yacht Club
- Seru Boca Marina
- Kima Kalki Marina N.V
- Limestone Holiday Resort Curacao
- SWA! Spanish Water Adventures
- Miss Ann Boattrips Curacao
- Novus Arca C2
- Watersport Vereniging Jan Sofat
- YSCO - Youth Sailing Curaçao
- Mermaid Boat Trips Curacao
- Maxie Sailing Curacao

- Dushi Watersports & Trips
- Breeze Adventures & Boat Trips Curacao
- Adrenaline Tours Curacao
- BountyAdventures.com
- Palapa Beach Resort & Marina
- Caracas Bay
- Fundiving Curacao PADI 5 Star IDC Dive Center & Resort
- Jan Thiel Beach
- BlueFinn Charters Curacao
- LionsDive Beach Resort Curacao
- Mambo Beach
- Seaquarium Beach
- Playa Marie Pampoén
- Marie Pampoén Beach
- Chichi Jetski Tours
- Dive NAS - Boca Simon
- Divers of the Caribbean
- Mega Cruise Terminal
- Parasasa Beach
- Parasasa
- Blue Bay Dive & Watersports Curacao
- Blue Bay, Curaçao
- Playa Wachi
- Curacao-Divers / Deutsche Tauchschule
- Boca Beach
- Boka Sint Michiel
- Kokomo Beach
- Daaibooi

Maritime

- Willemstad Port
- Furk Bay
- Bullen Bay
- St Michaels Bay
- West Punt

French Polynesia



Food Security

- Port de Pêche
- Ocean Fishing (North West)
- Ocean Fishing (East)
- Ocean Fishing (North East)
- Ocean Fishing (West)
- Aquaculture (Off Raiatea)
- Aquaculture (Off Haraiki)

Blue Energy

- SWAC The Brando
- SWAC Beachcomber
- SWAC Potential & project
- OTEC Project DCNS
- Wave potential (Off Teva I Uta)
- Wave potential (Off Taiarapu-Est)

Blue Tourism

- Tahiti Parapente
- Papeete Marina
- Nautisport
- Sail Tahiti - Brokerage

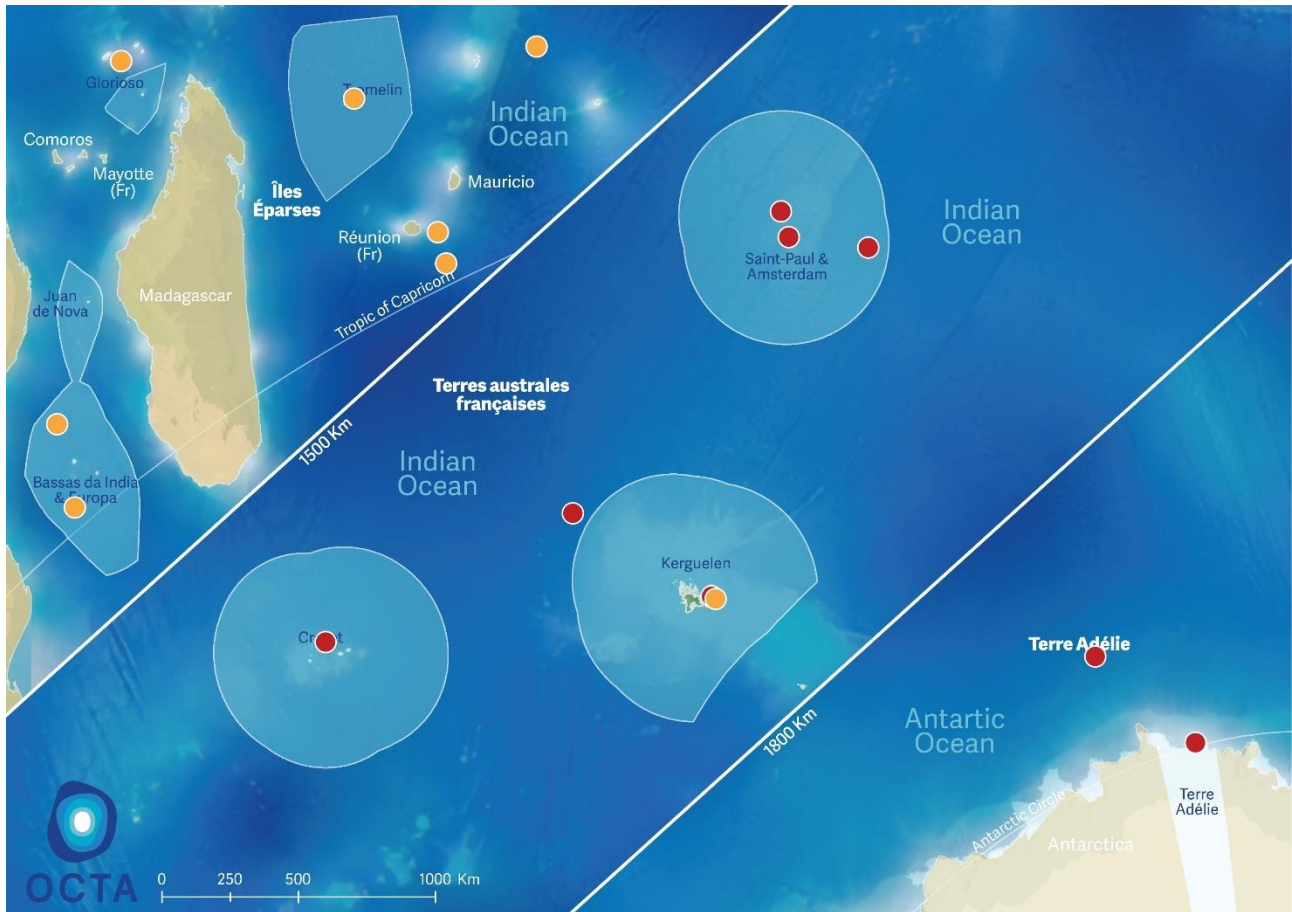
- Yacht Club de Tahiti
- Sin Tung Hing Marine
- Marina Taina
- Apooiti Marina
- Pineapple Beach
- Public Beach
- Public Beach Ta'ahiamanu
- Plage de la Pointe Venus
- Hitimahana
- Taharuu Beach
- Public Beach Papehue
- Taharuu Beach
- Plage Vaiava
- Mahana Dive
- Bora Diving Center - Eleuthera
- TOPDIVE Bora-Bora
- Tahiti Iti Diving
- ScubaTek Tahiti Dive Center
- Eleuthera Tahiti Diving Center
- Topdive Tahiti
- Mo'orea Blue Diving
- Moorea Fun Dive
- TOPDIVE Moorea
- Lakana Fly Moorea
- Pillowcase Fa'ahe'e Surf School

- Mo'o Surf School
- Tahiti Kitesurf Center
- OROFARA
- Shop Tahiti surf
- 662ride Shop From Tahiti
- kite surf school polynesie
- Fishing Bora Bora Kamikaz
- Tahiti Yacht Charter
- Sunsail Raiatea
- Bora Bora Moana Adventure Tours
- Moorea Ocean Adventures
- Moorea Safari Cruises
- POE CHARTER TAHITI
- AK FISHING TRIP MOOREA

Maritime

- Port Pape'ete
- Gare Maritime - Uturoa
- Mārō'ē Bay
- Pape'ete Ferry Terminal
- Port de Mo'orea
- Cruise ships dock in Papeet

French Southern and Antarctic Lands



Blue Tourism

- Port -aux- Francis Cruise

Maritime

- Port-aux-Français
- Îles Crozet
- Île Saint-Paul
- Île Amsterdam
- Europa Island
- Tromelin Island
- Réunion
- Grande Glorieuse
- Petrel Island
- Fishing Grounds (between Madagascar and Mozambique)
- Fishing Grounds (North of Madagascar)
- Fishing Grounds (North of Mauritius)
- Fishing Grounds (Near ile Saint-Paul)
- Fishing Grounds (Near Petrel Island)
- Fishing Grounds (Near French Southern and Antarctic Lands)
- Fishing Port (On Reunion)

Greenland



Food Security

- Fishing Hub (Disko Bugt)
- Agriculture (Near Kangerlussuaq)
- Agriculture (North of Qeqertarsuaq)
- Ocean Fishing (North East of Greenland)
- Ocean Fishing (South East of Greenland)

Blue Tourism

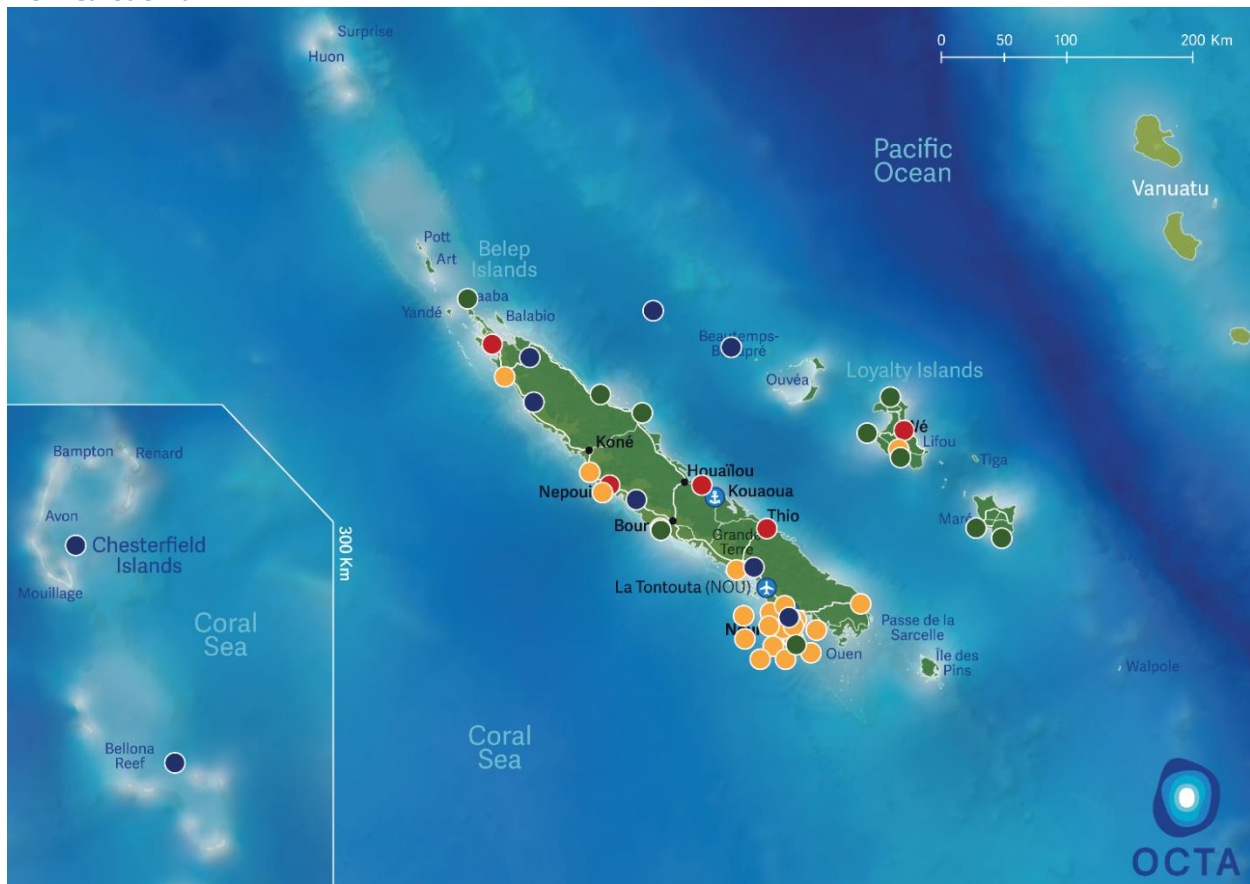
- Nanortalik Tourism
- South Greenland Boat Charter 44
- Havnevej
- Thomsens Havn
- Uunartoq Hot Springs
- Ferry (Nuuk)
- Greenland Cruise Services
- Disko Bugt
- Diskobay Tours
- AirZafari

- IceCap Tours
- Disko Line
- Albatros Arctic Circle Ilulissat
- Ilulissat Water Taxi
- PGI Greenland
- World of Greenland

Maritime

- Kutterkajen
- Port of Sisimiut (Holsteinsborg)
- Port of Frederiksdal
- Port of Aasiaat
- Port of Igdlorsuit
- Port of Kajalleq Upernavi
- Port of Kangamiut
- Port of Kangarsuaq
- Port of Kangilinnguit
- Port of Nanortalik
- Port of Narsaq

New Caledonia



Food Security

- Agriculture (Near Bonde)
- Fishing Port (Dumbea Bay)
- Agriculture (Gomen Bay)
- Agriculture (Near Station Ouaneke)
- Agriculture (Near Centre Kiwanis de la Ouenghi)
- Astrolabe Reef Protected Area
- Bellona Reef Protected Area
- Chesterfield Plateau Protected Area
- Petrie Reef Protected Area

Blue Energy

- Wave potential (Off the coast of Noumea)
- Wave potential (Maré Island)
- SWAC potential (Maré Island)
- SWAC potential (Off Poe Beach)

- SWAC potential (Off Ouanpoues)
- SWAC potential (Off Touho)
- SWAC potential (Off South- West coast of Lifou Island)
- SWAC potential (Off West Coast of Lifou Island)
- SWAC potential (Off North coast of Lifou Island)
- Wind potential (North of Baaba Island)

Blue Tourism

- Aventure Marine
- OLETI TOURS - Authentic tours and excursions in New Caledonia
- OFFRODS Charter - Location catamaran
- AÏTO CHARTER, CROISIÈRE EN CATAMARAN EN NOUVELLE-CALÉDONIE
- Seal Superyachts New Caledonia
- LE TOUR DE COTE

- ACTIVE WORLD EXPLORER
- Cruise Ship Terminal
- OLETi Tours
- Lifou Island
- Poe Beach
- Plage de Pindai
- Plage de Franco
- Tangadiou Beach
- CREIPAC
- Max Mara Noumea Galerie La Promenade
- Kitesurfing School Noumea Vakarm
- Nouméa Kite School
- Diam's Nouméa
- Port Du Sud Marina
- Marina de Port Ouenghi
- Nouville Plaisance
- Port Brunelet
- Port Moselle Harbour

Maritime

- Port de Wé
- Port of Babouillat
- Port of Nepoui
- Port of Poro
- Port of Thio
- Cruise terminal

Saba



Food Security

- Groundwater
- Diving
- Agriculture

Blue Energy

- Wind potential (Off the coast of Juancho E. Yrausquin Airport)

Blue Tourism

- Fort Bay Harbor Marina
- Ladder Bay
- Well's Bay
- Cove Beach
- Saba Divers
- Tent Bay Beach

Maritime

- Fort Harbor Bay
- Saba Bank
- Fishing Ground (South of Saba)
- Fishing Ground (West of Saba)
- Marine Protected Area (South of Saba)

Saint-Barthélemy



Food Security

- Desalination (near SBYC- Saint Barth Yacht Club)
- Protected Area (Ile Fourche)
- Protected Area (Saint Barthelemy Natural Reserve)
- Protected Area (Ile Toc Vers)
- Protected Area (Anse a Colombier)
- Protected Area (Les Gros Islets)
- Protected Area (Le Pain de Sucre)
- Exclusive Protected Area (Off the coast of La Tortue)
- Exclusive Protection (Anse de Marigot)
- Exclusive Protection (Anse du petit Cul-de-Sac)

Blue Energy

- Wind potential (Off Northern Coast)
- Wind potential (Off the South-East Coast)
- OTEC potential
- Wave Potential (Off the East Coast)
- Wave potential

Blue Tourism

- Jicky Marine Service
- SERIAL DIVERS ST BARTH - DIVING CENTER
- Saint Barth Tours and Travel
- Saint-Jean, Saint Barthélemy
- Colombier
- Saint-Jean, Saint Barthélemy
- Shell Beach
- Gouverneur, Saint Barthélemy
- Grand Cul-de-Sac
- Petit Cul-de-Sac
- Marina St Barth
- St-Barth Jet Ski Rental
- Jet Ski Racing St Barth
- Ouanalao Dive

Maritime

- Gustavia
- Saint Barthélemy

Saint-Pierre-et-Miquelon



Food Security

- Fish Freezing (Saint-Pierre, near Etang Boulot)
- Agriculture (Next to Aeroport de Miquelon)
- Agriculture (Close to Etang Ynachi)
- Agriculture (Close to La Chapelle Catholique Sainte- Therese)
- Agriculture (North of Observatoire du Cap aux Basques)

Blue Energy

- Wind potential (South of Saint Pierre)
- Wind potential (North of St Pierre and Miquelon)
- Wave potential (North of St Pierre and Miquelon)
- Wave potential (South of Saint Pierre)

Blue Tourism

- Yacht Club
- Diving Club
- JouéClub

Maritime

- Port St Pierre
- Port of Miquelon

Sint-Eustatius



Food Security

- Desalination Plant (Gallows Bay)
- Agriculture (Near Compagnie Bay)
- Livestock (Near Great Bay)

Blue Energy

- Wind potential (Off Compagnie Bay)

Blue Tourism

- Golden Rock Dive Center
- Fort de Windt

Maritime

- Port St Eustatius
- Gallows Bay

Sint-Maarten



Food Security

- Desalination Plant (Near Cupecoy Beach)
- Desalination Plant (Cole Bay)
- Desalination Plant (Guana Bay)
- Fishing Port (North of Simpson Bay Bridge)
- Pollution (Snoopy Island)
- Marina (Snoopy Island)

Blue Energy

- Wind potential (Off Back Bay)
- Wave Potential (Off Back Bay)

Blue Tourism

- Yacht Club Port De Plaisance
- Marina Port Royal
- Capitainerie
- Billy Bones Boat charters
- Aqua Mania Adventures
- Blue Pearl Marina
- Lagoon Marina
- Isle Del Sol Marina
- Dawn Beach

- Great Bay Beach
- Little Bay Beach
- Simpson Bay Beach
- Maho Beach
- Mullet Bay Pond
- Mullet Bay Beach
- Cupecoy Beach
- Kim Sha Beach
- Happy Bay Beach
- B52 Kiteschool
- Surface Saint Martin
- Windyreef Windsurf
- Sxm Kiteschool
- Saint Martin Surf Club
- Wind Adventures
- QUIKSILVER Saint Martin
- Gokitesurfing.com

Maritime

- Ferry Terminal Philipsburg
- Port de Galisbay
- Dr. A.C. Wathey Cruise and Cargo Facilities
- Cruise Port (Great Bay)

Wallis & Futuna



Food Security

- Agriculture (North Wallis, near Airport)
- Pigs (North Wallis, near Airport)
- Fishing Harbour (Wharf Baie de Mata Uta)
- Fish Processing (Near Centre Commercial Mata Uta)

Blue Tourism

- Sologa
- Ganiu
- Lanutavake
- Vaika
- Wharf de Leava
- Pacific Energy Marina
- DAE MYUNG Fishing Gear MFG LTD - Sea Master
- Royal Suva Yacht Club
- Palm Beach
- Pacific Harbour
- Alvo(Fiji)Ltd T/A Jetski Safari
- Aqua-Trek Beqa Dive Center
- Pacific Harbor Beaches
- Matanivusi Beach Eco Resort

- Wellesley Resort
- Mango Bay Resort Fiji
- Warwick Fiji
- Beach (Near Solosolo Creek)
- Naviti Resort
- Fiji Hideaway Resort and Spa
- Black Rock Beach Fiji
- Tambua Sands Beach Resort
- The Crow's Nest Resort
- KuluKulu Surf Club
- Coral Coast Adventures (Fiji) Limited
- Cuvu Beach
- Sigatoka Fishing Charters
- Namuka Bay Lagoon Resort
- Natadola Beach
- Scuba Bula
- Rendezvous Beach
- Rendezvous Surf Camp Fiji
- Waireba Beach
- Fiji Surfco Warehouse HQ
- Viti Water Sports
- Wailoaloa Beach
- Wiloloa Beach
- Picnic Sport
- Lomolomo Beach
- Vuda Marina

- First Landing Beach Resort & Villas
- Nila Beach Resort
- Saweni Beach
- Vatia Beach Resort
- Beach
- Kiuva Beach
- Cape Puava
- Cape Vaitoloa
- Cape Mulinuu
- Tanu Beach Fales
- Cape Fatuosofia Beach
- Piula Cave Pool
- Amouli Beach Fales
- Palagi Beach

Maritime

- Port of Leava
- Wharf de Leava
- Fiji Ports Terminal Ltd
- Fiji Ports Corporation Limited
- Sailax Shipping & Freight Forwarding (Fiji) Ltd
- Shipping Services (Fiji) Ltd
- RB Harbour Point
- Port Denarau
- Point 9



Aruba is a constituent country of the Kingdom of the Netherlands. It has full autonomy in all internal affairs, while the Kingdom of the Netherlands is responsible for the foreign affairs and defence. Every four years there are 21 members elected to the Staten from there the Staten elects the prime minister and deputy prime minister. Each Prime minister is sworn in by the Governor of Aruba who is a representative of the Dutch monarchy. Since 1986 the country has had its own constitution which is subordinate to the Charter of the Kingdom of the Netherlands.

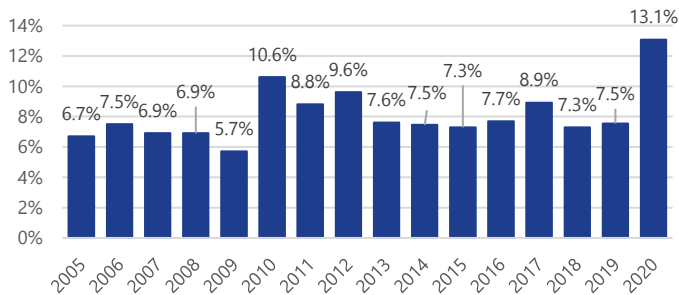


Latitude: 12.5211° N
 Longitude: 69.9683° W
 Capital: Oranjestad

Aruba is in the Caribbean Sea, approximately 29 kilometres north of Venezuela. Along with the Netherlands, Curaçao and Sint Maarten, they make up the Kingdom of the Netherlands. The island is part of the Leeward Antilles which is a group of islands in the Caribbean. The island is also part of the ABC Islands which is a group of islands in the Caribbean made up of Aruba, along with Bonaire and Curaçao.

- As of 2020, the island's population totalled 106,766 permanent residents, an increase of about 5,101 since 2010
- The median age in Aruba is 41 years old
- The total fertility rate is 1.9
- The life expectancy is 76.8 years
- 43% of the population live in urban areas

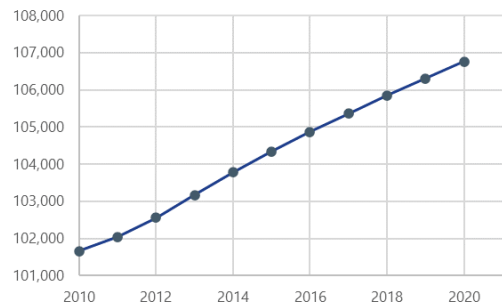
FIGURE: UNEMPLOYMENT RATE ARUBA (%)



Source: International Monetary Fund

In 2019 the GDP in Aruba was 3.3 billion USD. The living standard is amongst the highest in the Caribbean. The primary source of income used to be oil refining, but Aruba has transitioned to rely primarily on tourism. Receiving more than 1 million guests per year primarily from North America, it relies increasingly on high-income tourists with interest in local culture, life, and food.

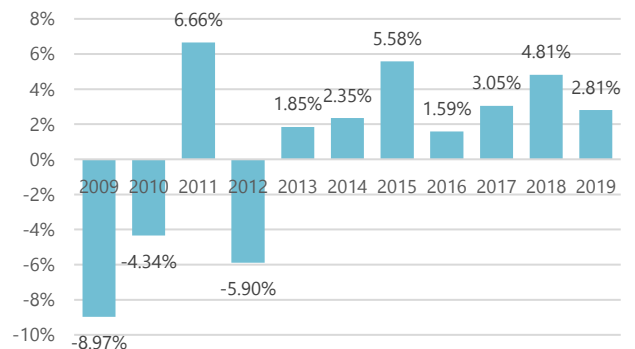
FIGURE: POPULATION ARUBA



Source: Statista

In the early 1990s there was nearly no unemployment in Aruba but since 2003 the unemployment rate has fluctuated between 10% and 7%. In 2020 the unemployment rate rose dramatically. Generally, the island relies heavily on tourism and can therefore have a very fluctuating unemployment rate.

FIGURE: ECONOMIC GROWTH ARUBA (% change)



Source: World Bank



FOOD SECURITY IDENTIFIED POLICIES AND/OR REPORTS			
Environmental	External Policy	Internal Policy	International/Regional



FOOD SOURCES *Fishery:* Aruba has around 600 -1,200 fishermen with vessels sized under 10 meters, and around 2,000 - 4,000 recreational boaters. Most fishermen are artisanal and are concentrated in the south or south west part of the island, mainly around Savaneta village, fishing 3 miles or more offshore. Catches are estimated at around 150-200 ton per year, are sold fresh and are consumed locally in family homes and restaurants. Coastal wahoo, grouper, and snapper species are over-fished, as evidenced by constantly decreasing catch per unit of fishing effort (CPUE). Aruba is part of the Western Central Atlantic Fishery Commission (WECAFC) but has its own fisheries legislation. Large scale

commercial fishing is prohibited by policy since 1990. Enforcement and policing are done by the Dutch Coastguard. The Fisheries Department of Government is responsible for monitoring and research, but there is a capacity shortage and no system for monitoring catches. There are no fishing quotas imposed, and there is no fish processing available on the island.

Aquaculture: There is no aquaculture activity. Imports of fish have been rising constantly since 1980, whilst exports remain close to zero. ***Agriculture:*** There are about 74 farmers that practice animal husbandry, 112 practice agriculture and a total of 252 are registered seasonal producers. A wide range of garden crops are grown for local consumption, as well as for tourist demand. Goat, sheep, cattle, and pigs are all raised for meat; poultry (chickens, quails) are kept for eggs. There is an increasing interest in low-input, low-water agriculture. There is also a growing demand for fresh, organic produce. About 8 companies practice hydroponics: these are small to medium size projects with the capacity for expansion, but land availability is limited since these are allocated according to existing business plans. There is some research cooperation with Curaçao and Bonaire. Aruba is considering a shared veterinary service. ***Commerce:*** Basic import source is Miami. Wholesalers retain stocks for about 6 months: falling tourism releases reserve which is used for locals. A contingency is to seek other suppliers from South America. Without its own food testing facilities, Aruba applies US/EC standards, which limits its sources for imports. **NUTRITION**

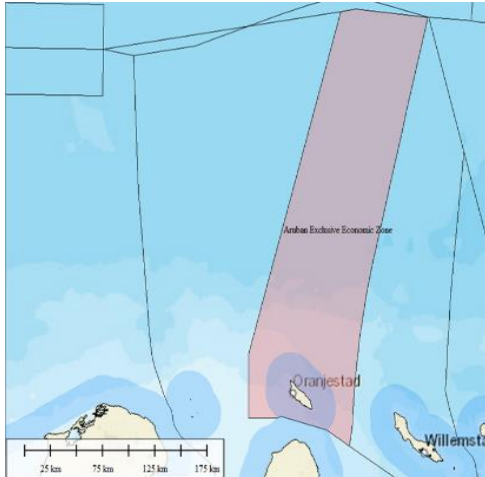
The only health problems observed are those generic for similar communities, mostly linked to the overconsumption of imported processed foods, which can lead to lifestyle diseases. **FRESH WATER** There is no fresh groundwater source in Aruba. All fresh water comes from a reverse osmosis desalination plant (second largest in the world), located in Spaans Lagoen, which also exports water to Curaçao. An awareness campaign is initiated on rainwater harvesting to reduce flood load, and to have reserve for drought season. **HOUSEHOLD INCOME SOURCES** Mostly tourist-based occupations, government salaries, and some financial services. **ENVIRONMENT** Sea level rise is notable on the East of the island and at the fishermen piers. During storms there is a lot more coastal flooding in flat areas and coastal erosion in hotel areas. Winds are much stronger, and the windy season lasts much longer than before. The west side of the island has shown increased salinity, possibly due to rising sea-levels, combined with increased pumping of water from wells used for agriculture.

- S:** (1) Disposable income is high for the region. (2) Education level is generally high.
- W:** (1) Virtually no domestic food supply, as buffer against environmental or economic crisis. (2) Fishing legislation and enforcement can be improved (3) Over-reliance on US market and 1-2 shipping lines, so price takers (4) No food testing / quality control facility; existing regulations out-dated, and cheaper Latin American sources excluded by use of US/EC standards
- O:** (1)Thorough resource inventory would give sound base for future policy (2) WWF-NL is planning to review and revise legislation on environment and fishing; outcome can be helpful to Aruba (3) The Covid19 shock to imports, coupled with health messages relating to overweight, has stimulated popular interest in home-growing of fresh horticulture. This opportunity should be seized, by providing extension support. It is strategically important. (4) Reforestation (5) Tigerfish.
- T:** (1) Hurricanes and seismic activity present constant threat of sudden shocks to system: likely to aggravate with climate change. (2) Administrative link to the Netherlands tends to result in not looking for opportunities for relating regionally with neighbours within the same ecology.

9.2 Blue Energy



BLUE ENERGY IDENTIFIED POLICIES AND/OR REPORTS				
Marine energies resource	Marine energy impact on CO ₂ emissions	External Policy	Internal Policy	International/Regional



OCT needs	
Consumption	873 GWh/yr 8.2MWh/yr/pers (mostly due to desalination needs)
Levelized Cost of Energy	Not known - integrated Utility - most probably around 0.30-0.35€/kWh
Current tariff (€/kWh)	from 0.16 €/kWh to 0.19 €/kWh increasing with consumption
Current CO ₂ /kWh	
Current CO ₂ /pers.	
Total current CO ₂ emission	Improving each year

OCT energy resource	Resource Atlas Knowledge	Inside Territorial Waters	Outside Territorial Waters	Policy / Planning	Targeted objectives
Fixed wind	Embryonic				Aligned
Floating wind	None				Aligned
Tidal current	None				Aligned
Wave	None				Aligned
SWAC / OTEC	Partial				Aligned
Salinity gradient	None				Aligned
Tidal range	None				Aligned
Marine Storage	None				Should be higher
Marine Hydrogen	None				Should be higher

S: (1) Climate Change awareness (2) Innovation capacities (3) Existing capacity on wind energy and PV (4) Integrated Utility mixing electricity and water

W: (1) Not possible to get heavy marine infrastructure (2) Cost of technologies leads the choice

O: (1) OCTA could coordinate programs and reach optimal size (2) European founding program support Renewable energy to compensate high levelized cost of energy for low Technology Readiness Levels (3) Dynamism with the neighbouring islands (4) Lack of available land: develop projects at sea

T: (1) Calamities in link with climate change (2) Taxes on fuel would disappear with renewable energy

OCT Means	Academic	Public sector	Private sector	Clusters / Innovation	Financing	Advocacy / NGOs
Means to reach the targets						
Reachable means						

9.3 Blue Tourism

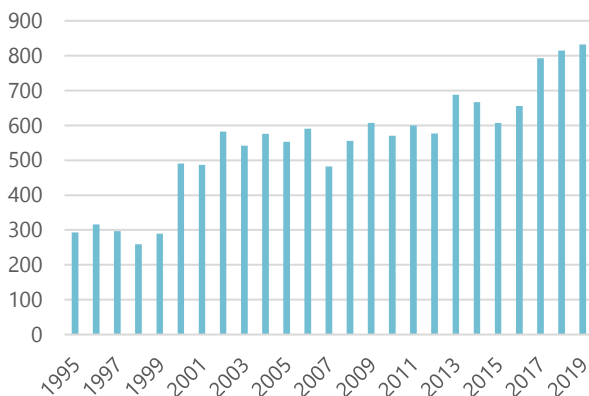


BLUE TOURISM IDENTIFIED POLICIES AND/OR REPORTS			
Environmental	External Policy	Internal Policy	International/Regional



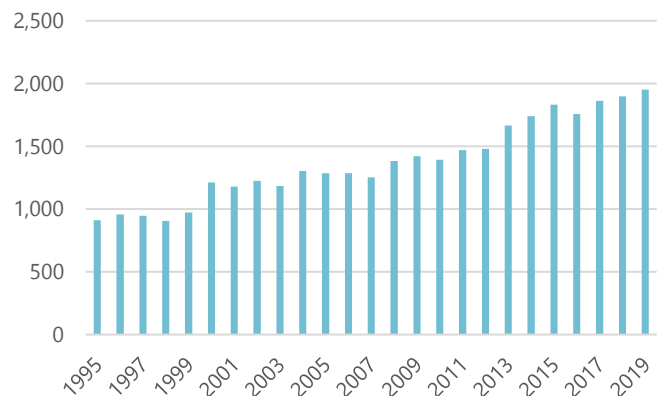
Aruba is 31.5km long and only six miles across and is a popular destination for coastal tourism due to its powdery-white sand beaches and sunny climate. The south and west of Aruba provides a multitude of resorts, shopping, and nightlife. The beaches provide the primary attraction. To the north the rugged coastline, waves, and wind attract numerous other coastal activities such as kite surfing, diving, and windsurfing. The National Park Arikok provides a diversification from the coastal areas for visitors.

FIGURE: CRUISE VISITORS in Thousands ARUBA



Source: United Nations Data

FIGURE: TOURIST VISITORS in Thousands ARUBA



Source: United Nations Data

In 2020, Covid-19 has affected visitor numbers and cruise visits, Aruba is however in a very safe position to rebound quickly. The Covid-19 pandemic has allowed Aruba to measure the impacts of the pandemic and implement risk resilience plans.

The data above demonstrates that Aruba as a destination has increased steadily since 1999 and, although the contribution to GDP is welcome, it also signals that there is an imminent danger that the current mass tourism model could collapse due to the demand on the natural resources, on which it depends and are likely to be reaching saturation point.

Adopting a Blue Tourism approach and developing a strategy which incorporates a maritime spatial plan would provide the necessary information and direction to ensure longevity of Aruba's Coastal Tourism Sector.

S: (1) Rich visitor attractive natural resources (2) Strong cruise destination (3) Increasing visitor numbers

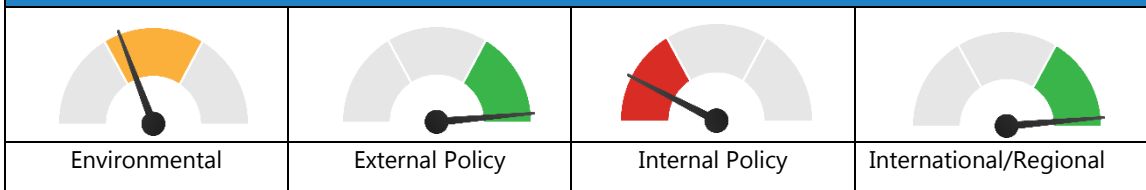
W: (1) Mass tourism approach (2) No eco-tourism considerations (3) Lack of training for hospitality providers (4) Lack of government strategic guidance

O: (1) Develop Aruba Blue Tourism Strategy (possible with other islands) (2) OCT Blue Tourism Standards and Audit Scheme' to promote OCT tourism initiatives; (3) Maritime spatial plan (4) Diversification (5) Training for hospitality providers (6) Develop an indicator system for the sustainable management at destination level (7) Funding applications in partnership with other islands at the regional level

T: (1) Climate Change (2) Overreaching carry capacity (3) Lack of Internal Policy (4) Global Economic Downturn (5) Environmental Destruction (6) Pandemic

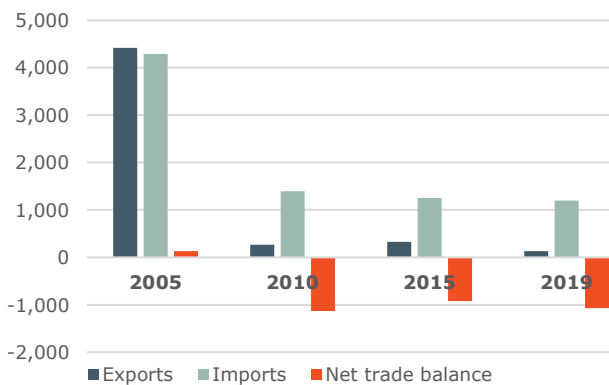


MARITIME IDENTIFIED POLICIES AND/OR REPORTS



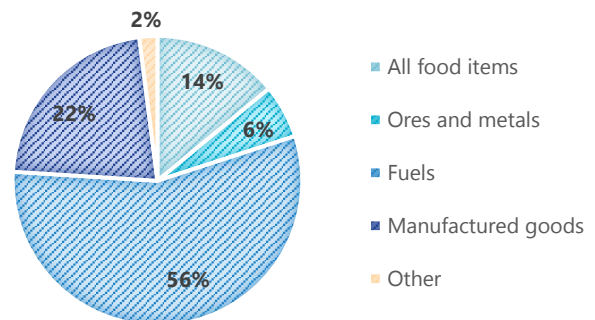
The key maritime clusters are located near to the primary ports. The Aruba Ports Authority administers the Port of Barcadera an industrial port with a depth of 36ft and 1,148 ft docking space and the Port of Oranjestad, Aruba’s container port and cruise ship terminal. The third, the Port of San Nicolas hosts the oil terminals and two reef berths. The ports also provide for ferry connectivity to Bonaire. The clusters host substantial commercial activities are shipping services, shipping agents, chartering services, tugboat, chandlery, ship management, crew change, offshore supply ship-to-ship operations, marine insurance, sales & service of life saving equipment.

FIGURE: Total merchandise trade (millions of US\$)



Source: United Nations Data

FIGURE: Export structure by product group in 2019 (as % of total exports)



Source: United Nations Data

Top 5 partners in 2019 (exports, millions of US\$)	
Nicaragua	26
Malaysia	24
USA	21
Netherlands	10
Curaçao	10

Source: United Nations Data

Most Notable Statistics:

- 32.7% Merchandise exports
- +2.8% Transport services

S: (1) Increased Transport Services (2) Strong Maritime Needs Foundation (3) Prepared Oil Pollution Response Plan

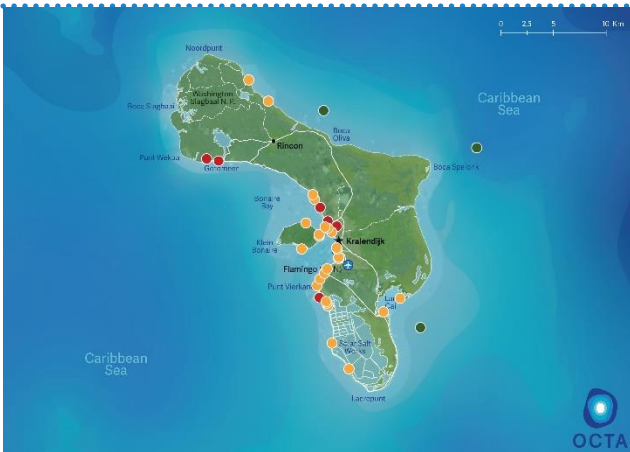
W: (1) Lack of Capacity (2) Requirement of Aruba Specific Policy (3) Lack of Awareness to the extent of Maritime Sector.

O: (1) Embracing Blue Sector to Prepare for Global Shipping Challenges, (2) Port Development, (3) Instigating better communication with EU Associated Member State with regards to Maritime Enforcement Protocols, (4) New joint Horizon Europe Projects (5) Developing Capacity at the local level

T: (1) No action (2) Lack of Investment



Bonaire is a special municipality of the Kingdom of the Netherlands. The special municipalities (Dutch: *bijzondere gemeenten*) carry many of the functions normally performed by Dutch municipalities. The executive power rests with the Governing Council headed by an Island Governor. The main democratic body is the island council. Dutch citizens of these islands are entitled to vote in Dutch national elections and (as all Dutch nationals) in European elections. Officially the islands are classed in Dutch law as being *openbare lichamen* (literally translated as "public bodies") and not *gemeenten* (municipalities). Unlike normal municipalities, they do not form part of a Dutch province and the powers normally exercised by provincial councils within municipalities are divided between the island governments themselves and the central government by means of the National Office for the Caribbean Netherlands. For this reason, they are called "special"

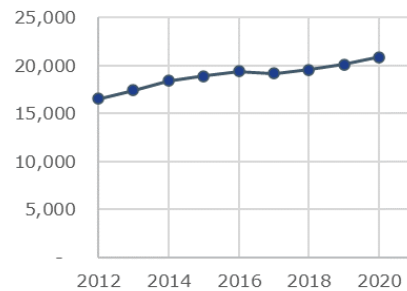


Latitude: 12° 10' 6.14" N
 Longitude: -68° 18' 29.46" W
 Capital: Kralendijk

Bonaire (including the islet of Klein Bonaire) is one of the Leeward Antilles and is located close to the coast of Venezuela. The Caribbean Netherlands has a population of 25,157 as of January 2019. The Caribbean special municipalities of the Netherlands refer to a group of three special municipalities of the Netherlands that are in the Caribbean Sea: the islands of Bonaire, Sint Eustatius, and Saba. They are collectively known as the "Caribbean Netherlands". Bonaire is also part of the ABC Islands Group (with Aruba and Curaçao).

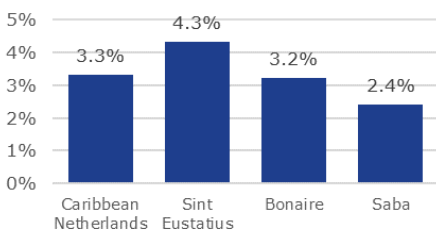
- As of 1 January 2020, the island's population totalled 20,104 permanent residents, an increase of about 1,200 since 2015.
- Most people living on Bonaire (2018) were between 55 and 60 years old
- In 2020, roughly 1,900 people fell in this age group

FIGURE: POPULATION BONAIRE



Source: Statista

FIGURE: UNEMPLOYMENT RATE BONAIRE

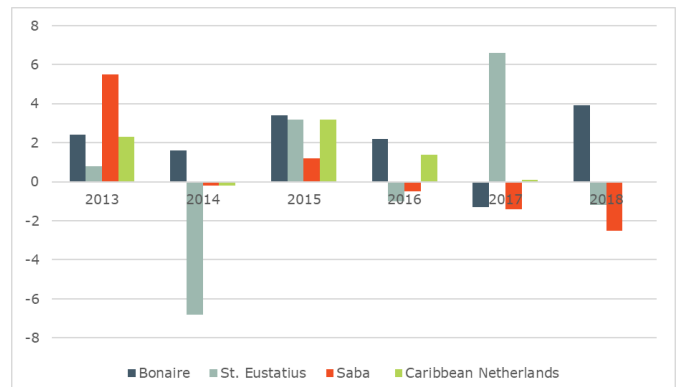


Source: Statista

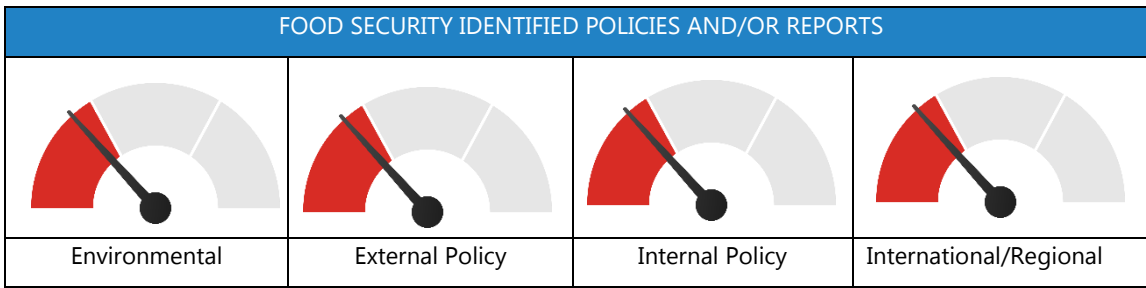
In 2018, approximately three percent of the population between 15 and 75 years old in the Caribbean Netherlands was unemployed. Unemployment differed markedly from island to island. Whereas on Bonaire unemployment was 3.2 percent in 2018, on Saba by comparison only 2.4 percent of the population was unemployed.

In 2018, Bonaire's gross domestic product (GDP) increased by 3.9 percent in volume. St Eustatius recorded a contraction of 11.8 percent and Saba's GDP declined by 2.5 percent. This is based on the newest available data from Statistics Netherlands (CBS).

FIGURE: ECONOMIC GROWTH BONAIRE



Source: Statistics Netherlands



FOOD SOURCES *Fishery:* Seafood consumption is relatively high at 24kg/person/year (FAO, 2012), compared to 17kg in Netherlands. Fisheries in Bonaire are described as multi-species, multi-gear, small-scale and strongly traditional fisheries. The total annual catch is about 103 tons, but the average catch per unit effort (CPUE) is only about 1.5kg (€13 gross) per fisherman per hour.

Aquaculture: was researched in the '50s, and a small laboratory was built in the '80s, but commercial attempts did not succeed. Mariculture (mostly farming of algae or herbivore fish) may have a future. An invasive reef predator, the lionfish, could profitably be fished

extensively.⁵³ ***Agriculture:*** There is very limited agricultural land, and few people are involved. Food security depends mostly on imports, and thus on income from other economic activities (mostly tourism). Saline agriculture, hydroponics, and other forms of sustainable agriculture are under research, as are livestock (goats) management systems.

NUTRITION Access to sufficient food is not an issue, but fresh food is scarce and quality (vitamins and pollutants) may be a problem. Increasing imports of processed foods is leading to lifestyle diseases. 99% of the food is imported.

FRESH WATER⁵⁴ Groundwater is generally brackish (saline), reckoned to be a consequence of sea spray, seawater infiltration, and sewage infiltration from human settlements. Nitrate levels are sometimes unacceptably high even for livestock use. Rainfall is extremely variable around an annual average of 588 millimetres. Sparse vegetation is the consequence of historical exploitation of native forests.

HOUSEHOLD INCOME SOURCES The majority of the income comes from tourism: 42% of businesses are operational in the tourism sector. The second largest (12%) is the construction sector.

ENVIRONMENT Much of the economy depends on tourism and fishing. Both depend on the health of the coral reefs. The reefs also provide the islands with storm protection, which makes protection of the reefs themselves vitally important. Coral cover at Karpata in Bonaire has declined considerably during the last twenty years. The Karpata area is a fully protected area where fishing or anchoring are not allowed. This decline can thus be related to global causes, to a nutrient problem, or possibly a synergistic effect between the two.

- S:** (1) High environmental awareness of population (2) Marine life protected
- W:** (1) Fresh water supply
- O:** (1) Rainwater retention programmes (2) Reforestation (3) Tigerfish
- T:** (1) Disruption to supply chains (for example, by Covid-19)

⁵³ Source: "Food from Oceans: Factsheet 3" University of Wageningen, 2019

⁵⁴ The groundwater quality of Aruba, Bonaire and Curaçao: a hydrogeochemical study; M.H.G. van Sambeek, H.G.M. Eggenkamp & M.J.M. Vissers, 2000



BLUE ENERGY IDENTIFIED POLICIES AND/OR REPORTS				
Marine energies resource	Marine energy impact on CO2 emissions	External Policy	Internal Policy	International/Regional



OCT needs	
Consumption	108.5 GWh/yr, 13 MWh/yr/pers. (population of 8,443)
Current LCOE	Not known - integrated Utility - most probably around 0.30-0.35€/kWh
Current tariff (€/kWh)	0.31 €/kWh (prepaid all included)
Current CO2 of the kWh	
Current CO2/kWh/pers.	
Total current CO2 emission	

OCT energy resource	Resource Atlas Knowledge	Inside Territorial Waters	Outside Territorial Waters	Policy / Planning	Targeted objectives
Fixed wind	Embryonic				Aligned
Floating wind	None				Aligned
Tidal current	None				Aligned
Wave	None				Aligned
SWAC / OTEC	Partial				Aligned
Salinity gradient	None				Aligned
Tidal range	None				Aligned
Marine Storage	None				Should be higher
Marine Hydrogen	None				Should be higher

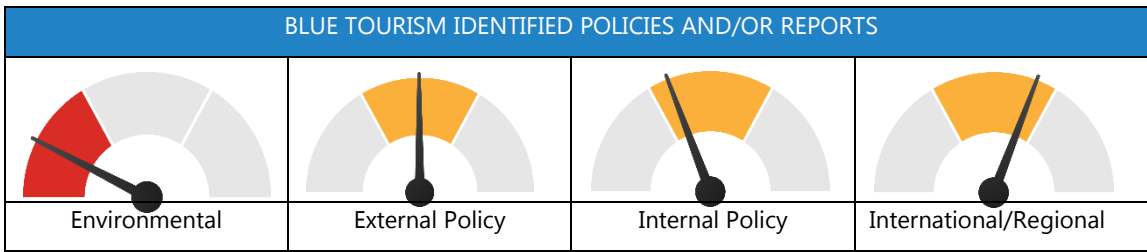
S: (1) Climate change awareness (2) Involved in energy transition and onshore renewable energy, capacity in PV and storage (3) Geographical marine territories open to other OCTs marine territories.

W: (1) Modest needs in electrical production (2) Tourism is important in the economy (blue destination) (3) Lack of human capacity

O: (1) OCTA can coordinate the neighbouring islands in a same program (2) European funding programs open to renewable marine energy (3) Land is small and expensive, inciting marine development (4) Dynamism of the neighbouring islands (5) Lack of available land: develop projects at sea

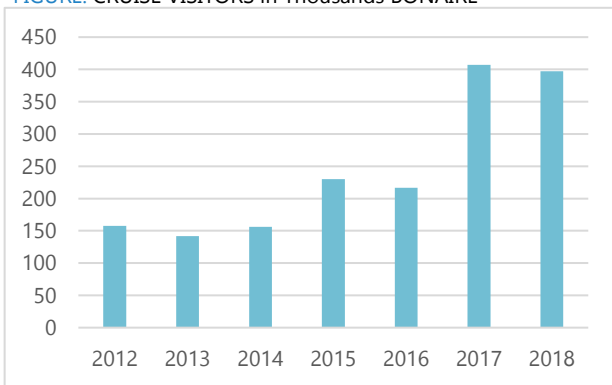
T: (1) Impacts of climate change (2) Taxes on fuel would disappear with renewable energy

OCT Means	Academic	Public sector	Private sector	Clusters / Innov.	Financing	Advocacy / NGOs
Means to reach the targets						-
Reachable means					-	-



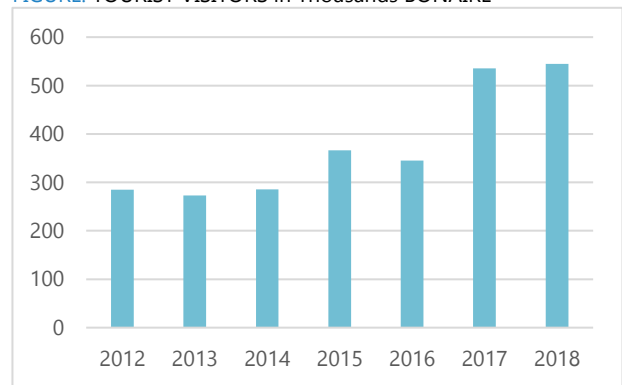
Bonaire notes that its tourism industry could do better for the economic welfare of the majority of Bonaire’s residents. This is largely due to two main reasons. The first that natural conservation efforts have displaced development that could provide professional and educational opportunities for Bonairians. This has resulted in a dilution of Bonairian culture where nearly 60% of the island’s population was not born in Bonaire and often leave due to the lack of opportunities. The second reason is that the tourism sector could contribute to a greater degree to the majority wellbeing. However, the focus on environmental protection has placed Bonaire in an enviable position, with regards to developing their Blue Tourism Sector.

FIGURE: CRUISE VISITORS in Thousands BONAIRE



Source: Statistics Netherlands

FIGURE: TOURIST VISITORS in Thousands BONAIRE



Source: Statistics Netherlands

Bonaire is ahead of the curve with regards to Blue Tourism and expects to increase its GDP inputs from 20% to 45% by 2021. Its strategic plan is based on a balance between the tourism sector and the capacity of the natural environment to host. Nature is providing the key driver towards a sustainable tourism model. The key objectives are:

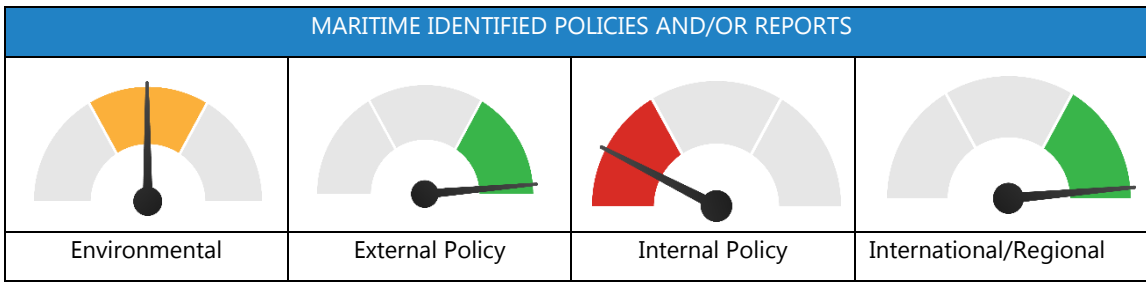
1. Expand the benefits stemming from tourism development to a broader segment of the Bonaire population
2. Convert Bonaire to a high-end destination that consists of at least 30% of the hotel inventory at a four-star level or more
3. Practice a cohesive branding strategy to attract more tourists and increase revenue and profitability
4. Elevate the tourist experience

S: (1) Legal framework for blue conservation (2) Tourism Strategy (3) Evolved Sector (4) Driving a Blue Destination Agenda (5) Recognition of needing better skills (6) Focus on keeping the tourist density low

W: (1) Lack of Diversification of tourism experiences (2) Underperforming of the sector (3) Lack of skills at the local level (4) Attractiveness of employment opportunities

O: (1) EU Funding; (2) Blue Investment (3) Increasing capacity skill development for hospitality providers; (4) Implementation of the ‘OCT Blue Tourism Standards and Audit Scheme’ (5) Sector reforming (6) Maritime Spatial Plan (7) Regional Partnership funding opportunities

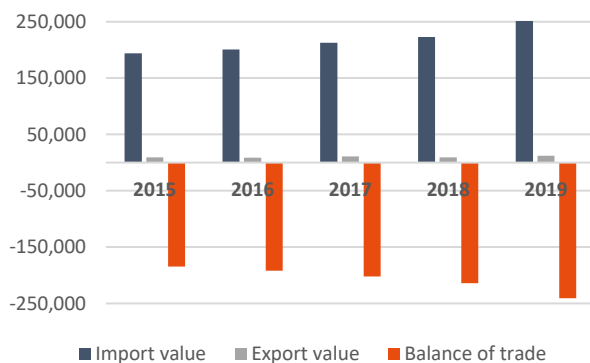
T: (1) Climate Change (2) Global Economic Downturn (3) Pandemic (4) Environmental destruction (5) Over-reaching carrying capacities



Bonaire Maritime Clusters are in the downtown area of Kralendijk (the capital city). Whilst others are located at the Bopec Oil Terminal, BonOil, Cureoil Mooring, Brasil Bay, Selena.

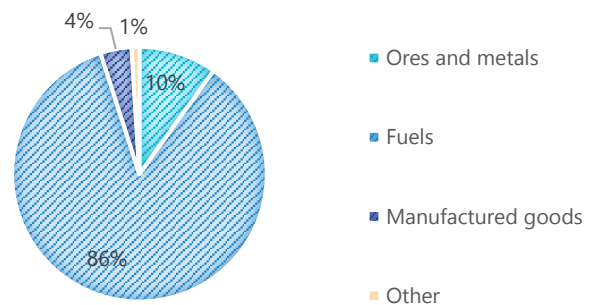
The Main Port Pier dimensions: Length: 69m, width: 15m, depth alongside: 10m, height above water level: 2m, max. load factor per m²: 2,000 kg. Vessels up to 224 meter and a deadweight of 50.000 ton may berth at the Northern Pier. This pier is designated for cruise ships only and is occasionally used by car carriers. The pier is located close to shops, restaurants, the old fort, Wilhelmina Park, a newly built Sea Promenade, and other attractions.

FIGURE: Total merchandise trade (millions of US\$) for Bonaire



Source: Statistics Netherlands

FIGURE: Export structure by product group in 2019 (as % of total exports) for Bonaire, Sint Eustatius and Saba



Source: United Nations Data

Top 5 partners in 2019 (exports, millions of US\$)	
Cyprus	0.621
France	0.175
Belgium	0.084
Brazil	0.055
Netherlands	0.036

Source: United Nations Data

S: (1) Strong potential maritime cluster (2) Pollution Response Plans (3) Environmental concerns are factored in

W: (1) No Maritime Spatial Plan (2) Lack of investment (3) Dependency on EU Associated Member State for maritime enforcement. (4) Lack of data (5)

O: (1) Development of the Bonaire Maritime Cluster (2) Increase of skills capacity at the local level (3) Mutual reinforcement of public and private interests; (4) Green Ports Initiative (5) Developing and extending regional maritime enforcement initiatives specific for Bonaire. (6) Enforcing a high environmental and safety awareness, so that economical and personnel damage is reduced, and legislation is well respected

T: (1) Climate Change (2) Lack of capital investment (3) Availability of local skills

11 CURAÇAO



Curaçao is a constituent country of the Kingdom of the Netherlands. Curaçao has full autonomy in all internal affairs, while the Kingdom of the Netherlands is responsible for the foreign affairs and defence. Every four years there are 21 members elected to the Staten, from there the Staten elects the Prime minister and Deputy Prime minister. Each Prime minister is sworn in by the Governor of Curaçao who is a representative of the Dutch monarchy. The constitution of Curaçao was signed in 2010.



Latitude: 12.1696° N
 Longitude: 68.9900° W
 Capital: Willemstad

Curaçao is in the Caribbean Sea, located on the continental shelf of South America. Along with the Netherlands, Aruba and Sint Maarten, they make up the Kingdom of the Netherlands. The island is part of the ABC Islands which is a group of islands in the Caribbean made up of Curaçao along with Bonaire and Aruba.

- As of 2020, the island's population totalled 164,093 permanent residents
- The median age in Curaçao is 41.6 years old
- The total fertility rate is 1.8
- The life expectancy is 79.4 years
- 88.6% of the population live in urban areas

FIGURE: POPULATION CURAÇAO

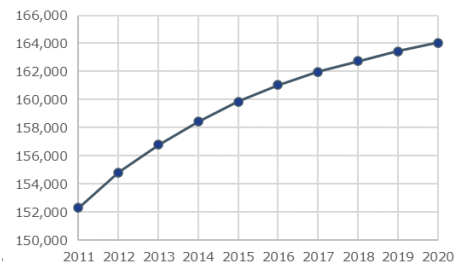
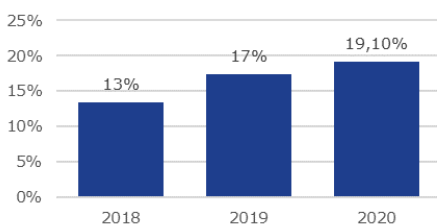


FIGURE: UNEMPLOYMENT RATE CURAÇAO

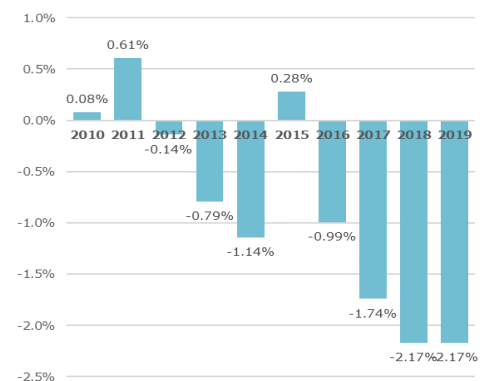


Curaçao has had a generally increasing unemployment rate since 2015. In 2020 the unemployment rate rose all the way to 19%. Generally, the island relies on tourism, petroleum refining and bunkering as sources of income. The hurricanes in 2018 caused a sharp negative decline in tourism, the hotel and restaurant business declining by 28%.

Source: Central Bureau of Statistics Curaçao

Since 2015 the economy has been in recession. The GDP in Curaçao was US\$3.1 billion in 2019. Since 2015 the economy has shrunken approximately 8%. The country has a high reliance on tourism but has faced both damage from hurricanes and Covid-19 in recent years, which has negatively impacted the economy.

FIGURE: ECONOMIC GROWTH CURAÇAO (% change)



Source: United Nations Statistics Division



FOOD SECURITY IDENTIFIED POLICIES AND/OR REPORTS			
Environmental	External Policy	Internal Policy	International/Regional



FOOD SOURCES *Fishery*: Fishery covers less than 1% of GDP. They are mostly small artisanal, but culturally and socially very important. The fleet consists of 15 full-time and 229 part-time fishers, 98 undecked multipurpose boats. Landings are estimated at 500-1,100 tonnes (80% pelagic species, the rest demersal and reef), although FAO shows catches of 20,000, rising to 40,000 tonnes, since 2010. In 2019, exports of marine products were €31 million, and imports have been constant at around €3 million. Curaçao has around 5 registered, foreign-owned vessels fishing in mid-Atlantic for tuna, which are not contributing to local economy. Attempts at long-lining in the exclusive economic zone (EEZ) failed. Circumstantial

evidence indicates over-fishing of reef area. **AGRICULTURE:** The agricultural sector has grown from 0.5% of GDP to 5.5% in 4 years, due to demand for healthier food; renewed interest in agroforestry & regenerative agriculture to combat desiccation and nutrient run-off. There is recent cooperation with Colombia on vermi-composting. There is a need for basic data on local production and consumption, and on natural resources, but human and financial capacity need to be increased. Capacity constraint is a systemic problem, which could be increased through intra-regional cooperation. **FRESH WATER:** Surface water is scarce, and groundwater is over-used for agriculture and households, leading to sea-water infiltration. Drinking water is produced by desalination of seawater (with 30% leakage losses). A new fresh- / groundwater strategy has been developed.

NUTRITION Increasing imports of processed foods is leading to lifestyle diseases.

HOUSEHOLD INCOME SOURCES With a GDP per capita of US\$ 20,500 (2019), Curaçao is considered to be a high-income economy and boasts one of the highest standards of living in the Caribbean region.⁵⁵

ENVIRONMENT Natural vegetation is dry woodland, with signs of overgrazing (goats). Curaçao has several sites of exceptional conservation value, besides the Christoffel National Park. It has several healthy reefs, especially on the north shore and eastern and western sides of the south coast, and mangrove areas in the north. It has about 60 km² of protected wetland and National Park. More than 50 species are at risk on land and sea. Protected areas are not actively managed due to lack of capacity. Refinery now accounts for less than 9% of GHG emissions (down from 38.5% in 2015, when it was fully operative), the utility company for 16.5% and transport 17.3%. Per capita, 14.4 ton CO₂ is emitted, which now compares favourably with 22 in Aruba and 10 in the Netherlands. Coral cover has declined considerably over the last twenty years, probably due to domestic sewage seepage through calcareous coastal areas of rapid housing development (Jan Thiel, Blauwbaai, Boca St. Michiel, the Rif area, Cas Abou, Coral Cliff, Lagun, Westpunt-Playa Kalki).

S: (1) Disposable income is high for the region (2) Education level is generally high.

W: (1) Limited but increasing domestic food supply (2) Fishing legislation is not enforced (3) There is no up-to-date baseline data on natural resources

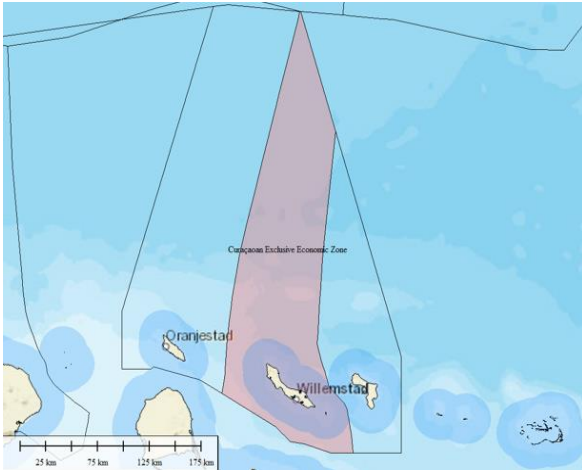
O: (1) Thorough resource inventory would give sound base for future policy (2) WWF-NL is planning to review and revise legislation on environment and fishing; the outcome can also be helpful to Sint-Maarten (3) The Covid-19 shock to imports, coupled with health messages relating to overweight, has stimulated popular interest in home-growing of fresh horticulture. This opportunity should be seized, by providing extension support. It is strategically important.

T: (1) Administrative link to the Netherlands tends to result in not looking for opportunities for relating regionally with neighbouring islands within the same ecology.

⁵⁵ [Curaçao \(paho.org\)](http://paho.org)



BLUE ENERGY IDENTIFIED POLICIES AND/OR REPORTS				
Marine energies resource	Marine energy impact on CO ₂ emissions	External Policy	Internal Policy	International/Regional



OCT needs	
Consumption	Produced: 891 GWh/yr (655 GWh/yr for aqualectra) 6.2MWh/yr/pers.
Levelized Cost of Energy	Not known - integrated Utility - most likely around 0.35 -0.40€/kWh
Current tariff (€/kWh)	Between 0.25 and 0.32€/kWh (based on a fix part + variable part linked to fuel prices)
Current CO ₂ /kWh	
Current CO ₂ /kWh/pers.	
Total current CO ₂ emission	

OCT energy resource	Resource Atlas Knowledge	Inside Territorial Waters	Outside Territorial Waters	Policy / Planning	Targeted objectives
Fixed wind	Embryonic				Aligned
Floating wind	None				Aligned
Tidal current	Embryonic				Aligned
Wave	None				Aligned
SWAC / OTEC	Partial				Aligned
Salinity gradient	None				Aligned
Tidal range	None				Aligned
Marine Storage	None				Should be higher
Marine Hydrogen	None				Should be higher

S: (1) Good awareness of new technologies (2) Open policy (3) Utility is pushing for renewable energy (3) Access to private sector and investors (4) Utilities of the 3 ABC islands have a good working relation

W: (1) Tourism sector is important for the economy (2) Lack of capacity (4) Public sector does not have experience in leading complex studies

O: (1) OCTA could coordinate programs to reach an optimized size (2) European founding program support Renewable Energies to compensate high LCOE for low TRL (3) Dynamism of the neighbouring islands

T: (1) Competition with PV onshore (2) Calamities in link with Climate change (3) Taxes on fuel would disappear with renewable energy

OCT Means	Academic	Public sector	Private sector	Clusters / Innovation	Financing	Advocacy / NGOs
Means to reach the targets						
Reachable means						

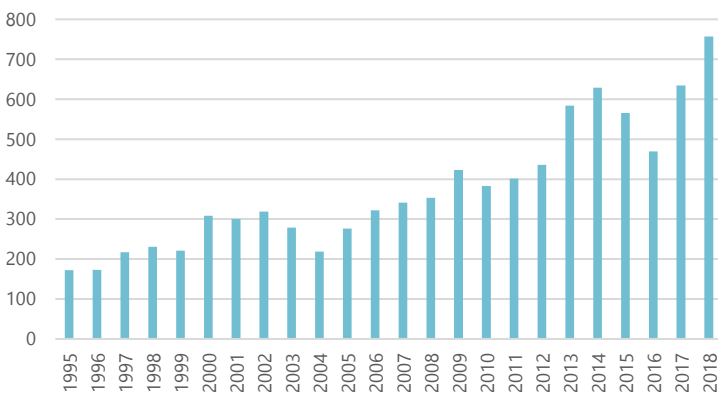


BLUE TOURISM IDENTIFIED POLICIES AND/OR REPORTS			
Environmental	External Policy	Internal Policy	International/Regional



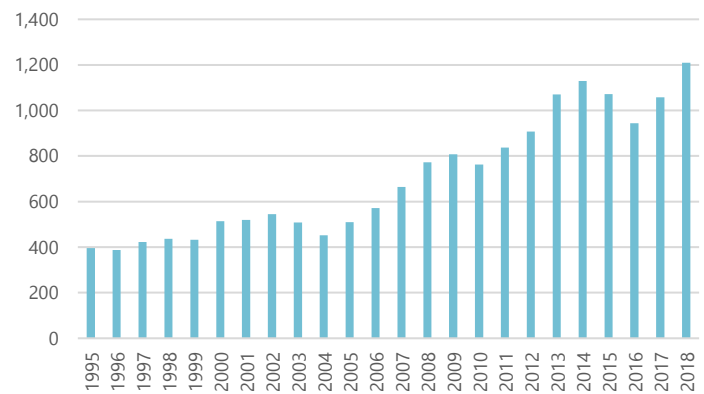
Curaçao has a well-developed Tourism Strategy 2015 – 2020 and has a strong focus on the tourism sector. The sector has demonstrated resilience against outside shocks and been able to steadily increase its prominence in Curaçao’s economy, having an upward trend. Its share of the island’s economy is nearly 18% of the total economy, impacting every economic sector on the island. In addition, the tourism sector has become a substantial source of employment on the island. Nearly 23% of jobs are created and sustained directly or indirectly by the tourism sector. As with all OCT countries, it has been impacted by the Covid-19 pandemic.

FIGURE: CRUISE VISITORS in Thousands CURAÇAO



Source: United Nations Data

FIGURE: TOURIST VISITORS in Thousands CURAÇAO



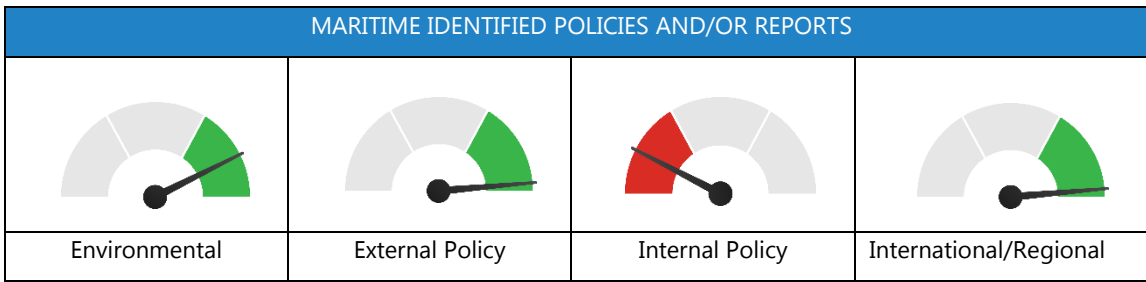
Source: United Nations Data

Curaçao has gained a significant hold on the American market which has contributed to the consistent increase in cruise and visitor numbers. Its tourism contributes over EUR 450 million to the economy, which accounts for approximately 18% of the country’s GDP and 26% of the contribution to foreign exchange.

Cruise visitors projected in 2015 from North America alone was poised to increase from 16.7 million in 2015 to 19.8 million in 2020.

Considering that the coastal tourism sector depends on the natural capita as the primary attractor, it will be critical for the sector to undergo reforms from which to protect that resource into the future.

- S:** (1) Tourism Master Plan (2) Environmental policy (3) Marine Protected Areas (4) Capitalising on aviation as transportation mode
- W:** (1) Tourism plan expiry (2) Lack of skilled workforce (3) Service quality (4) Poor institutional support (5) Public private engagement (6) Diversification (7) Dependency on mass tourism model (8) Lack of Curaçao’s brand position (9) Lack of consideration of the natural capita which is the key to ensuring sustainability of the sector.
- O:** (1) Developing the Curaçao Blue tourism strategy 2021 – 2030. (2) Implementation of the ‘OCT Blue Tourism Standards and Audit Scheme’ (3) Maritime Spatial Plans (4) Development of nature v tourism indicators (5) Develop the coastal tourism cluster (6) Funding and investment opportunities with other OCTs (7) Training for Tourism hospitality stakeholders
- T:** (1) Climate change (2) Changing visitor expectations (3) lack of investment (4) Mass Tourism model (5) Environmental degradation (6) Over-reaching carrying capacity (7) Inaction (8) Global economic downturn (9) Pandemic risk

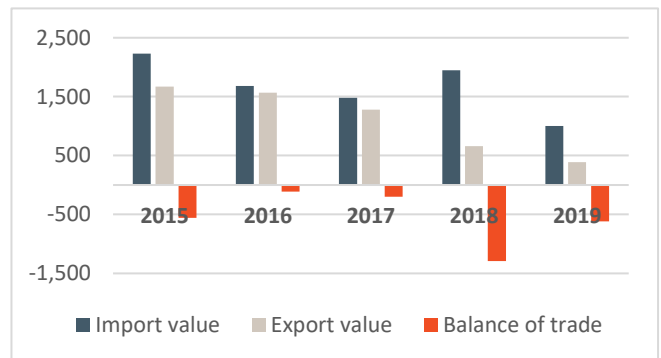


Curaçao's ports provide the central location for the clusters, and are all-natural sheltered ports that offer safe, fast, and reliable handling of ships and cargo. The ports available for commercial purposes are Willemstad, Fuik Bay, Caracas Bay, Bullen Bay and St. Michiel's Bay. The centrally located ports are outside the major hurricane routes and offer many competitive advantages. The Port of Willemstad is the largest port of Curaçao, housing a wide variety of maritime facilities for all types of vessels. The entrance channel to this port, the St. Anna Bay, is situated in Willemstad, the capital of Curaçao. Cruise ships and other vessels dock at the Megapier Cruise Terminal at the entrance of the bay and at (cruise) terminals located

at the Otrobanda side of the bay. At the end of its entry lies the Schottegat area, which houses the main facilities of the port including the region's largest oil refinery and dry-dock, an economic zone area, container terminal and cargo wharves.

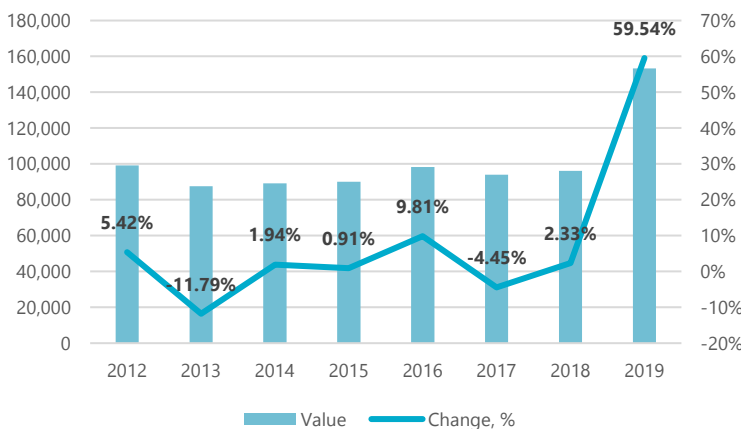
In general, throughput is reasonably stable with a significant reduction of tanker traffic. However, since 2018, container traffic has witnessed a substantial increase. This offers a noteworthy opportunity for diversification. Considering the global increase of container traffic this is a well-founded opportunity for Curacao. Container traffic is recognised as safer than tanker traffic as the risk of pollution due to a collision or accident by a tanker is far greater than that of a container vessel.

FIGURE: Total merchandise trade (millions of US\$)



Source: OEC

FIGURE: Curaçao container throughput



Curaçao processed 153,302.71 twenty-foot containers equivalent in 2019, up from 96,089 twenty-foot equivalent the previous year, this is a change of 59.54%.

S: (1) Increase in Container Traffic (2) Port Management (3) Pollution Response Plans (4) Cruise ship special arrangements (5) Marine environmental reports

W: (1) Private sector engagement (2) Investment transparency (3) Local policy (Maritime Governance) (4) Capacity (5) Availability of Training/Skills (6) Inadequate enforcement capacity

O: (1) Optimisation of port facilities to increase container diversification (2) Investment in Ports reception facilities to embrace new fuels (3) Develop Curaçao maritime Blue Economic Sector (BES) cluster to enable full economic realisation (4) increase training opportunities (5) enable localised maritime enforcement to monitor all maritime activities

T: (1) Climate Change (2) Continued lack of human capital (3) Lack of investment (4) Fragmentation of the maritime (BES) cluster

12 FRENCH POLYNESIA



French Polynesia is a collective of islands and atolls under the French Republic. The French President is therefore also the head of state of French Polynesia. It has since 2004 been known as a *pays d'outre-mer au sein de la République* (overseas country inside the Republic). French Polynesia has control over primary and secondary education, health, town planning and the environmental policy decisions. French Polynesia has an Assembly with 57 members voted in every five years. These 57 members elect a president by simple majority to lead the country. French Polynesia is divided into five groups of islands: the Society Islands archipelago, the Windward Islands, the Leeward Islands, the Tuamotu Archipelago, the Gambier Islands, the Marquesas Islands, and the Austral Islands.

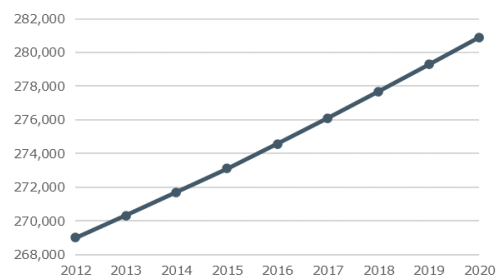


Latitude: 17.6797° S
 Longitude: 149.4068° W
 Capital: Pape'ete

French Polynesia is composed of five groups of islands dispersed around an area the size of mainland Europe. The main island, Tahiti, is home to 70% of the population of French Polynesia. Many of the islands have a very low population or are completely uninhabited.

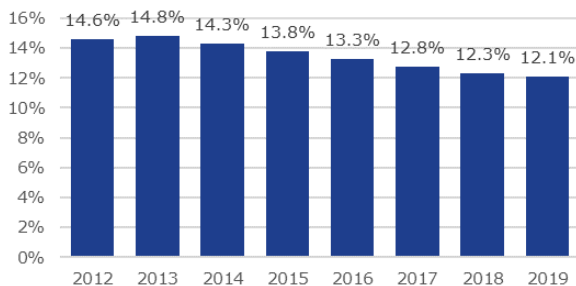
- As of 2020, the country's population totalled 280,908 permanent residents
- The median age in French Polynesia is 33.6 years old
- The total fertility rate is 2.0
- The life expectancy is 78.2 years
- 63.9% of the population live in urban areas

FIGURE: POPULATION FRENCH POLYNESIA



Source: World Bank

FIGURE: UNEMPLOYMENT RATE FRENCH POLYNESIA (%)

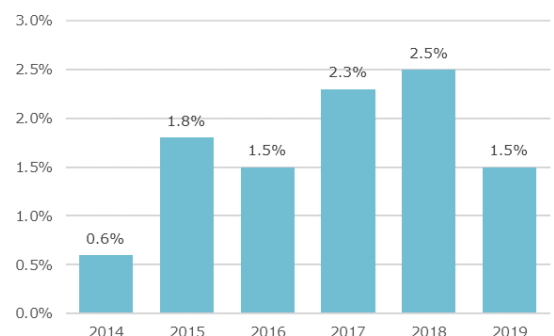


Source: World Bank

Since 2012 the unemployment rate has been steadily falling, reaching its highest recorded point in 2013 when the unemployment rate was 14.8%. The country is dependent on tourism and agriculture (primarily noni juice and black pearls)

In 2019, French Polynesia's gross domestic product (GDP) was US\$ 5.9 billion despite a falling growth in GDP from the previous year. The current GDP figures are lower than in the early 1990s. The country has been impacted by the global financial crisis and the Covid-19 crisis as the country is reliant on the tourism sector.

FIGURE: ECONOMIC GROWTH FRENCH POLYNESIA (% change)



Source: United Nations Statistics Division & ISPF



FOOD SECURITY IDENTIFIED POLICIES AND/OR REPORTS			
Environmental	External Policy	Internal Policy	International/Regional



FOOD SOURCES: Food needs are 50% satisfied by local production from market gardening, traditional tubers, and high consumption of fish. Supplementary food imports mainly arrive from France and New Zealand by boat. **Fishery:** French Polynesia has an Exclusive Economic Zone (EEZ) of 5,030,000 km² (Land area 3,521 km²), but only about 40% is exploited commercially, North and West, within day's reach of Port de Pêche at Pape'ete (Tahiti). There are about 70 small long-liners targeting albacore, bigeye, and yellowfin tuna. There are about 400 licensed small boats: 75% in Society Islands, 50% based in Tahiti. There are no catch quota restrictions for licensed fishermen (licence qualifies for fuel subsidy and a grant of

25% of construction costs for small boats). About half of boats are constructed locally (in Pape'ete). Lagoon fishing, especially in the remote and disperse Tuamotu Archipelago, is vital for food security: this is practiced by almost the whole population for home consumption (some in west of Tuomotu bring catches to Tahiti). There are no international fishing agreements since 2000. The French Navy ensures security with surface, aerial and satellite surveillance. **Aquaculture:** This is practiced as niche income earnings in atolls, but it is not a food security option. This mostly concerns blue shrimp, pearls, oysters, sea cucumber, and clams. Research is conducted on husbandry of small fish species for local consumption. Pollution problems of aquaculture in enclosed atoll environments often outweigh benefits. Research is conducted on seaweeds, as water cleansing agent. All fisheries policy and legislation emanate locally from the National Assembly, such as a 10-year plan: there are no impositions from France.

NUTRITION Under-nourishment is not a problem, nor is poverty. Increasing imports of processed foods is leading to lifestyle diseases. Micronutrient deficiencies are possible, due to increased intake of processed foods (common in neighbouring countries), but the subject requires further study.

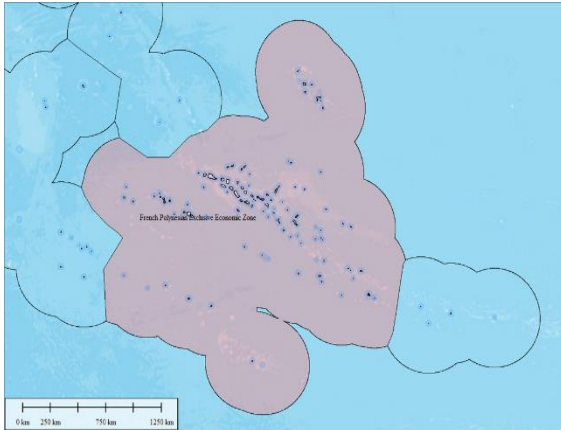
FRESH WATER: Mostly through streams or groundwater, depending on island, but the water table is not yet affected by salinity.

ENVIRONMENT The Northern edge of the South Pacific cyclone belt is not habitually affected. Extreme weather is not notably more frequent in French Polynesia. Lagoon reefs provide effective barrier against high seas destroying islands, although elevated shelters are already in place in vulnerable islands. Climate change not predicted to affect tuna fisheries greatly, many sub-species are predicted to do better. A large threat would come from coral whitening (resulting in a loss of fish nurseries), but French Polynesia is not as much affected by this compared to other regions.

- S:** (1) Very large EEZ, only partly exploited (2) Significant population with relatively high level of education, but with roots in tradition. (3) Fresh water availability on larger islands, either from groundwater or rain capture, permits agricultural production. (4) Marine economy increasingly diversified, with a lot of scope for expansion.
- W:** (1) In long-term, a lot of the lower archipelagos likely to be lost to sea-level rise, possibly creating population pressures. (2) Distances are great internally, making transport and movement expensive, and externally, making trade and emigration expensive and difficult (3) Over-reliance on imported foods.
- O:** (1) Improve agricultural productivity through research into climate resilience; (2) Incentivise local seafood processing, as a food security strategy, by: Improving access to cold storage. Promoting local canning of marine foods (fish, molluscs, algae). (3) Direct tourism towards sport-fishing, as high value, low off-take industry, also as "presence" in EEZ, and adjunct to fisheries surveillance.
- T:** (1) Increasing incidence of extreme weather and of natural disasters (flood, storm, drought) which disrupts imported food supply and local production - not yet felt. (2) Waste disposal - human, industrial and from aquaculture. (3) Chronic nutrition-related complaints (obesity, diabetes, heart disease) due to excessive reliance on sugary, fatty, salty processed foods. (4) Decline of local, traditional agriculture increases vulnerability to shocks.



BLUE ENERGY IDENTIFIED POLICIES AND/OR REPORTS				
Marine energies resource	Marine energy impact on CO ₂ emissions	External Policy	Internal Policy	International/Regional



OCT needs	
Consumption	652 GWh (2019) and (2010-2019) 633 GWh/yr 2,341 kWh/pers (2019) and (2010-2019) 2,333 kWh/pers/yr
Levelized Cost of Energy	Not known - integrated Utility - most probably around 0.30-0.35€/kWh
Current tariff (€/kWh)	0.16 €/kWh to 0.35€/kWh
Current CO ₂ /kWh	
Current CO ₂ /kWh/pers.	
Total current CO ₂ emission	

OCT energy resource	Resource Atlas Knowledge	Inside Territorial Waters	Outside Territorial Waters	Policy / Planning	Targeted objectives
Fixed wind	Embryonic				Could be higher
Floating wind	None				Could be higher
Tidal current	None				Aligned
Wave	Embryonic				Should be higher
SWAC / OTEC	Partial				Should be higher
Salinity gradient	None				Aligned
Tidal range	None				Aligned
Marine Storage	None				Should be higher
Marine Hydrogen	None				Should be higher

S: (1) Very large marine territory (2) Good level of academic structure (3) Existing Innovation centres and marine clusters (4) Utility well involved in energy transition (5) Strong link and experience with ocean challenges

W: (1) Lack of capacity (2) Tourism important in the economy (3) Disseminated islands difficult to operate (4) Important internal differences in context (5) Lack of neutral diagnostic of marine resources

O: (1) OCTA could coordinate a global program (2) European funding programs to renewable energy (3) Possible synergies with pacific OCTs

T: (1) Climate change impacts including dying coral and sea level rising (2) Local ecological awareness stronger than climate awareness (3) Taxes on fuel would disappear with renewable energy

OCT Means	Academic	Public sector	Private sector	Clusters / Innovation	Financing	Advocacy / NGOs
Means to reach the targets						
Reachable means						



BLUE TOURISM IDENTIFIED POLICIES AND/OR REPORTS			
Environmental	External Policy	Internal Policy	International/Regional



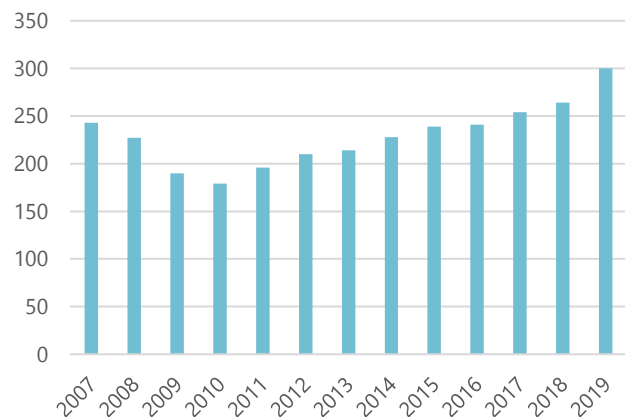
Coastal tourism is a leading source of employment for many French Polynesian island residents. However, a conflict of interest exists between local economies due to increased competition with internationally owned companies, whose profits do not contribute to the local economy, but largely go abroad, has a drastic impact on the sustainability of the sector. This is, for example, the case in Tahiti where the international hotels take the majority of the tourism business. The complexity and different requirements and needs of the diverse islands such as Tahiti, Fakarava, and Nuku Hiva frustrate the development of a single model.

However, there is a huge opportunity post Covid-19 pandemic to develop an approach based on a Blue Tourism model. The current tourism strategy 2015-2020 is expired, providing an opportunity to renew with Blue Tourism at the heart of the new strategy.

The opportunities for French Polynesia are many, the pandemic has afforded an opportunity to 'reset' and develop a tourism Sector that takes heed of its qualities, in particular its natural resources. Applying a structured and island-wide sustainable Blue Tourism strategy will provide all islands the guidance they will require to ensure the longevity of the sector.

Additionally, the provision of specialised training to the local tourism providers will increase the economic contribution to the local economy and restrict the amount leaving the island.

FIGURE: TOURIST VISITORS in Thousands FRENCH POLYNESIA



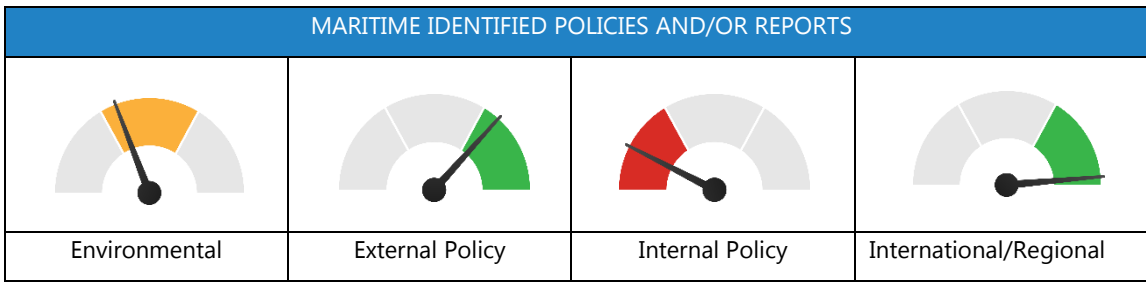
Source: United Nations Data

S: (1) Strategic plan expired (context for new Strategic plan development) (2) Rich natural resources (3) Established tourism sector (4) Increasing visitor numbers (5) Diversity of sector 'attractors'

W: (1) Lack of regulation concerning natural resources (2) Conflict of interest International versus Local Providers (3) Economic returns not being realised at the local scales (4) Lack of local skills (5) Unsustainable practices

O: (1) Development of the BES Tourism cluster (2) New Blue Tourism strategy (3) Maritime Spatial Planning (4) Funding and investment through combined regional applications (5) Implementation of the 'OCT Blue Tourism Standards and Audit Scheme' (6) Developing sustainable tourism indicators (7) Skill development for local tourism providers (8) Increasing investment into transport modes

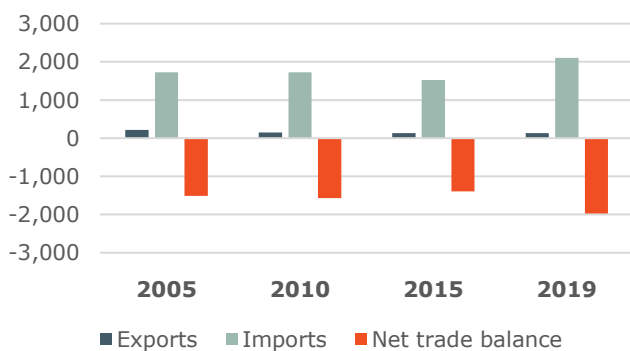
T: (1) Climate change (2) Global economic downturn (3) Environmental degradation (4) Carrying capacity exceeded (5) Continuation of mass tourism model (6) Pandemic risk



French Polynesia ports include, Atuona Hiva Oa Marquesa Islands, Bora Bora, Fakarava Tuamotu Islands, Huahine, Maiao Society Islands, Makemo Tuamotu Archipel, and Mangareva Gambier Islands.

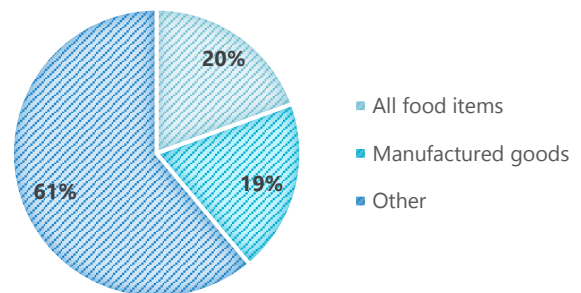
The key maritime cluster is located on French Polynesia Port of Papeete which is a major stop on the South Pacific Ocean trade routes. Its main exports are sugar cane, copra (dried coconut meat), mother of pearl, coffee, and vanilla. It is also an important base for cruise tourism in French Polynesia and on Tahiti. However, the smaller clusters are equally important as they contribute to the overall economic value of the sector. Additionally, they can provide a system for harmonised local capacity development.

FIGURE: Total merchandise trade (millions of US\$)



Source: United Nations Data

FIGURE: Export structure by product group in 2019 (as % of total exports)



Source: United Nations Data

Top 5 partners in 2019 (exports, millions of US\$)	
Japan	36
China (Hong Kong SAR)	34
USA	22
France	21
China	4

Source: United Nations Data

S: (1) Increase in French Polynesia Fleet (2) Port Management (3) Cruise ship special arrangements (4) Marine environmental reports

W: (1) Private sector engagement and Investment transparency (2) Local policy (Maritime Governance) (3) Capacity and availability of Training/Skills (4) Inadequate local maritime enforcement capacity

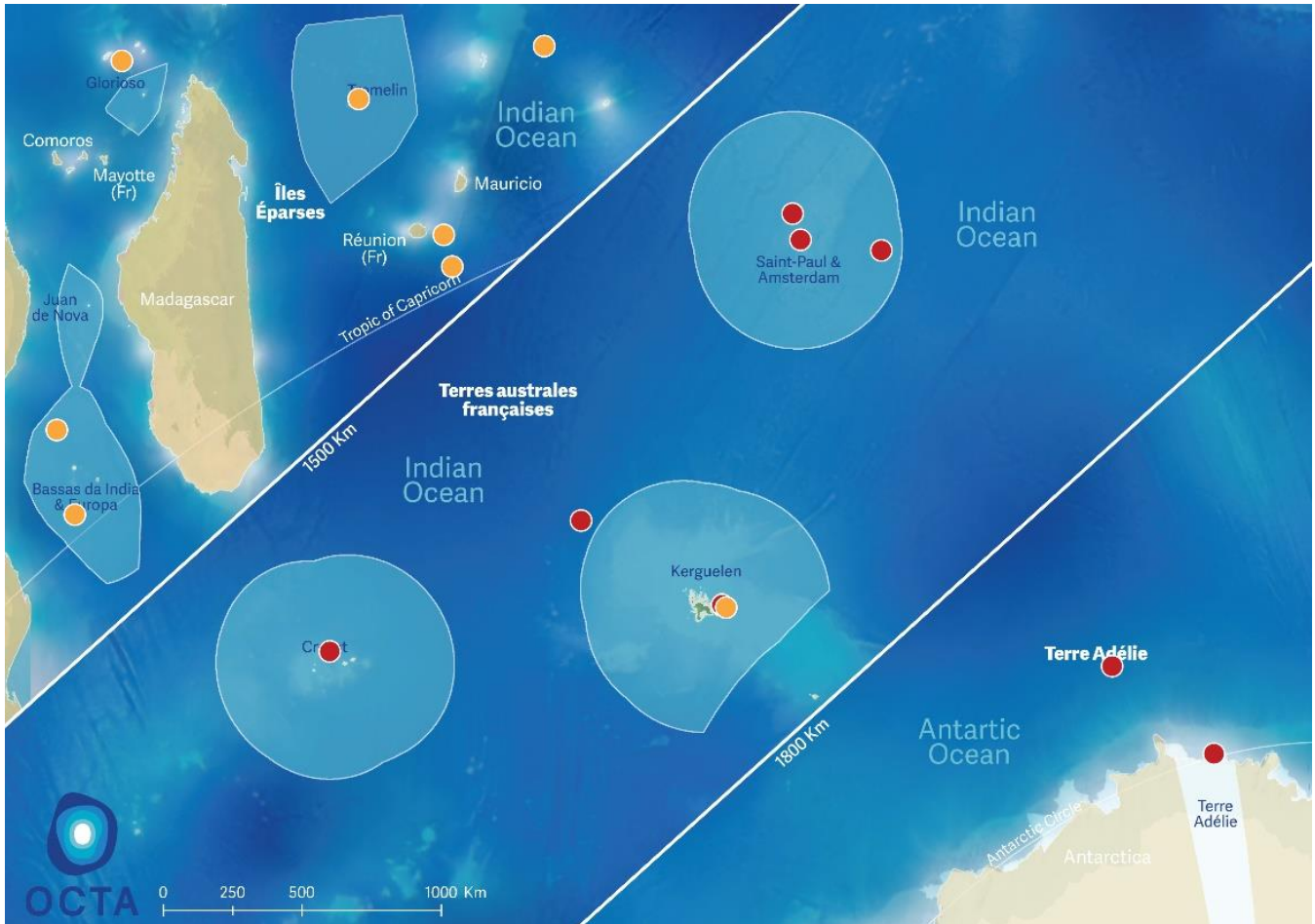
O: (1) Optimisation of port facilities to increase Blue Economic Sector (BES) diversification. (2) Investment in Ports reception facilities to embrace new fuels (3) Develop French Polynesia maritime (BES) cluster to enable full economic realisation (4) Increase training opportunities (5) Enable localised maritime enforcement to monitor all maritime activities

T: (1) Climate Change, continued lack of human capital and lack of investment (2) Fragmentation of the maritime (BES) cluster

13 FRENCH SOUTHERN AND ANTARCTIC LANDS (TAAF)



The French Southern and Antarctic Lands (TAAF) are a collection of French territories. These include Adélie Land, Crozet Islands, Kerguelen Islands, Saint Paul and Amsterdam Islands and the Scattered Islands. The territories are administered by an administrateur supérieur working from Reunion Island. Each of the districts has a chief who is responsible for keeping public records and acts as judicial police.



Latitude: 49.2804° S

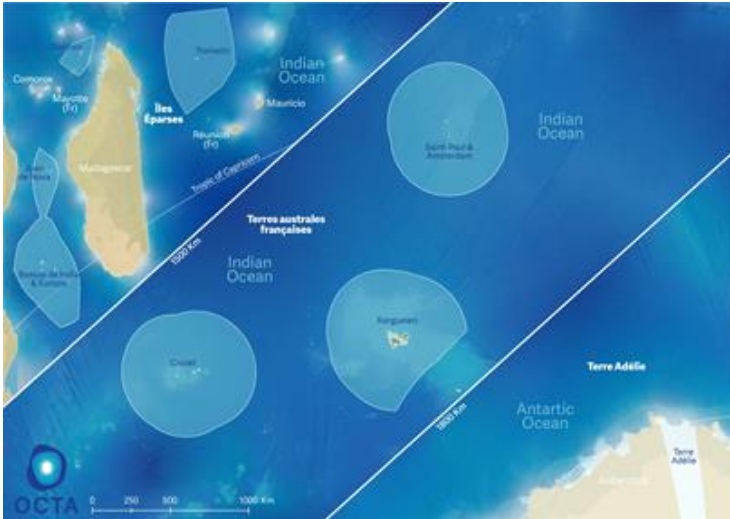
Longitude: 69.3486° E

Capital: Saint Pierre, Réunion (*administrateur supérieur*, not geographically assigned)

The territories include Adélie Land, which is a sector of Antarctica which has been claimed by the French government. There were no indigenous people on these islands. They are only inhabited by researchers, scientists, and support staff. The population of TAAF varies between 100 and 250 depending on the season. For this reason, data on unemployment and GDP is hard to find, but also not very relevant.



FOOD SECURITY IDENTIFIED POLICIES AND/OR REPORTS			
Environmental	External Policy	Internal Policy	International/Regional



FOOD SOURCES All food is brought in monthly by ship. Any increase in population (including tourism) has repercussions on the food and water supply.

Fishery: TAAF has an extensive, exclusive fishing zone. The (commercial) catch is not consumed within the TAAF but is exclusively exported. There are 115 pelagic species recorded between 2019-2022. The permitted annual offtake of Patagonian Toothfish (légine australe) (*Dissostichus eleginoides*) is 5,200 tonnes per year for the Kerguelen islands, and 800 tonnes per year for the Crozet archipelago. This is divided between 6 companies with permits to make 3-4 fishing incursions per year. The Réunion Freezer Longliner

Shipowners Association (SARPC), which is based on Réunion since 2002, has a Marine Stewardship Council certification. It protects the interests of French Toothfish fishers and plays a major role in responsible resource management and protecting the environment. Lobster fishery is conducted by one factory ship working the waters of Saint Paul and Amsterdam. The fishermen mainly use small (dependent) boats, and are mainly fishing for southern lobster (*Jasus paulensis*), cabot (bass groper) (*Polyprion* sp.), le rouffe antarctique (bluenose warehou) (*Hyperoglyphe antarctica*), saint-paul – striped trumpeter (*Latris lineata*) and St. Paul’s fingerfin (*Nemadactylus monodactylus*). Other common catch includes the Yellowtail amberjack (*Seriola lalandi*), barracuda (le tazard) (*Thyrsites atun*), and octopus (*Octopus* sp.). Fishing occurs from mid-November to end July. **Food Trade:** Imports are brought in monthly by ship.

NUTRITION There is no available data: the entire population live on an isolated research station.

FRESH WATER Rainfall is sparse, and storage is limited (which is strained in case of visitors)

HOUSEHOLD INCOME SOURCES Government salaries (Fishermen are not residents of TAAF).

S: (1) Rich, specialised fisheries in an Extensive marine Exclusive Economic Zone (2) Small population to feed (3) Highly educated, technical population (4) Zone has been studied intensively

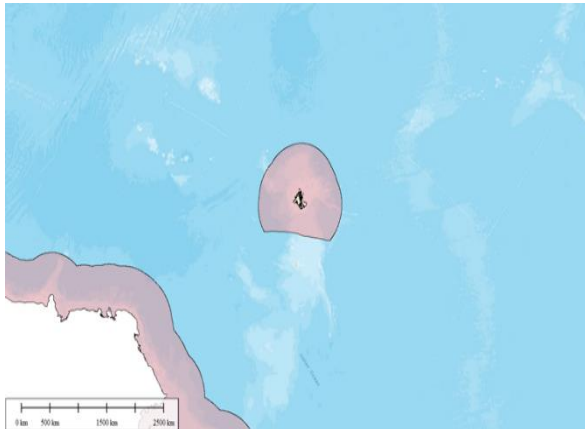
W: (1) There is virtually no domestic food supply, no buffer against an environmental or economic crisis (2) Fishing legislation and enforcement can be improved (3) There is virtually no up-to-date baseline data on the natural resource base.

O: (1) Tourism raises the profile of Antarctic ecology and climate threats (granted that food and water supply can be improved) (2) Possibility of in-station hydroponics (3) Fish-processing on-site could have an economic future

T: (1) Tourism increases food (import) requirements, waste disposal, and potentially the environmental footprint (2) Climate Change: sea level rise and ice melt



BLUE ENERGY IDENTIFIED POLICIES AND/OR REPORTS				
Marine energies resource	Marine energy impact on CO ₂ emissions	External Policy	Internal Policy	International/Regional



OCT needs	
Consumption	3.6 GWh/yr (24 MWh/yr/pers)
Levelized Cost of Energy	Approximal: 0.65€/kWh
Current tariff (€/kWh)	Free of charge
Current CO ₂ /kWh	
Current CO ₂ /kWh/pers.	
Total current CO ₂ emission	

OCT energy resource	Resource Atlas Knowledge	Inside Territorial Waters	Outside Territorial Waters	Policy / Planning	Targeted objectives
Fixed wind	None				Aligned
Floating wind	None				Aligned
Tidal current	None				Aligned
Wave	None				Must be higher
SWAC / OTEC	None				Aligned
Salinity gradient	None				Aligned
Tidal range	None				Aligned
Marine Storage	None				Could be higher
Marine Hydrogen	None				Could be higher

S: (1) Climate change awareness (2) Expatriate scientific population, sensible to technologies development (3) exceptional limit conditions for pilot's experimentation (4) high strategic interest for autonomy and renewables (5) good resource and energy potential

W: (1) The size of the disseminated island in combination with a small population means a lower energy need. This may imply difficulties to reach cost efficiency in production technologies (2) Electricity fully paid by France (3) Project permitting decision making at the level of each one of the 5 Districts' chief officer (4) Very difficult weather conditions implying multi-skilled local teams.

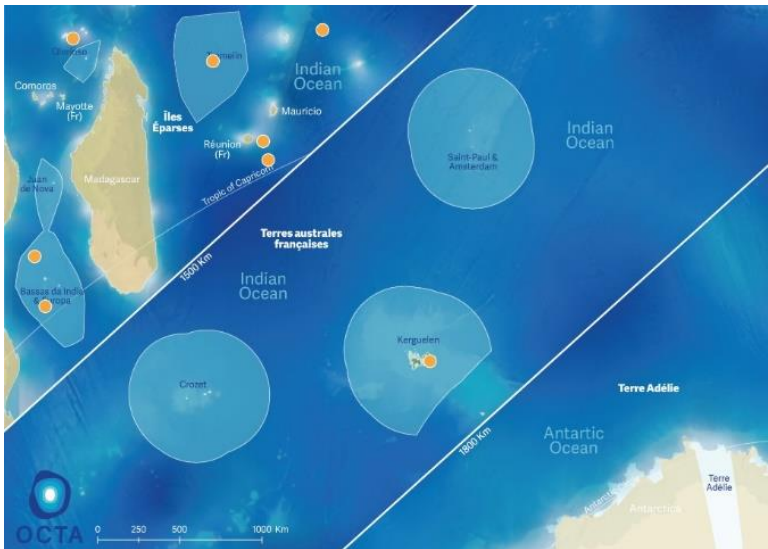
O: (1) OCTA could coordinate a global program (2) European founding program for renewable energy (3) Scientific programs subsidized by Europe/France needing CO₂ criteria alignment

T: (1) Climate change impacts (2) Reluctance to low Technology readiness level because of risks on High-Tech equipment (3) high need in rusticity and easily managed equipment even for High-Tech (4) very high requirements in term of biodiversity, natural and landscape reserves and species preservation.

OCT Means	Academic	Public sector	Private sector	Clusters / Innovation	Financing	Advocacy / NGOs
Means to reach the targets						
Reachable means						



BLUE TOURISM IDENTIFIED POLICIES AND/OR REPORTS			
Environmental	External Policy	Internal Policy	International/Regional



The French Southern and Antarctic lands consist of Adélie Land (Antarctica), as well as Crozet archipelago, Kerguelen islands, St Paul and Amsterdam islands (in the subantarctic zone), and the Scattered islands (Europa, Glorious, Juan de Nova, Bassas da India and Tromelin) in the Indian Ocean. The northernmost islands are Glorious Islands (11.3°S). Climate is tropical to polar. The Kerguelen islands for example are located 3,300 km away from any sort of civilization, have no native inhabitants and are permanently occupied by 50 to 100 French scientists, engineers, and researchers at any given time of the year.

The main island of Kerguelen is surrounded by almost 300 lonely satellite islands. Massive active glaciers cover the main island, which stretches nearly 160 kilometers long and reaches 1,964 meters at its highest peak. The island can only be reached by ship 4 times per year.

Currently, TAAF has no real tourism issues due to the very special type of visitors it has, but as visitors strive to seek alternatives to the sun, sea, and beach market it is critical that options for sustainable or 'Blue Tourism' is considered if the very sensitive arctic environment can adapt to visitor pressure. It is estimated that fishing rights (limited to 6 companies) and tourism amount to around € 7 million per year.

S: (1) Specialised Tourism (2) Potential to increase visitor numbers (3) Diversification

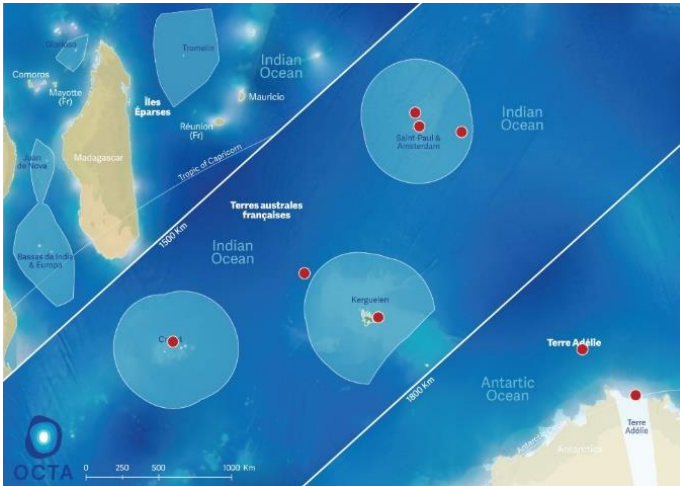
W: (1) Very sensitive area (2) Lack of internal policy (3) Little support for infrastructure (4) Lack of training for hospitality providers

O: (1) Develop Blue Tourism Strategy (2) Introduce Blue Tourism Licence for visitors (3) Implement the 'OCT Blue Tourism Standards and Audit Scheme' (4) Develop tourism carrying capacity indicators (5) Specialised training for hospitality providers

T: (1) Over-reaching carrying capacity (2) Inaction (3) Environmental destruction (4) Managing Waste (5) Invasive species.



MARITIME IDENTIFIED POLICIES AND/OR REPORTS			
Environmental	External Policy	Internal Policy	International/Regional



The French Southern and Antarctic Lands maritime claims a territorial sea with an outer limit of 22 kilometre. Its Exclusive Economic Zone is 370 kilometres from the Kerguelen Islands and the Scattered Islands (does not include the rest of French Southern and Antarctic Lands). Juan de Nova Island and Tromelin Island claim a continental shelf of 200-meter depth, or to the depth of exploitation. There is little maritime activity. In 2019 it is reported that The French Southern and Antarctic Lands own (flagged) three general cargo vessels with a deadweight of 3,000 tonnes.

The Main Port – the Port-aux-Français has a shallow seaport and a quay for unloading supply ships, including the Marion Dufresne. The station, in addition to logistics necessary to its operation, consists of scientific laboratories, technical installations (meteorology, telecommunications, satellite tracking, et cetera), a cinema and a small medical centre.

The port station is located on the Gulf of Morbihan. The station has about 45 inhabitants in winter; the population can rise to more than 120 in summer.

Due to the variation in population and the main activity associated with research, there is little to communicate in this report. The main threat to the French Southern and Antarctica lands remains the impacts of Climate Change.

- S:** (1) Remote port with natural restrictions (2) Slow development due to climate (3) Marine Protected Area
- W:** (1) Lack of specific Integrated Blue Economic Sector (BES) Maritime Strategy (2) Availability of enforcement (3) Shallowness of port (4) Skills capacity (5) Ability to attract and keep skilled workforce due to climate
- O:** (1) Green fuels availability (2) Development of port diversification plan (3) Application for EU Funding (4) Maritime Spatial Plan (5) Develop Maritime Cluster with other OCTs (6) Increase technological support systems
- T:** (1) Climate Change (2) Increasing demand for supplies (3) Environmental Degradation (4) Increase of cruise ship visits



Greenland is part of the Kingdom of Denmark, but since 1979 it has self-governed. Greenland has a Parliament consisting of 31 members and a Government which consists of 9 ministers. The head of state is the monarch of the Kingdom of Denmark. The local government is responsible for the judicial system, border control, environmental, and policing policies. The Kingdom of Denmark is responsible for monetary, foreign, and military policy. The Danish monarch is represented by a high commissioner. Greenland also elects two representatives to the Danish parliament. It is not part of the EU despite Denmark being a member of the organisation.



Latitude: 71.7069° N
 Longitude: 42.6043° W
 Capital: Nuuk

Greenland is located near North America between the North Atlantic Ocean and the Arctic Ocean. Greenland has a population of 56,616 and is one of the least densely populated areas in the world.

As of 2020, the island's population totalled 57,616 permanent residents.

- The median age in Greenland is 34.3 years old.
- The total fertility rate is 1.94.
- The life expectancy is 73.4 years.
- 87.3% if the population live in urban areas

FIGURE: POPULATION GREENLAND

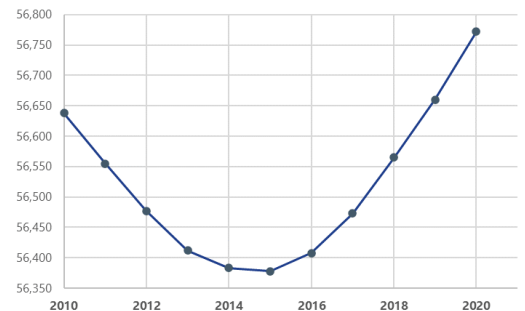
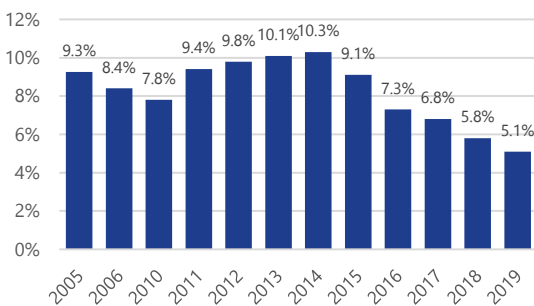


FIGURE: UNEMPLOYMENT RATE GREENLAND (%)

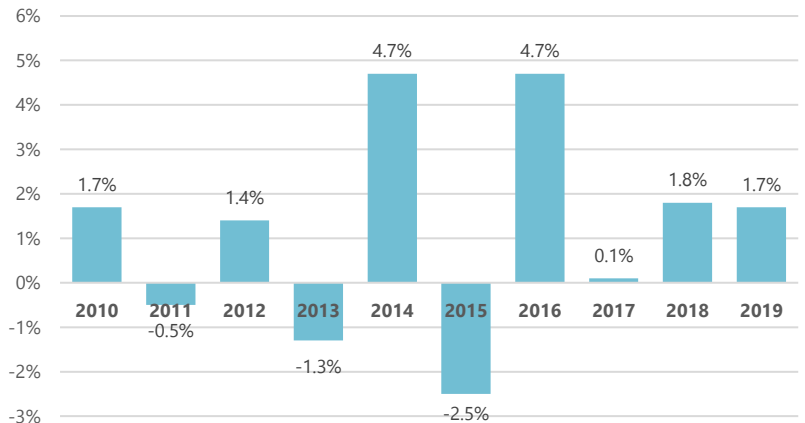


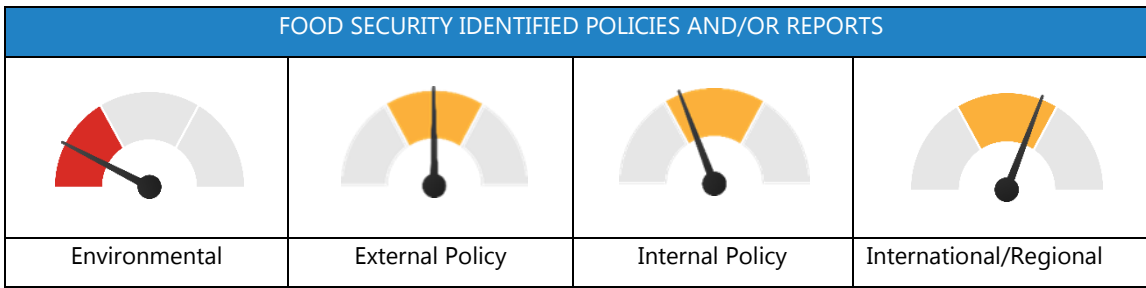
Source: Statista

In 2019, Greenland's gross domestic product (GDP) was US\$3 billion. The last few years have seen a general improvement in Greenland's economic situation. The country is also hoping to expand its mining sector to diversify their incomes sources.

In Greenland the unemployment numbers have varied between 11% and 5% since the turn of the century. The country's economy depends heavily on the exports of shrimp and fish. Tourism is also a growing industry in the country, especially the cruise lines which sail the coasts.

FIGURE: ECONOMIC GROWTH GREENLAND (% change)





FOOD SOURCES. Fishery: The Exclusive Economic Zone (EEZ) covers 2,252,305 km². Its fishing fleet consists of 22 offshore trawlers, one longline vessel, 120 inshore vessels, and around 2800 dinghies. Fishing and seafood processing are Greenland's primary industry: It covers 92% of exports (shrimp alone is 60%) and 25% of all employment (of which 60% is fishing, 40% processing). This represents 10% of the total taxable income for Greenland. Greenland's government has a large stake (financial, administrative, and commercial) in the fishery sector, and supports this with subsidies. Management differs depending on the fishery. Protected zones may ban all fishing, protect specific fisheries, or ban specific periods (for example during spawning periods). Agreements exist with the EU, Faroe Islands, Norway, and Russia to fish within the EEZ. Quotas are determined by the Government of Greenland on the basis of the Fisheries Act, international agreements, management plans, and specific fishery capacity. Inshore fishery has a 100% obligation to land in Greenland's own processing facilities. For West Greenland, all offshore catches are landed in Greenland and then either processed or shipped to relevant markets. East Greenland has no large processing facilities or harbours, so everything is processed onboard of the vessels, and is landed in Iceland from where it proceeds to other markets. There are 53 active processing plants, mainly along the West coast, with one small plant in East Greenland. The centre of the fishing industry is in the south, with Disko Bay as the main hub. **Agriculture:** 2,359 km² is arable land (0.57% of total land). This is mainly used for livestock production, feed crops, and some garden/greenhouse vegetables. Local production covers around 10-15% of the potato consumption in Greenland. Climate change resulted in extended cultivated areas and permits new crops (for example apples, strawberries, broccoli, cauliflower, cabbage, and carrots). In 2020, South Greenland had 36 sheep farms, one cattle farm and one reindeer farm. In Nuuk fjord there is one sheep farmer. **Food Trade:** Main markets for Greenland's fish are: EU, UK, China, Japan and Russia. Imports come mainly from Europe. Retail trade is highly concentrated and is half state owned.

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NUTRITION Anthropogenic contaminants in marine mammals pose a health threat to infants and pregnant women. Increasing imports of processed foods from Europe and increasing use of sugar, is leading to lifestyle diseases.

FRESH WATER Internal, renewable fresh water for agriculture or consumption is abundant.

HOUSEHOLD INCOME SOURCES The Government is the largest employer, followed by fishing.

ENVIRONMENT: Melting of the ice cap and glaciers is prevalent, and the sea ice is not as wide or thick as it previously was. Some species (for example shrimps) are moving further north as sea temperatures are rising. New species now occur in Greenland waters in commercial quantities (mackerel, redfish). Since 2016, mackerel is a commercial offshore fishery of significance in Greenland.

S: (1) Strong, diversified fishing sector with a modern fleet, and the stability of government support and economic implication (2) Strong legislation negotiated in participatory manner between government and fishers, on basis of scientific evidence.

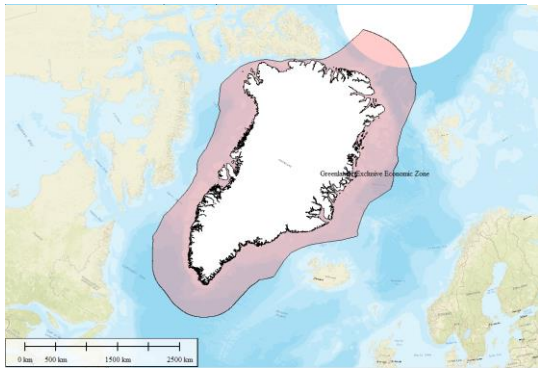
W: (1) Lack of data on population numbers and ecology of some species of growing importance. (2) Scientific advice seems to carry little weight in comparison with financial arguments.

O: (1) Climate change may change the composition of the fishery but is unlikely to cause stocks to disappear. (2) Climate change is also opening opportunities for diversification in agriculture, mineral exploitation and tourism.

T: (1) Climate change is altering the habitats of important hunted food species. (2) Long-term impacts of disturbance to previously frozen environments are not known.



BLUE ENERGY IDENTIFIED POLICIES AND/OR REPORTS				
Marine energies resource	Marine energy impact on CO ₂ emissions	External Policy	Internal Policy	International/Regional



OCT needs	
Consumption	468GWh /yr (8.3MWh/yr/pers.)
Levelized Cost of Energy	Approximal: 0.30-0.35€/kWh
Current tariff (€/kWh)	0.22 €/kWh
Current CO ₂ of the kWh	
Current CO ₂ /kWh/pers.	
Total current CO ₂ emission	

OCT energy resource	Resource Atlas Knowledge	Inside Territorial Waters	Outside Territorial Waters	Policy / Planning	Targeted objectives
Fixed wind	Partial				Must be much higher
Floating wind	Partial				Should be higher
Tidal current	Partial				Could be higher
Wave	Partial				Must be higher
SWAC / OTEC	None				Aligned
Salinity gradient	None				Aligned
Tidal range	Partial				Could be higher
Marine Storage	None				Should be higher
Marine Hydrogen	Partial				Should be higher

S: (1) Climate change awareness (2) Important marine energies resources (3) Complementarity with a potential hydrogen transportation sector as internal energy demand is low

W: (1) Difficult weather conditions (2) Large distance between towns (3) Lack of capacity

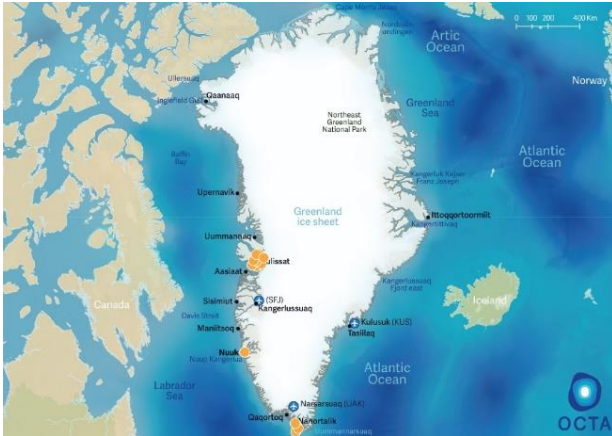
O: (1) OCTA could coordinate programs for marine energy (2) European founding programs are open to renewable marine energies (3) Northern European countries (Sweden, Norway, and Denmark, etc.) are currently developing concepts around "hydrogen highways transportation"

T: (1) Climate Change impacts (2) Taxes on fuel would disappear with renewable energy

OCT Means	Academic	Public sector	Private sector	Clusters / Innovation	Financing	Advocacy / NGOs
Means to reach the targets						
Reachable means						

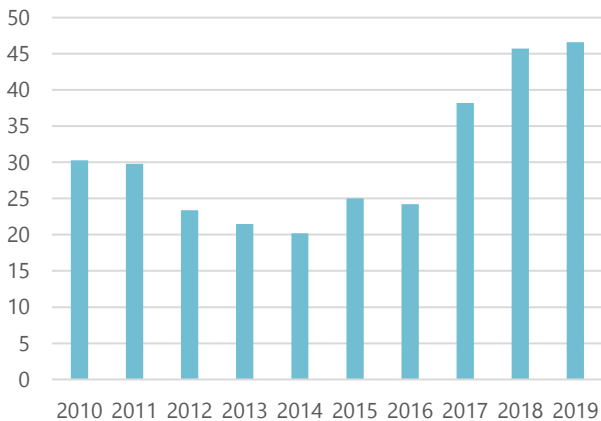


BLUE TOURISM IDENTIFIED POLICIES AND/OR REPORTS			
Environmental	External Policy	Internal Policy	International/Regional



Greenland is in an excellent position to exploit its rich natural resources for coastal tourism purposes. Currently Greenland is not a mass tourist destination, but with the rise in visitors wishing to expand their geographical interface, it is likely to attract more visitors in the future. Iceland for example has been able to increase its tourism market significantly over the past 10 years. Greenland is better placed to capitalise on the lessons learnt from Iceland as the land area is vast. It is the world's largest non-continental island, covering almost 2.2 million km². and yet has a population of only 58,616 most of whom live in coastal settlements on the southwest.

FIGURE: CRUISE VISITORS in Thousands GREENLAND

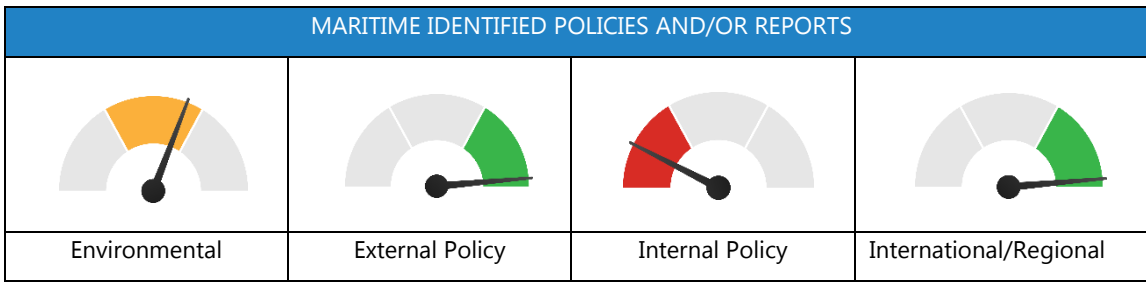


Source: United Nations Data

It is clear from the statistics that Greenland's tourism sector is increasing, and this is predicted to continue, albeit the Covid-19 pandemic (as in all countries) will have an effect.

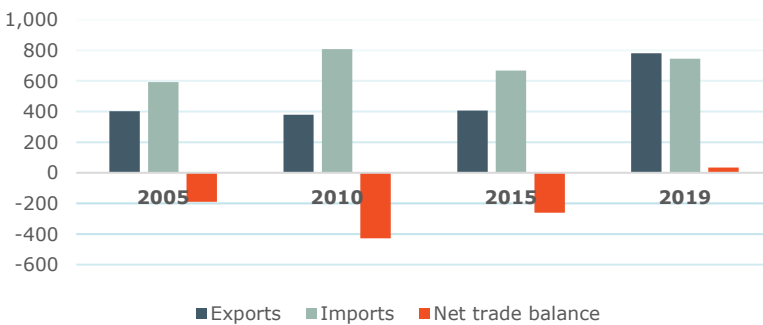
Greenland is drafting its tourism strategy. However, with the global movement towards sustainability, this could incorporate Blue and Green Tourism to ensure Greenland is ahead of the curve with regards to embracing a forward-thinking outlook. By adopting such an approach, Greenland will be able to put in place the necessary actions to steer its tourism sector to be sustainable and increase the longevity of the sector.

- S:** (1) Unique Tourism destination (2) Rich natural resources (3) Demonstrated tourism year on year growth
- W:** (1) Transportation between destinations (2) Lack of Blue Tourism Strategy (3) Hospitality sector skilled workforce (4) Hospitality Infrastructure (5) Cost
- O:** (1) Blue Tourism Strategy (2) Lessons learnt form Iceland (3) Diversification (4) Implementation of the 'OCT Blue Tourism Standards and Audit Scheme' (5) Maritime Spatial Plans (6) EU funding mechanisms (7) Attracting Investment (8) Tourism indicator development (9) Development of the Blue Tourism Cluster (9) Specialised training for hospitality providers (10) Public private partnerships (11) Increase transportation infrastructure
- T:** (1) Climate Change (2) Mass-tourism model (3) Environmental degradation (4) Global Economic downturn (5) Pandemic (6) Exceeding carrying capacity (7) Inaction (8) Lack of investment



The government of Greenland is the central port and International Ship and Port Facility Security (ISPS) authority in Greenland. The government of Greenland has transferred ownership and operation of port facilities in Nuuk to Sikuki Nuuk Harbour A/S. Sikuki Nuuk Harbour A/S is the local functional port authority and is responsible for ISPS in dedicated ISPS-facilities in Nuuk. Nuuk is the primary port and due to its size attracts many indirect and direct port operations all of which creates a strong maritime Blue Economic Sector (BES) cluster. Smaller ports underline the importance of maritime and are well placed to support satellite clusters. When considered together, they will create a strong BES cluster for the government of Greenland and introduce a unique economic integrated blue economy sector.

FIGURE: Total merchandise trade (millions of US\$)



Source: United Nations Data

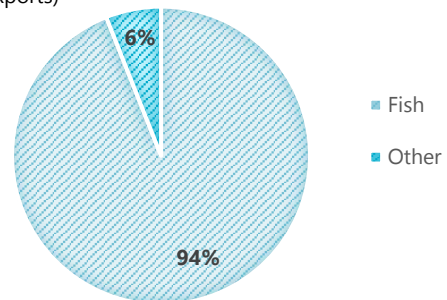
Greenland's exports amount to approximal €1,041 million with the main part (94%) being fish and shellfish, making the Greenlandic economy fragile to international price fluctuations. This mainly came from cold water shrimp, halibut, and from other fish (namely cod and crabs).

The merchandise trade demonstrates that Greenland's exports have almost doubled since 2015. This may be attributed to the opening of the new container port in that year. The potential to take advantage of the global growing container sector is a singular and important opportunity for Greenland. Imports have only moderately increased since 2005.

Top 5 partners in 2019 (exports, millions of US\$)	
Nicaragua	26
Malaysia	24
USA	21
Netherlands	10
Curaçao	10

Source: United Nations Data

FIGURE: Export structure by product group in 2019 (as % of total exports)



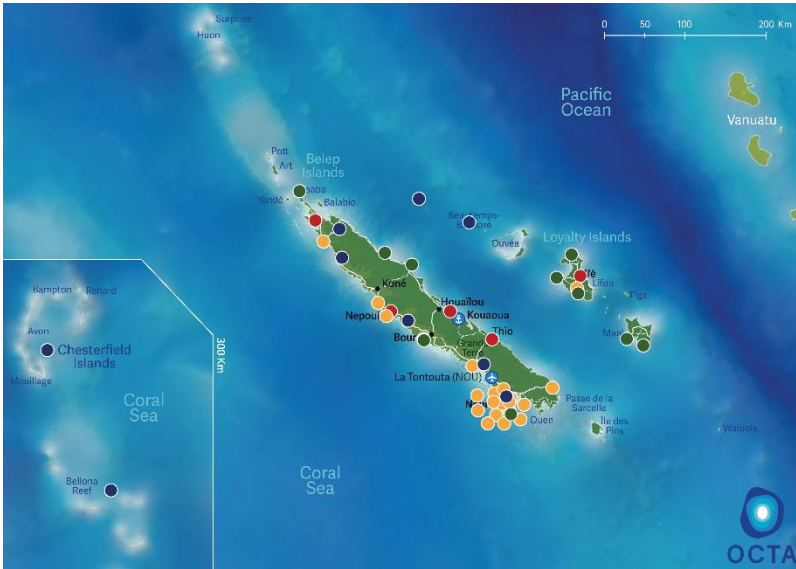
Source: OEC

- S:** (1) Container Port (2) Strong port investment and growth
- W:** (1) No recognised maritime cluster (2) Lack of High Value Human Capacity (3) Overall Maritime Governance (4) Lack of local enforcement for all BES sectors (5) Blue Investment and Strategic Vision
- O:** (1) Develop partnership with the Danish maritime cluster (2) Increase container activity (3) Develop the BES sectors (4) Increase access to training and education (5) Strong Blue Economy Policy (6) Port expansion and further diversification
- T:** (1) Climate Change (2) Lack of investment in infrastructure (3) Loss of focus of strategic direction (4) Dependency on EU Associated Member State for enforcement

15 NEW CALEDONIA



New Caledonia is a special collectivity of France. It is divided into three provinces, the North province, the South province and the Loyalty Islands Province. These provinces have their own local capitals and assemblies. The provinces of New Caledonia have an election every five years to elect a territorial congress consisting of 54 members. The French State is represented by a High Commissioner while New Caledonia elects two deputies and two senators to the French Parliament.

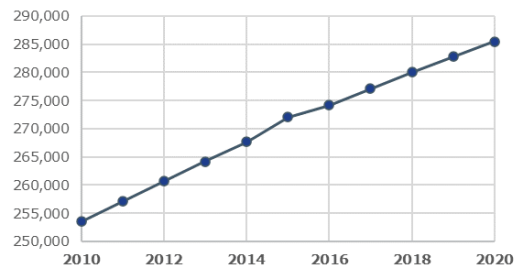


Latitude: 20.9043° S
 Longitude: 165.6180° E
 Capital: Nouméa

New Caledonia is located East of Australia and North of New Zealand. It had a population of 271,407 in 2019. New Caledonia is part of the Pacific Community.

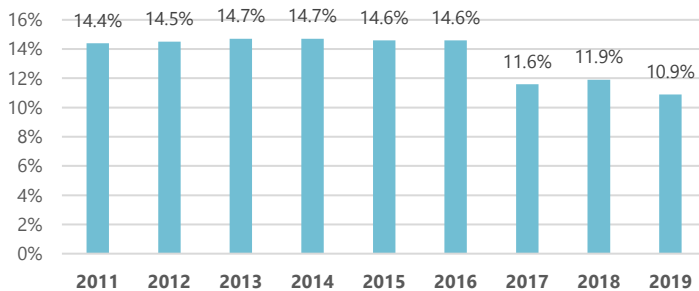
FIGURE: POPULATION NEW CALEDONIA

- As of 1 January 2020, the island's population has increased by nearly 26,000 people since 2010.
- The population has been growing by up to 4% every year since the 1960s
- The median age is 34.7 years
- The life expectancy in New Caledonia is 77.8 years
- 71.9% of the population live in urban areas



Source: World population review

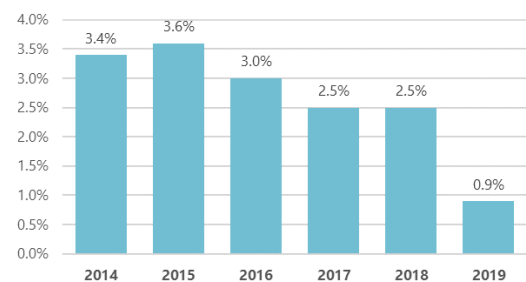
FIGURE: UNEMPLOYMENT RATE NEW CALEDONIA



Source: Trading Economics

New Caledonia's unemployment rate has been improving, dropping as low as 11%. New Caledonia's economy is spread in different sectors, including tourism, agriculture and mining – which employs nearly 14% of the workforce.

FIGURE: ECONOMIC GROWTH NEW CALEDONIA

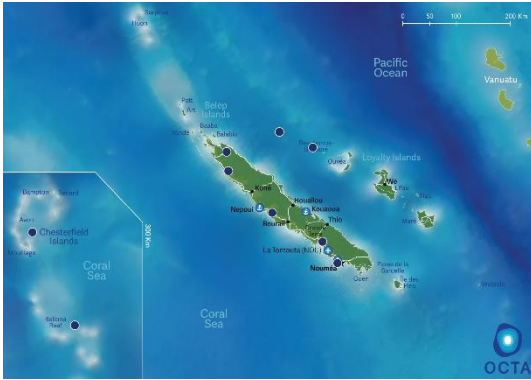


Source: United Nations Statistics Division & ISEE

In 2019, New Caledonia's gross domestic product (GDP) was approximately US\$10 billion.



FOOD SECURITY IDENTIFIED POLICIES AND/OR REPORTS			
Environmental	External Policy	Internal Policy	International/Regional



FOOD SOURCES The food sector is supported by the Government (€42.7 million in subsidies on a total production of €110.18 million). Self-sufficiency is a declared aim of the Government and good progress has been made: New Caledonia is currently 47% self-sufficient overall. Fresh fish is traditionally accepted as the most appropriate source of protein. In addition, food imports most often come from France and New Zealand. Prices of basic food necessities are standardised by the Government. Outside of Noumea, subsistence production is also practiced. **Fishery:** Regarding the main types of fisheries in New Caledonia, local market absorbs 46% of total catch of shrimps and 80% of tuna and marlin. The rest is mostly exported, in

particular to Japan. Fish and sea-foods represents 1.1% of total exports (second only to nickel), of which 70% is shrimps, 14% sea cucumbers and 11% tuna. Its annual value amounts to €17.08 million. In 2019, 20 longliners fished within the Exclusive Economic Zone (EEZ), whilst smaller vessels (90% of the total fleet) fished the coasts and lagoons, especially in the smaller islands. Of the 3,500 tons of commercial fish, 75% came from the high seas and approximately 33% (€4.2 million) were exported (mostly to USA and Japan). Expansion of the fishery sector would be supported by local facilities for freezing and processing. **Agriculture:** The local beef sector covers 51% of demand. Similarly, the local pork sector covers 87% and the eggs sector 88%. Local poultry meat covers 20% of demand (partly due to competitive imports). Locally grown fresh vegetables cover 82% of demand, followed by fresh fruit (67%) and cereals (mostly maize) (18%).

NUTRITION is notable for a relatively high human development index (0.79), raised by a particularly strong health factor. The only health problems observed are those generic for similar communities, mostly linked to the overconsumption of processed foods.

FRESH WATER Rainfall (1,850 millimetres/year), rivers and aquifers form 90% of surface sources. Distribution of rainfall is more in the South-East, less in the North-West, leading to both drought and floods. The Loyalty Islands predominantly rely on freshwater lenses.

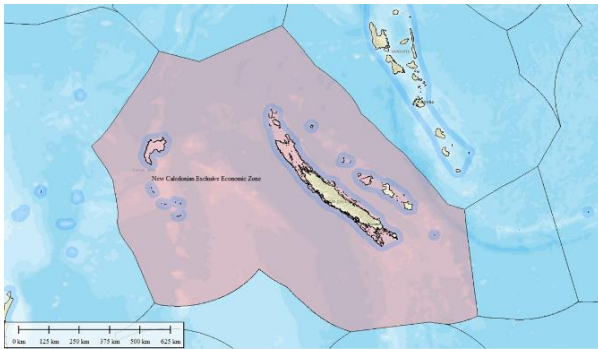
HOUSEHOLD INCOME SOURCES The population is concentrated in the South of New Caledonia. Nevertheless, maritime enterprises are spread across the country: 43% located in the North, and 13% in the Loyalty Archipelago.

ENVIRONMENT The whole Exclusive Economic Zone (1.36 million Km²) has been declared the Coral Sea Natural Park, third largest Marine Protected Area in the World. This designation permits controlled fishing. In August 2018, the government of New Caledonia fully protected the Chesterfield, Bellona, Astrolabe, Petrie, and Entrecasteaux reefs.

- S:** (1) National policies give local food production room to develop. (2) Subsistence production outside the cities is widespread and important. (3) Regional research entities are concentrated on New Caledonia (IFREMER, IRD, SPC, University of New Caledonia).
- W:** (1) National policies aimed at protecting local agriculture result in higher food prices
- O:** (1) The creation of a Sovereign Development Fund (utilising income from Nickel) (2) Diversification of aquaculture (sea-horses, lobsters, coquille Saint Jacques); Incentivisation of local seafood processing, as part of a food security strategy, particularly by: Improving access to cold storage and Promoting local canning of marine foods (fish, molluscs, algae). (3) High-end visual tourism, reef diving and recreational fishing (4) Direct tourism towards sport-fishing, as high value, low off-take industry, also as "presence" in EEZ, and adjunct to fisheries surveillance.
- T:** (1) Possible political uncertainty (2) Hurricane belt and Climate change. Waste disposal (human, industrial and from aquaculture). (3) Excessive reliance on processed foods. (4) Decline of local, traditional agriculture increases vulnerability to shocks.



BLUE ENERGY IDENTIFIED POLICIES AND/OR REPORTS				
Marine energies resource	Marine energy impact on CO ₂ emissions	External Policy	Internal Policy	International/Regional



OCT needs	
Consumption	3,273 GWh (12.1MWh/pers.) including mining/metal industries
Levelized Cost of Energy	Estimate: 0.35-0.40 €/kWh
Current tariff (€/kWh)	0.07€/kWh to 0.35€/kWh
Current CO ₂ /kWh	
Current CO ₂ /kWh/pers.	
Total current CO ₂ emission	

OCT energy resource	Resource Atlas Knowledge	Inside Territorial Waters	Outside Territorial Waters	Policy / Planning	Targeted objectives
Fixed wind	Partial				Should be higher
Floating wind	Partial				Could be higher
Tidal current	Embryonic				Aligned
Wave	Embryonic				Must be higher
SWAC / OTEC	Partial				Must be higher
Salinity gradient	None				Aligned
Tidal range	None				Aligned
Marine Storage	None				Should be higher
Marine Hydrogen	None				Should be higher

S: (1) Good marine energies resource potential (2) Good size of island, population, and budget (3) Energy policy independence (4) Existing marine academic technical structures (5) Existing Innovation centres and marine clusters

W: (1) Economy driven by traditional nickel mining (2) Inconsistencies of views between stakeholders (3) Lack of use of independent power producers (4) Lack of knowledge/capacity (5) Administrative patchwork (EU Associated Member State model)

O: (1) OCTA could coordinate a global program (2) European founding programs for Renewable Energy (3) Possible synergies with pacific OCTs (4) Possibly new beginning due to new stakeholders

T: (1) Climate change impacts including dying coral and sea level rise (2) Local ecological preferred to climate awareness (3) Taxes on fuel would disappear with renewable energy (4) Possible future local instabilities

OCT Means	Academic	Public sector	Private sector	Clusters / Innovation	Financing	Advocacy / NGOs
Means to reach the targets						
Reachable means						



BLUE TOURISM IDENTIFIED POLICIES AND/OR REPORTS			
Environmental	External Policy	Internal Policy	International/Regional

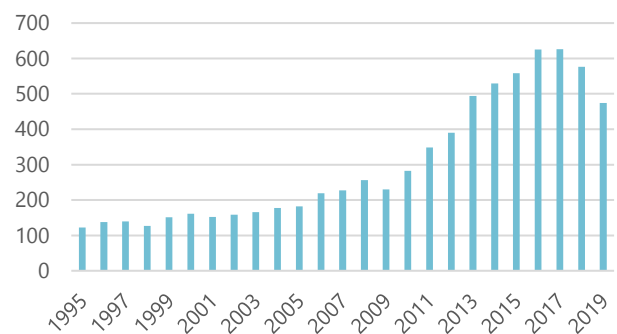


New Caledonia presents an array of Blue Tourism potentials. From a Blue Tourism point of view, it can be split into five regions, of which Nouméa (the ocean capital city of New Caledonia) hosts several bays, beaches and panoramas. Nouméa also provides cultural opportunities for tourists. The other regions are the Islands, the West Coast, the Great South and the East coast. The East Coast is quite different to the other areas as it is the location of the central mountain range of the Mainland (Grande Terre), which is a natural boundary, overlooking the very different faces of the East and West Coasts. Exposed to strong winds and therefore more humid, the eastern coast offers unique scenery with a diversity of flora and fauna.

According to ISEE (the Institute of Statistics and Economic Studies), New Caledonian tourism experienced two years of consecutive growth during 2015-2016. The growth is explained by the continued increase of the number of leisure market visitors from Australia (+9% increase in 2016), Japan (+5.5%) and New Zealand (+7.2%), the three priority markets targeted by New Caledonia Tourism and its partners. The UN does not provide up to date data on cruise visitors, but according to <https://la1ere.francetvinfo.fr> there were 500,000 cruise visitors in Caillou in 2017, a marked increase from 185,000 in 2010. In addition, visitor numbers from Metropolitan France stabilised (within the economic crisis context, the decrease was only -1.4% in 2016).

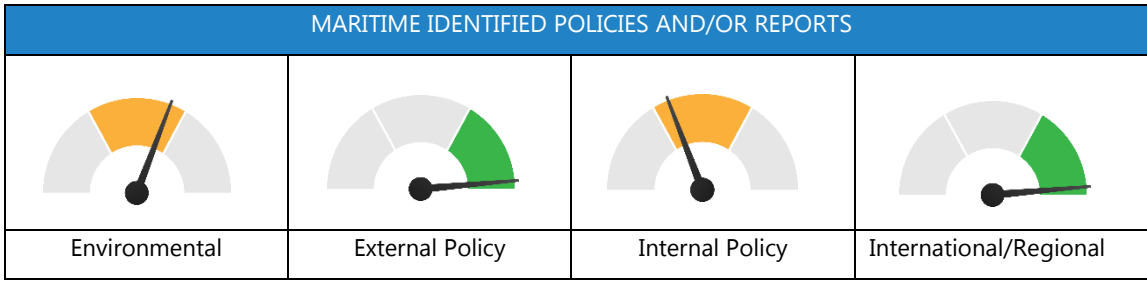
As an adjunct, only the secondary markets, which did not receive promotional campaigns on the part of the New Caledonian tourist industry, showed some decline (USA/Canada and the Oceania Islands dropped -33,6% in 2016 and -5,9% in 2013 respectively). Covid-19 has had a significant impact on New Caledonia, as all countries where tourism is important for employment and GDP. However, the recovery presents itself as an opportunity to take stock and 'rewire' the approach to tourism in general. Focusing on improving the long-term sustainability of the sector for New Caledonia populations, resources, and visitors. This in turn will guarantee the sector in the future and protect it from further impacts, such as overreaching the carrying capacity at natural sites.

FIGURE: TOURIST VISITORS in Thousands NEW CALEDONIA (including arrivals by air and by sea)



Source: United Nations Data

- S:** (1) Natural rich resources, (2) proven visitor numbers (3) Recognised Cruise destination (4) Well evolved sector.
- W:** (1) Requirement of further internal policy to guide visitor providers (2) Lack of a Maritime Spatial Plan (3) Lack of clear information guidelines for visitors (4) Lack of promotion of sustainable tourism.
- O:** (1) New Caledonia Sustainable Tourism Strategy; (2) Shift from mass-tourism business model (3) Working with other OCTs to apply the OCT Blue Tourism Standards and Audit Scheme Promoting New Caledonia (4) Specific training for hospitality workers.
- T:** (1) Business-as-usual approach (2) Destruction of natural visitor attractions through over-reach of carrying capacity (3) Absence of planning for future risks to the Tourism Sector.



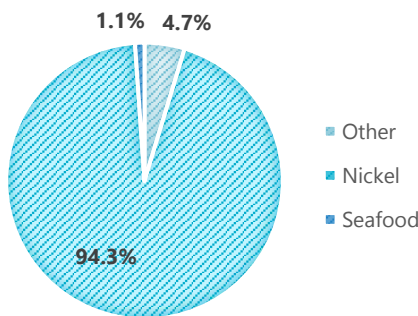
The port of Nouméa can handle reception and operation of all categories of vessels with a draft of 10.5 meters. The Port of Nouméa maritime district covers more than 1,000 ha and brings together the various port facilities distributed between the large and the small companies. Overall maritime traffic has increased in recent years, despite a decline in 2020 compared to 2019 (3,103,546 tonnes in 2019).

Covid-19 has forced the cessation of cruise traffic. PANC is the public body established by the government for the administration of the port of Nouméa and the port of Wé, in Lifou. New Caledonia has a well-developed maritime cluster supported by the NFrench maritime cluster. Further improvement of the maritime cluster will enable it to reach its full potential and increase sustainable Blue Economic Sector (BES) activity. New Caledonia imports - transport was at level of EUR 2 million in 2019, up from EUR 1.2 million previous year. This is a positive change of 66.67%.

FIGURE: Total merchandise trade (millions of US\$)



FIGURE: Export structure by product group in 2019 (as % of total exports)



Source: ISEE

Top 5 partners in 2019 (exports, millions of US\$)	
China	1 046
Republic of Korea	256
Japan	218
Taiwan	59
France	27

Source: United Nations Data

Source: United Nations Data

S: (1) Availability of Policy (2) Strong Port Management and maritime governance (3) Maritime Cluster in place

W: (1) Lack of Blue Economy Sector strategy (2) Lack of Maritime Spatial Plan (3) Lack of Marine Spatial Plan

O: (1) Expanding the remit to increase Maritime Enforcement (2) Expand the remit of the New Caledonian Maritime cluster to account for all BES sub-sectors (3) Engagement with education and skills providers to increase maritime capacity and supporting infrastructure (4) Port reception facilities to provide 'green fuels'

T: (1) Increased Piracy (2) Increased Illegal, unreported and unregulated fishing (3) Lack of Investment (4) Climate Change (5) Environmental Damage (6) Biodiversity damage



Saba is a special municipality of the Kingdom of the Netherlands. The special municipalities (Dutch: *bijzondere gemeenten*) carry many of the functions normally performed by Dutch municipalities. The executive power rests with the Governing Council headed by an Island Governor. The main democratic body is the Island Council. Dutch citizens of these islands are entitled to vote in Dutch national elections and (as all Dutch nationals) in European elections. Officially the islands are classed in Dutch law as being *openbare lichamen* (literally translated as "public bodies") and not *gemeenten* (municipalities). Unlike normal municipalities, they do not form part of a Dutch province and the powers normally exercised by provincial councils within municipalities are divided between the island governments themselves and the central government by means of the National Office for the Caribbean Netherlands. For this reason, they are called "special" municipalities.



Latitude: 17.6355° N
 Longitude: 63.2327° W
 Capital: The Bottom

Saba is in the northern part of the Leeward Islands and southeast of the Virgin Islands. The Caribbean special municipalities of the Netherlands refer to a group of three special municipalities of the Netherlands that are in the Caribbean Sea: the islands of Bonaire, Sint Eustatius, and Saba. They are collectively known as the "Caribbean Netherlands". The Caribbean Netherlands has a population of 25,157 as of January 2020.

- As of 1 January 2020, the island's population totalled 1,933 permanent residents, a decrease of about 38 since 2012.
- Most people living on Saba (2020) were between 25 and 30 years old.
- In 2020, roughly 219 people fell in this age group.

FIGURE: POPULATION SABA

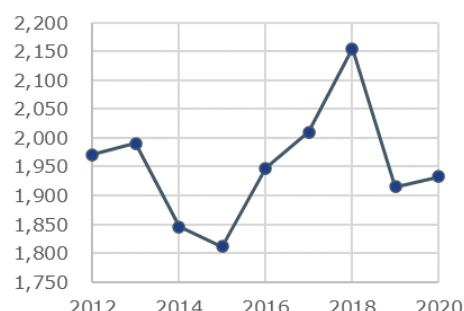
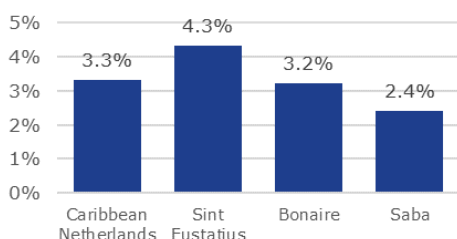


FIGURE: UNEMPLOYMENT RATE SABA (%)

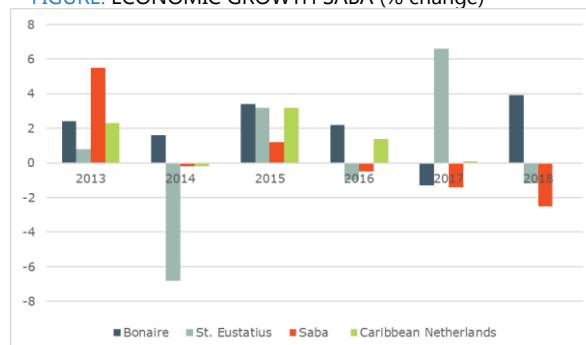


In 2018, approximately three percent of the population between 15 and 75 years old in the Caribbean Netherlands was unemployed. Unemployment differed markedly from island to island. Whereas on Sint Eustatius unemployment was 4.3 percent in 2018, on Saba only 2.4 percent of the population was unemployed.

Source: Statistics Netherlands

In 2018, Saba's gross domestic product (GDP) was around US\$48 million. Bonaire's GDP increased by 3.9 percent in volume, Sint Eustatius recorded a contraction of 11.8 percent and Saba's GDP declined by 2.5 percent. Statistics Netherlands (CBS) reports this based on newly released figures.

FIGURE: ECONOMIC GROWTH SABA (% change)



Source: Statistics Netherlands



FOOD SECURITY IDENTIFIED POLICIES AND/OR REPORTS			
Environmental	External Policy	Internal Policy	International/Regional



FOOD SOURCES

Fishery: There is no fishing allowed around the island since the area (Saba National Marine Park) falls under the Marine Environment Ordinance to protect the coral reefs and other marine life within the park. The Exclusive Economic Zone (EEZ) includes Saba Bank (2,200km²) and is increasingly protected by being allocated the status as a “Particularly Sensitive Sea Area” (PSSA) for shipping, as well as a sea mammal and shark sanctuary.

Saba has two sea-going boats operating in its EEZ, using traps to

collect West Indian spiny lobster and deep-water snapper (redfish). Conch populations are restoring after a decline due to overfishing in the 1990s. There is a growing interest in trapping the more invasive lionfish for tourist consumption.

Agriculture: Saba has available land, but, as protected area, land for agricultural use is scarce. There is a push for developing more local, organic production.

NUTRITION Saba has no notable nutritional problems.

Food Trade Most supplies are flown in from Sint-Maarten, with origins in the USA or the Netherlands. Direct shipments have been recently introduced from Miami to ensure longer shelf life of fresh produce. Pests are a potential issue in retail with no access to refrigerated storage. The retail supply buffer is 3-8 weeks depending on the product, so supply interruptions (for example due to weather or epidemic) can have a serious impact.

FRESH WATER This includes underground sources. However, freshwater lenses are floating over a saltwater table which makes this a vulnerable source.

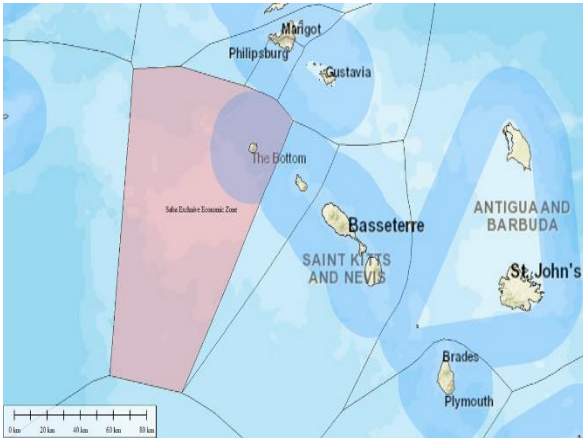
HOUSEHOLD INCOME SOURCES Mostly through marine and terrestrial nature tourism.

ENVIRONMENT Saba's environment is well protected. It recently introduced a ban on plastics.

- S:** (1) Preserved, old-time charm favours high-income tourism – the tourism type that is least likely to suffer from shocks
- W:** (1) There is only one main source of income, tourism, which can be vulnerable to outside influence (2) Fresh water supply is scarce
- O:** (1) Rainwater retention programmes in order to increase fresh water supply (2) Reforestation (3) Tigerfish are growing in attraction both to eat and to fish
- T:** (1) Disruption to supply chains (for example, by Covid-19) (2) Hurricanes



BLUE ENERGY IDENTIFIED POLICIES AND/OR REPORTS				
Marine energies resource	Marine energy impact on CO ₂ emissions	External Policy	Internal Policy	International/Regional



OCT needs	
Consumption	9.2GWh/yr (4.6 MWh/yr/pers)
Levelized Cost of Energy	Approximal: 0.31€/kWh (2017)
Current tariff (€/kWh)	0.12 €/kWh to 0.31 €/kWh
Current CO ₂ /kWh	
Current CO ₂ /pers.	
Total current CO ₂ emission	

OCT energy resource	Resource Atlas Knowledge	Inside Territorial Waters	Outside Territorial Waters	Policy / Planning	Targeted objectives
Fixed wind	None				Could be higher
Floating wind	None				Could be higher
Tidal current	None				Aligned
Wave	None				Aligned
SWAC / OTEC	None				Aligned
Salinity gradient	None				Aligned
Tidal range	None				Aligned
Marine Storage	None				Must be higher
Marine Hydrogen	None				Could be higher

S: (1) Climate change awareness (2) Favourable wide continental platform (3) Open to other OCTs marine territories

W: (1) The size of the island in combination with a small population means a lower energy need. This may imply difficulties to reach cost efficiency in production technologies (2) Tourism based economy (Inc. Diving) (3) Lack of capacity (4) Potential conflict of authority between EU Associated Member State and local authority (5) Traditional prudent approach

O: (1) OCTA could coordinate neighbouring islands in a same program (2) European founding program support renewable marine energies (3) Emulation of the neighbouring islands (4) Lack of available land: develop projects at sea (5) Saba National Park society could support

T: (1) Climate change and extreme conditions (2) Hurricanes (3) Sargassum material issues (4) Taxes on fuel would disappear with renewable energy

OCT Means	Academic	Public sector	Private sector	Clusters / Innovation	Financing	Advocacy / NGOs
Means to reach the targets						
Reachable means						



BLUE TOURISM IDENTIFIED POLICIES AND/OR REPORTS			
Environmental	External Policy	Internal Policy	International/Regional



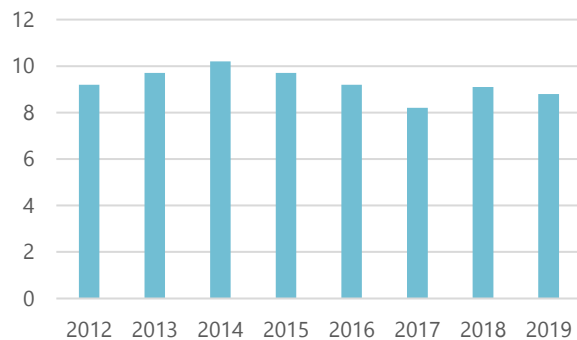
Saba is a 13 km² island located in the north-eastern Caribbean Sea, 45km southwest of its international hub at Sint Maarten. The airport provides a significant boost to tourism numbers, because it provides for only a 12-minute flight from St Maarten, or a mere 90 minutes by ferry. The island has four main towns, The Bottom (Saba's capital), Windwardside, St. John's and Zion's Hill (aka Hell's Gate).

Tourism on Saba is managed by the Saba Tourist Bureau. This provides visitors with an information and promotional center. Its primary mission is to promote the island of Saba tourism related businesses globally, whilst locally fulfilling the needs of visitors by providing informational services.

The island of Saba mainly consists of a non-active volcano (Mount Scenery) and is topped with a rare Elfin forest. The natural environment supports unique biodiversity including some endemic species, such as the Saban Anole and the Saban Least Gecko.

The tourism industry (providing 70% of GDP) is largely focused on nature-based activities such as diving, snorkelling, and hiking. In 2019, 18% of the visitors in Saba arrived through a cruise ship. The Saba Conservation Foundation is responsible for the management of the Saban National Marine Park. The economic value of Saba ecosystem services provided by the marine and terrestrial ecosystems is estimated at \$29 million per year.

FIGURE: TOURIST VISITORS in Thousands SABA



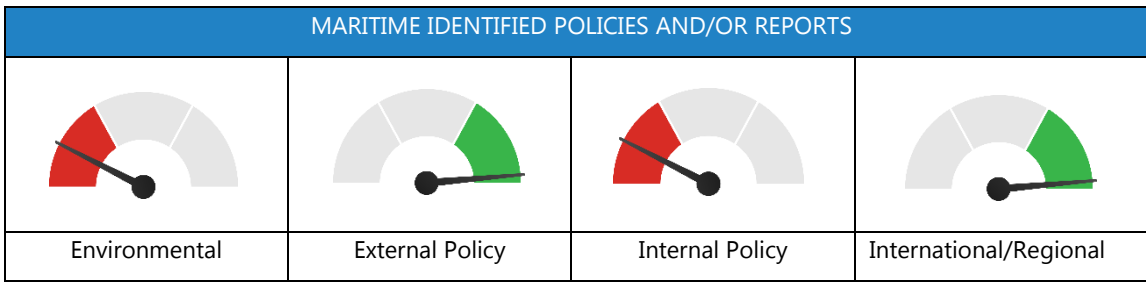
Source: CBS

S: (1) Tourism Board (2) Consistent visitor flow (3) Airport in vicinity (4) Port available (5) Saban National Marine Park

W: (1) Dependence on other island transport systems (2) Lack of data (3) Lack of a tourism plan

O: (1) Blue Tourism strategy (2) Implementation of the 'OCT Blue Tourism Standards and Audit Scheme' (3) Specialised training for all hospitality providers (4) Funding opportunities with other islands (5) Increase the marine protected area size (6) Maritime Spatial Plan (7) Investment in natural capita

T: (1) Climate change (2) Environmental degradation (3) Global economic downturn (4) Pandemic (5) Over-reach of carrying capacity (7) Mass tourism



Saba is a small island and has one port (Bay Harbor). The port's facilities have recently expanded due to the relocation of the island's power plant. The port supports some shipping, ferries, cruise ships and fishing vessels and is an important hub for the island's residents.

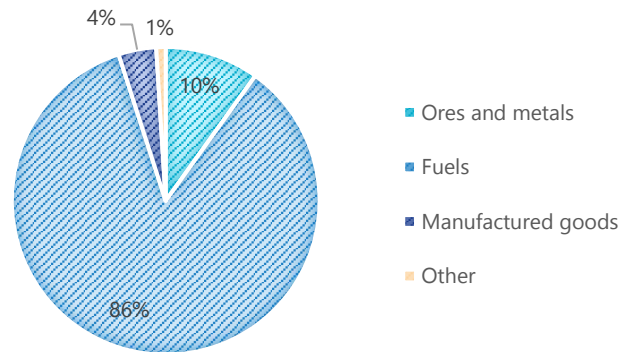
Bay Harbor is the centre for the maritime cluster with all its support services located in or near the port. Due to its size, all statistics available are sequenced alongside Bonaire and Sint Eustatius. The SWOT analysis will follow that consideration.

FIGURE: Total merchandise trade (millions of US\$) for Saba



Source: Statistics Netherlands

FIGURE: Export structure by product group in 2019 (as % of total exports) for Bonaire, Sint Eustatius and Saba



Source: United Nations Data

Top 5 partners in 2019 (exports, millions of US\$)	
Cyprus	0.621
France	0.175
Belgium	0.084
Brazil	0.055
Netherlands	0.036

Source: United Nations Data

Saba has no commercial yacht marina – so the Port provides a secluded strip of moorings on the more sheltered western side of the island. It is managed by the Port Authority and is extremely important for Coastal Tourism.

S: (1) Well equipped port (2) Evidence of diversification (3) Port Governance

W: (1) Constrictions to port expansion (2) Not associated with a maritime cluster (3) Lack of Blue Economic Sectors (BES) strategy (4) Capacity Investment

O: (1) Development of a regional maritime (BES) cluster (2) Education and skills capacity development (3) Provision for BES sub sectors such as blue energy (4) Funding in association with other OCTs (5) Investment (6) Maritime spatial plan

T: (1) Climate Change (2) Lack of enforcement capability (3) Economic downturn (4) Pandemic (5) Inaction

17 SAINT BARTHÉLEMY



Saint Barthélemy is an overseas collectivity of France. Since 2007 Saint Barthélemy has a President elected every five years, a Territorial Assembly with 19 members, and an Executive Council with seven members. Saint Barthélemy elects one senator to represent them in the French Senate, while The French State is represented by a Prefect appointed by the French president. Saint Barthélemy is an overseas territory of the European Union and therefore the citizens have EU passports. France is responsible for the defence of the island and has a permanent security force stationed there.

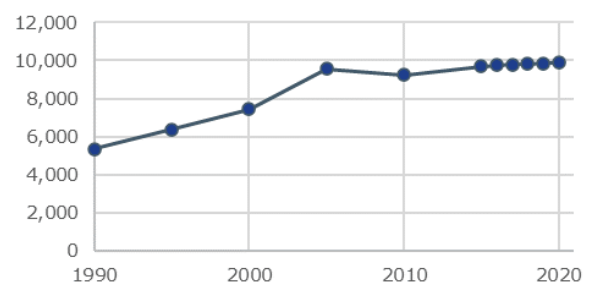


Latitude: 17.9000° N
 Longitude: 62.8333° W
 Capital: Gustavia

Saint Barthélemy is in the Caribbean, North-east of Saba, Sint Eustatius and Saint Kitts and Nevis. Saint Barthélemy has a population of just under 10,000 people. It is composed of one main island and several smaller, uninhabited islands.

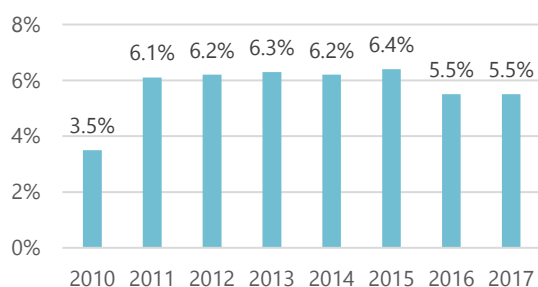
- Since the 1950s the country has seen a significant population growth
- In the last 10 years the population has been relatively stable (grown by 643 people)
- The median age is 45.6 years old
- The life expectancy in the country is 80.2 years

FIGURE: POPULATION Saint Barthélemy



Source: United Nations Statistics

FIGURE: UNEMPLOYMENT RATE SAINT BARTHELEMY (%)



Source: www.journaldunet.com

The primary sectors in Saint Barthélemy are agriculture, industry, and services. The agricultural sector was once largely dependent on sugar cane production but is now primarily producing bananas. Most of the country's income comes from the tourism sector which can be vulnerable to extreme weather like hurricanes and Covid-19. The construction and public sector also receive investment mainly in connection with the tourist sector.

Exact information on the GDP (gross domestic product) is difficult to find but in 2014 the GDP was around €375 million (up from €179 million in 1999)⁵⁶. There are approximately 200,000 tourists every year which has expanded the sector in the last few years. The country has potential to continue growing this sector to strengthen GDP growth. The only issues are that all fresh water, food, manufactured goods, and energy must be imported. This makes the cost per tourist quite high.

⁵⁶ IEDOM (2018), Note Express 513



FOOD SECURITY IDENTIFIED POLICIES AND/OR REPORTS			
Environmental	External Policy	Internal Policy	International/Regional



FOOD SOURCES Almost all food is imported. **Fishery:**

Fishing activities are concentrated on tourism: There are 39 enterprises, located mainly on the north coast, that offer to take visitors on sea-fishing expeditions. There is no large-scale commercial fishery on Saint Barthélemy.

Agriculture: Local food production is a mere 0.1% of the total economy, discouraged by a dry climate and a shortage of arable land. Produce that is locally grown are some vegetables, cotton, pineapples, salt, bananas, and sweet potatoes.

Food Trade Imports come largely from the USA (Tropical Shipping) and France, via Guadeloupe (through CMA-CGM, a French container transportation and shipping company).

NUTRITION Nutrition is not seen as a problem: With a GDP of €38,998 per capita (most recent data from 2014), Saint Barthélemy is the highest in the Caribbean and ranks higher than France.

FRESH WATER Saint Barthélemy has a low rainfall (1,000 millimetres/year) and groundwater is scarce. Domestic water comes from four desalination plants (one vapour, and three reverse osmosis) and has a total storage capacity of 2.500 m³.

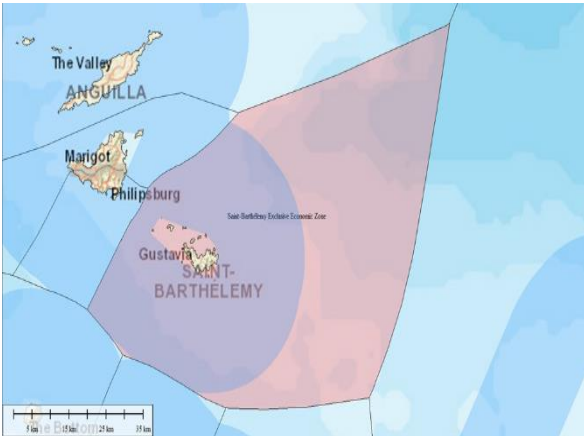
HOUSEHOLD INCOME SOURCES Mainly through servicing of residential tourism.

ENVIRONMENT Centralised sewage treatment should reach 600 households, but some still use soakaways. Hotels tend to have their own treatment stations, allowing them to recycle wastewater for irrigation. Island are encircled by shallow reefs. Nonetheless, Hurricane Irma illustrated the vulnerability of small islands that have been densely populated. The urbanised shoreline prevented floods, but damage to shoreside property was severe, especially where natural dunes have been removed. Recovery is slow due to the base being undermined by urbanisation. The marine reserve, founded in 1999, covers more than 1,000 hectares (2,500 acres) of protected and vulnerable habitats, bays, and islands, and includes a zone that is restricted to scientific observations only. As the sea surrounding St. Barthélemy is rich in coral reefs and other precious marine life, the area has been declared a protected area since 1996. Environmental awareness is quite pronounced in St. Barthélemy and is promoted by the Environmental Commission. Fishing is prohibited in the Natural Reserve.

- S:** (1) A high-income population, and high-income visitors, gives financial stability, if tourism lasts. High income residential tourism is the least vulnerable.
- W:** (1) Interruptions to tourism destroys incomes
- O:** (1) The Exclusive Economic Zone (EEZ) should be studied and fished sustainably, to diversify the economy
- T:** (1) Hurricanes can cause permanent damage to a physical environment weakened by urbanisation.



BLUE ENERGY IDENTIFIED POLICIES AND/OR REPORTS				
Marine energies resource	Marine energy impact on CO ₂ emissions	External Policy	Internal Policy	International/Regional



OCT needs	
Consumption	121 GWh/yr
Levelized Cost of Energy	Approximal: 0.36-0.40€/kWh
Current tariff (€/kWh)	0.12 to 0.16 €/kWh
Current CO ₂ /kWh	
Current CO ₂ /pers.	
Total current CO ₂ emission	

OCT energy resource	Resource Atlas Knowledge	Inside Territorial Waters	Outside Territorial Waters	Policy / Planning	Targeted objectives
Fixed wind	Partial				Could be higher
Floating wind	None				Should be higher
Tidal current	None				Aligned
Wave	None				Should be higher
SWAC / OTEC	Embryonic				Should be higher
Salinity gradient	None				Aligned
Tidal range	None				Aligned
Marine Storage	None				Should be higher
Marine Hydrogen	None				Should be higher

S: (1) Local Ecological awareness (2) Access to private sector investments (3) Open to other OCTs marine territories

W: (1) Tourism based economy (incl. cruise tourism) implies reluctance toward industrial projects (2) Administrative complexity with dependency to French regulation (3) Lack of capacity (4) Electricity tariff highly subsidized by France (5) Conflict of authority between EU Associated Member State and local authority (6) Traditional prudent approach

O: (1) OCTA could coordinate the neighbouring island in a same program (2) European founding programs support renewable marine energies (3) Dynamism of the neighbouring islands (4) Lack of available land: develop projects at sea

T: (1) Calamities in link with climate change, extreme conditions (2) Hurricanes (3) Sargassum material issues (4) Taxes on fuel would disappear with renewable energy

OCT Means	Academic	Public sector	Private sector	Clusters / Innovation	Financing	Advocacy / NGOs
Means to reach the targets						
Reachable means						



BLUE TOURISM IDENTIFIED POLICIES AND/OR REPORTS			
Environmental	External Policy	Internal Policy	International/Regional



Saint Barthélemy is an island state in the Lesser Antilles of the Caribbean. The state has a total area of 21 km² and a total coastline of 32 km. In terms of area, Saint Barthelemy is the smallest country in the Americas and the sixth smallest in the world. The island group consists of 11 islands. Saint Barthélemy's economy is based on high-end residential tourism. Cruise ships of less than 1,200 passengers are permitted: 204 visits representing 63,329 cruise visitors in 2019 (six times the resident population). Sailboat tourism is important, stimulated by several international sailing events: 5,000 boat visited in 2019, with nearly 40,000 passengers. Inevitably Covid-19 has put a stop to these events and diminished overall activity in the tourism sector as whole.

Sport fishing for tuna, marlin, bonito, barracuda and wahoo, and an annual open fishing tournament, based on Lorient, Corossol and Flamands. Gustavia is the 'port for everything'. Regular ferries connect to St. Martin. Connection to other neighbours is haphazard. Air connections are with Sint-Maarten and Guadeloupe, which allow large carrier traffic.

Despite the high-nature value as a tourist destination of Saint Barthélemy, a number of factors threaten the long-term sustainability of its blue tourism development. Among them are:

- Reefs around the island are in critical condition;
- Fish populations levels have dropped below the regional benchmark for recovery, inside and outside of the Marine Protected Areas;
- Overall health of the seagrass beds has been categorized as "mediocre";
- The macroalgae cover in the reef systems has increased rapidly and is now over 50%;
- Coastal erosion is severe in several locations around the island and in some areas has led to repetitive beach re-nourishment programs;
- Invasive species (goats, iguana, lionfish) further threaten the territory's biodiversity.

S: (1) Strong tourism market (2) Rich natural resources (3) Good transport connectivity (4) MPA

W: (1) Lack of tourism plan (2) Availability of data (3) Dependency on mass tourism (4) Ecosystem in Critical condition

O: (1) Blue Tourism Strategy (2) Eco-based tourism (3) Implementation of the 'OCT Blue Tourism Standards and Audit Scheme (4) Funding applications with other OCTs (6) Maritime Spatial Plan (7) Upskill hospitality providers (8) Investment (9) Diversification (10) Niche tourism model (11) Increase data availability (11) Develop the Blue Tourism cluster

T: (1) Mass tourism (2) Climate Change (3) Environmental degradation (6) Pandemic (7) Global economic downturn (8) Overreaching carrying capacity



MARITIME IDENTIFIED POLICIES AND/OR REPORTS			
Environmental	External Policy	Internal Policy	International/Regional



Saint-Barthélemy's main port is the port of Gustavia, which is made up of two specific facilities a commercial port and a leisure marina. The port team works in close collaboration with the Saint Barthélemy marine reserve, which emphasises their commitment to the Blue Economy Sector (BES).

Although there must be some import - export activity, there is nothing registered in the UNSTAT database, which collects this type of information for all countries. Without that data it is impossible to detail the economic value of the port activities.

Security obligations, International Ship and Port Facility Security (ISPS) code and other regulations are met by the Port. However, with the increase of the Blue Economy Sector and its potential to contribute significantly to the Saint-Barthélemy economy, there is an opportunity to develop the Maritime enforcement operations to oversee other BES activities.

Additionally, the port as a corner stone for the maritime cluster would provide the pivot point to increase BES activities. For example, the application of Blue Energy will require a port from which maintenance teams can deploy.

St Barthélemy is highly dependent on external markets. The majority of food items are imported, and power generation is almost exclusively generated from imported fossil fuels.

Maritime transportation is therefore crucial for the island. The bulk of the imported goods come from the USA via Tropical Shipping Company and mainland France via CMA-CGM through the port of Guadeloupe. The commercial port activity has been increasing over the last decade.

At the height of the tourism season, many yachts and other ships gather in the harbour of Gustavia. Some of these boats release grey water and bilge water into the harbour and the bays around the island. These waters are charged with nutrients, pollutants, and oil that impact the environment. Collisions with turtles are also reported every year due to the non-compliance with the speed limits.

- S:** (1) Adherence to Port Regulations (2) Integrated into the Marine environmental network
- W:** (1) Lack of Available Data (2) Not associated with a defined Maritime (BES) cluster (3) Lack of specialised education and skills at the local level
- O:** (1) Creation of the Maritime (BES) Cluster (2) Port expansion with investment (3) Development of the St Barthelemy BES strategy (4) Increased education and skills capacity and infrastructure (5) Working with other islands to increase economies of scale (6) Provision of 'green fuels' for visiting vessels (7) Maritime enforcement planning (8) Funding and Investment opportunity
- T:** (1) Climate Change (2) Lack of strategic direction (3) No Investment

18 SAINT-PIERRE-ET-MIQUELON



The territorial Collectivity of Saint-Pierre-et-Miquelon is an overseas collectivity of France. The territory is divided into two communes: Saint-Pierre and Miquelon-Langlade. The two communes send a senator and a deputy to the National Assembly of France. France appoints a Prefect who represents the national government in Saint-Pierre-et-Miquelon. The Prefect is responsible for law enforcement and maintaining national interests. The OCT has a Territorial Council consisting of 19 members (four councillors from Miquelon-Langlade and 15 from Saint-Pierre). These councillors are elected by absolute majority vote in constituencies every 6 years.

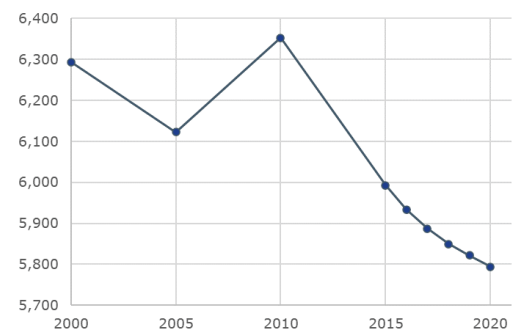


Latitude: 46.8852° N
 Longitude: 56.3159° W
 Capital: Saint-Pierre

Saint-Pierre-et-Miquelon is located East of Canada, 25 km from Newfoundland. The population of Saint-Pierre-et-Miquelon in 2020 is approximately 6,000. Citizens are citizens of France and have EU passports. The island has a total area of 242km² with 240m of elevation.

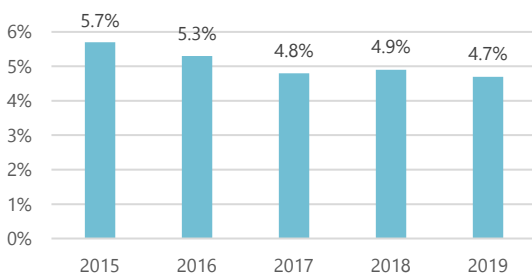
- The island's population totalled approximal 6,000 permanent residents; the population stabilized for the last 10 years
- The trend seems to be changing as the population has grown in 2020 due to new arrivals.
- The life expectancy is 78.9 years
- 66.3% of population is 15-64 years old
- 22.4% of the population is 0-14 years old while 11.3% is over 65 years old
-

FIGURE: POPULATION SAINT PIERRE AND MIQUELON



Source: United Nations Estimates

FIGURE: UNEMPLOYMENT RATE SAINT PIERRE AND MIQUELON (%)



Source: Iedom.fr (Unemployment in DEFM Category A)

Having reached 13% in the 2000s, The unemployment rate has been falling in Saint-Pierre-et-Miquelon. The largest part of the economy is based on tourism, fishing and servicing fishing fleets which sail in the area. The tourism sector is in full expansion in order to limit the historical dependence on the fishing sector.

In 2015, Saint-Pierre-et-Miquelon's gross domestic product (GDP) was EUR240 million. After an economic slowdown on the island in the 2000s, the GDP of Saint-Pierre-et-Miquelon increased annually by around 4% between 2008 and 2015. Including the very high cost of living, the GDP per capita in buying power was valued at USD24,463 (for 2015, EU-funded study). The GDP was evaluated twice in 2008 and 2015, data to be handled with caution given the strong economic fluctuations.

TABLE: ECONOMIC GROWTH SAINT PIERRE AND MIQUELON

Year	GDP (EUR)
2008	172 million
2015	240 million

Source: United Nations Statistics



FOOD SECURITY IDENTIFIED POLICIES AND/OR REPORTS			
Environmental	External Policy	Internal Policy	International/Regional



FOOD SOURCES. Fishery: There is a rapid increase in harvesting of sea cucumber (despite an uncertainty as to biological capacity for recovery) for use on Saint-Pierre-et-Miquelon, and for export mainly to China. Fish drying is to be trialled this year, with a view on local food security resilience. Quotas negotiated between Canada, and France include redfish, cod, ray, halibut, dab, haddock, plaice, lobster, and snow crab. Fishermen are subsidised for fuel, processing, buying boats, renovation, and to support off-season income. Artisanal fishery is exempted from customs duties. **Aquaculture:** Mussels, coquilles St. Jacques and scallops have been farmed, but could not be made profitable.

The sector receives €1.1 million support for research, market analysis and establishing the enterprise. Saint-Pierre-et-Miquelon's access to Eurozone market for molluscs and crustaceans is effectively barred, and the local market is small. Growing of seaweeds is undergoing trials, with a view to exports for food or cosmetics, through the government's Archipelè Développement. **Agriculture:** Livestock include sheep, pigs, some cattle; it covers 18% of the labour force; and a new abattoir has been opened. Eggs and poultry are now recovering under a single producer, with government support. Arable land is 8.7% of total - only 0.3 ha was cultivated in 2019, mainly for market garden crops and flowers, all belonging to one enterprise, Floradecor. A sustainable agricultural development plan (2018) has been developed, in line with the 2010-2030 Strategic Development Framework. There are no import duties for Agriculture. **Food Trade:** For 35% dependent on imports (€79.46 million: meat, clothing, fuel, electrical equipment, machinery, building materials). Exports add up to €5.5 million and include fish and fish products, molluscs, and crustaceans, mainly to Canada and France. **NUTRITION** Human development indicators are high and stable, indicating a good nutritional status.

FRESH WATER Rivers and streams.

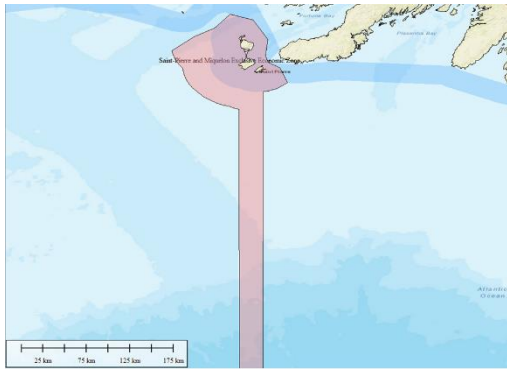
HOUSEHOLD INCOME SOURCES 49% government employment; the remaining part is mostly industry and marine servicing.

ENVIRONMENT: There is some loss of boreal forest due to pressure of hares and deer introduced for hunting between 1881 and 1982. The Intergovernmental Panel on Climate Change (IPCC) report on Canada (2019) warns against long-term ocean temperature rise, higher rainfall, defrosting of peatlands, changes to ocean currents, ocean acidification, loss of oxygen, changes in marine currents and sea-level rise. There is no specific local research on Saint-Pierre-et-Miquelon.

- S:** (1) Strong, diversified fishing sector with modern fleet, and the stability of government support and economic implication. (2) Strong legislation negotiated in participatory manner between government and fishers, on basis of scientific evidence.
- W:** (1) Lack of data on population numbers and ecology of some species of growing importance.
- O:** (1) Climate change may change the composition of the fishery but is unlikely to cause stocks to disappear. (2) Climate change is also opening opportunities for diversification in agriculture, mineral exploitation, and tourism.
- T:** (1) Climate change is altering the habitats of important hunted food species. (2) Long-term impacts of disturbance to previously frozen environments are not known.



BLUE ENERGY IDENTIFIED POLICIES AND/OR REPORTS				
Marine energies resource	Marine energy impact on CO ₂ emissions	External Policy	Internal Policy	International/Regional



OCT needs	
Consumption	51 GWh /yr (9.5MWh/yr/pers.)
Levelized Cost of Energy	Approximal: 0.45-0.5€/kWh
Current tariff (€/kWh)	0.12 to 0.16 €/kWh
Current CO ₂ /kWh	
Current CO ₂ /pers.	
Total current CO ₂ emission	

OCT energy resource	Resource Atlas Knowledge	Inside Territorial Waters	Outside Territorial Waters	Policy / Planning	Targeted objectives
Fixed wind	None				Should be higher
Floating wind	None				Should be higher
Tidal current	Embryonic				Could be higher
Wave	None				Should be higher
SWAC / OTEC	Embryonic				Aligned
Salinity gradient	None				Aligned
Tidal range	Embryonic				Aligned
Marine Storage	None				Should be higher
Marine Hydrogen	None				Must be higher

S: (1) Very good marine energy resources (2) Strong link and experience with ocean challenges (3) Acceptability offshore better than onshore (4) Some existing local studies are already completed

W: (1) Potential conflict of authority between EU Associated Member State and local authority (2) Not independent on the energy/electrical sector (3) Lack of capacity (4) Electricity tariffs highly subsidized by France

O: (1) Awareness on Climate Change in Saint-Pierre-et-Miquelon (2) OCTA could coordinate a global program (3) European founding programs for renewable energy (4) Low level of PV potential creates a push for other renewable energy sources (5) Jobs creation for marine engineers or agents

T: (1) Existing fear of change (2) Length of decision process due to double governance (3) Taxes on fuel would disappear with renewable energy (4) Importance of electricity reliability (cold territory)

OCT Means	Academic	Public sector	Private sector	Clusters / Innovation	Financing	Advocacy / NGOs
Means to reach the targets						
Reachable means						

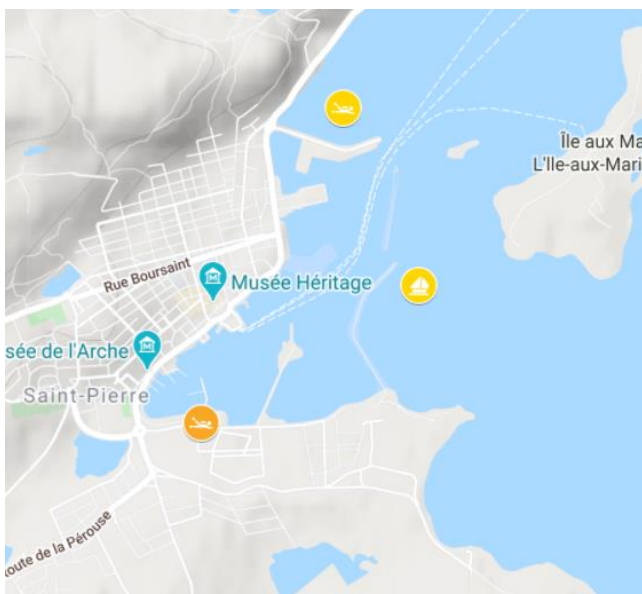


BLUE TOURISM IDENTIFIED POLICIES AND/OR REPORTS			
Environmental	External Policy	Internal Policy	International/Regional



The Saint-Pierre-et-Miquelon archipelago is the only overseas community in North America and at the gateway to Canada. It comprises eight islands and islets, with a unique geographical landscape. The archipelago has developed strong partnerships with its Canadian neighbour, whilst promoting its own identity and rich natural resources. Saint-Pierre-et-Miquelon has been severely hit by the deep-sea fishing crisis, which started in 1992, as well as by the reduction of its Exclusive Economic Zone in the same year and is faced with the challenge of its economic restructuring. After a 40% growth between 2009 and 2019, it is estimated that the tourism sector will provide a significant GDP resource into the

future. The partnership between Saint-Pierre-et-Miquelon and the French Development Agency (AFD) is ongoing for many projects related to stimulating economic growth through the tourism sector. One such project focused on the aviation sector as a key to ensuring the territorial continuity of the archipelago. AFD is involved in a project to replace the main aircraft of the local airline company, Air Saint-Pierre. This aircraft, an ATR42-500, is used for return flights between Saint-Pierre-et-Miquelon and Canada, which are essential for maintaining links with the outside world. Air Saint-Pierre-et-Miquelon has signed a public service concession (*Délégation de Service Public – DSP*) with the government for international flights and a public procurement agreement with the Territorial Collectivity of Saint-Pierre-et-Miquelon for inter-island flights. The total amount allocated to this project is €18.4 million, co-financed with the local bank. Furthermore, the opportunities for Saint Pierre et Miquelon to work in cooperation with the European Union cannot be understated, some of the key funding programmes provided by the EU for the 2021 - 2027 period strategically parallel with the aspirations of the Saint Pierre et Miquelon Government and should be pursued.



- S:** (1) Relationship with AFD; (2) Recognition of Tourism Sector offering strong economic returns (3) Diversification applying aviation sector as a transport option.
- W:** (1) More Internal Policy required relating to sustainable blue tourism (2) Spread of the archipelago (3) Potential conflict of authority between EU Associated Member State and local authority. Lack of available data.
- O:** (1) Increase partnership programs with AFD (2) Maritime Spatial Plan (3) Introduction of OCT 'Blue Tourism Standards and Audit Scheme' to promote OCT tourism initiatives; (4) Training in sustainable tourism for all hospitality workers. (5) Application through regional network for support funding programmes
- T:** (1) Climate Change (2) Slower Decision process due to double governance (3) Lack of action (4) Over-reaching carrying capacity



MARITIME IDENTIFIED POLICIES AND/OR REPORTS			
Environmental	External Policy	Internal Policy	International/Regional



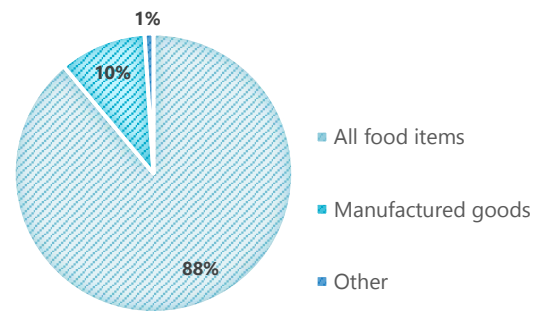
The archipelago of Saint-Pierre-et-Miquelon is a French enclave in a Canadian maritime and land space. Its location in the Gulf of Saint Lawrence and its low density make it a territory with very specific issues and characteristics. This small territory of 244 km² is home to less than 6,200 inhabitants, who mainly live on the southern island of Saint-Pierre. The construction industry, services and trade dominate its economy. Saint-Pierre-et-Miquelon provide two key ports, Port of Miquelon, (Main Port) and the Port of St Pierre (Smaller Port)

FIGURE: Total merchandise trade (millions of US\$)



Source: United Nations Data

FIGURE: Export structure by product group in 2019 (as % of total exports)



Source: United Nations Data

Saint-Pierre hosts the main seaport (cargo and cruise port), is the capital, the commercial and administrative centre. The port also administers daily ferries between the port of Miquelon and Saint Pierre. Saint-Pierre-et-Miquelon demonstrated a significant export growth rate of 20.7% in 2019, underlining the potential of the ports. The importance of the ports to the local economy and provision as a social critical infrastructure cannot be underestimated. Both ports could provide a catalyst for harnessing the local critical mass required for the evolvement of a key maritime Blue Economic Sector (BES) cluster and encouraging better skill and capacity development for local persons.

Top 5 partners in 2019 (exports, millions of US\$)	
Canada	6
France	0.779
Belgium	0.452
Ireland	0.198
Netherlands	0.171

Source: United Nations Data

- S:** (1) Increasing export growth
- W:** (1) Restricted capacity (2) Lack of strategic direction (3) Local skills (4) Lack of investment
- O:** (1) Development of the Saint-Pierre-et-Miquelon maritime BES cluster to attain critical mass (2) Port investment (3) Developing closer relationships with other islands (4) Diversification
- T:** (1) Climate Change (2) Environmental Degradation



Sint Eustatius is a special municipality of the Kingdom of the Netherlands. The special municipalities (Dutch: *bijzondere gemeenten*) carry many of the functions normally performed by Dutch municipalities. The executive power rests with the Governing Council headed by an Island Governor. The main democratic body is the Island Council. Dutch citizens of these islands are entitled to vote in Dutch national elections and (as all Dutch nationals) in European elections. Officially the islands are classed in Dutch law as being *openbare lichamen* (literally translated as "public bodies") and not *gemeenten* (municipalities). Unlike normal municipalities, they do not form part of a Dutch province and the powers normally exercised by provincial councils within municipalities are divided between the island governments themselves and the central government by means of the National Office for the Caribbean Netherlands. For this reason, they are called "special" municipalities.



Latitude: 17.4890° N
 Longitude: 62.9736° W
 Capital: Oranjestad

Sint Eustatius is one of the Leeward Antilles and is located to the northwest of Saint Kitts, and to the southeast of Saba. The Caribbean special municipalities of the Netherlands refer to a group of three special municipalities of the Netherlands that are located in the Caribbean Sea: the islands of Bonaire, Sint Eustatius, and Saba. They are collectively known as the "Caribbean Netherlands". The Caribbean part of The Netherlands has a population of 25,157 as of January 2019.

- As of 1 January 2020, the island's population totalled 3,139 permanent residents, a decrease of about 472 since 2011.
- Most people living on Sint Eustatius (2020) are between 45 and 50 years old.
- In 2020, roughly 258 people fell in this age group.

FIGURE: POPULATION SINT EUSTATIUS

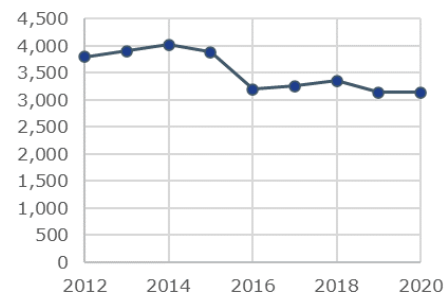
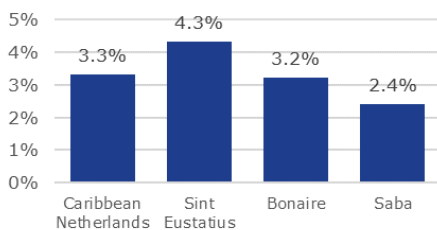


FIGURE: UNEMPLOYMENT RATE SINT EUSTATIUS

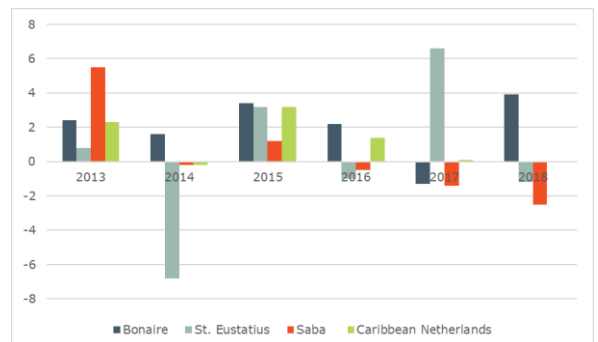


In 2018, approximately three percent of the population between 15 and 75 years old in the Caribbean Netherlands was unemployed. Unemployment differed markedly from island to island. Whereas on Sint Eustatius unemployment was 4.3 percent in 2018, on Saba by comparison only 2.4 percent of the population was unemployed.

Source: *Statistics Netherlands*

In 2018, St Eustatius' gross domestic product (GDP) recorded a contraction of 11.8 percent. By comparison, in the region, Bonaire's GDP increased by 3.9 percent in volume and Saba's GDP declined by 2.5 percent. This is based on the newest available data from Statistics Netherlands (CBS).

FIGURE: ECONOMIC GROWTH SINT EUSTATIUS



Source: *Statistics Netherlands*



FOOD SECURITY IDENTIFIED POLICIES AND/OR REPORTS			
Environmental	External Policy	Internal Policy	International/Regional



FOOD SOURCES A “Nature and environment policy plan Caribbean Netherlands 2020-2030” is formulated for Sint Eustatius, Saba and Bonaire with different organs of the island’s governments and the Dutch government. It still must be ratified by each island, but it is a sound basis for future planning. The main challenge is the lack of capacity (financial and human) on all islands, to carry out the plan.

Fishery: Lobsters represent a resource that is caught mostly for export. Fisheries responded to Covid-19 by expanding catches of suitable fish for subsistence. There are plans to professionalise fisheries

by basing management on data. To preserve the reef health is a major management objective, which requires basic data collection, high resolution geographic imagery, and biodiversity monitoring. Management of waste is also recognised as critical to ocean health.

Agriculture: Agriculture is being taken increasingly seriously, with long-term strategy involving control and limiting of roaming farm animals, in order to protect endemic plants and green crops. There were 12,000 goats and sheep on the island in 2013 which were left to roam and to feed themselves because growing feed was costly. Animal feeds are now subsidised.

The island government promotes food security, food quality and food safety. The government assists by connecting farms to wells and reservoirs, and by providing drip irrigation systems. The biggest problem is water availability for agriculture: Well levels drop in dry season due to over-use and results in let-in of seawater.

Food Trade Most supplies are flown in from Sint-Maarten, with origins in USA or The Netherlands. Direct shipments have been recently introduced from Miami, to ensure longer shelf life of fresh produce. Pests are a problem in non-refrigerated storage. The retail supply buffer is 2-8 weeks depending on product, so supply interruptions (due to weather or epidemic) can have a serious effect. **NUTRITION** No problems have been observed.

FRESH WATER Drinking water comes from two reverse osmosis desalination plants, and domestic tanks for rainfall. Groundwater is subject to salinity in dry season. Solar electricity currently covers 50% of need, provided by Statia Utility Company NV.

HOUSEHOLD INCOME SOURCES Predominantly tourism and associated support; some fishing and some horticulture as secondary occupations.

ENVIRONMENT The entirety of the coast is formally protected, including two marine national parks. Silting and sand threaten corals. There are two national parks on land at each extremity of the island. Environmental management is not optimal due to inadequate data and lack of manpower.

S: (1) Rich marine life, protected since 1996 (2) Easy access to Saba Bank

W: (1) There is only one main source of income (tourism), which is vulnerable to outside influence (2) Fresh water supply is scarce on all islands

O: (1) Rainwater retention programmes (2) Reforestation (3) Tigerfish are growing in attraction both to eat and to fish

T: (1) Disruption to supply chains (for example, by Covid-19) (2) Hurricanes



BLUE ENERGY IDENTIFIED POLICIES AND/OR REPORTS				
Marine energies resource	Marine energy impact on CO ₂ emissions	External Policy	Internal Policy	International/Regional



OCT needs	
Consumption	14GWh/yr (4.3 MWh/yr/pers.)
Levelized Cost of Energy	Approximal: 0.25 €/kWh
Current tariff (€/kWh)	from 0.12 €/kWh to 0.31 €/kWh
Current CO ₂ /kWh	
Current CO ₂ /pers.	
Total current CO ₂ emission	

OCT energy resource	Resource Atlas Knowledge	Inside Territorial Waters	Outside Territorial Waters	Policy / Planning	Targeted objectives
Fixed wind	None				Could be higher
Floating wind	None				Could be higher
Tidal current	None				Aligned
Wave	None				Aligned
SWAC / OTEC	None				Aligned
Salinity gradient	None				Aligned
Tidal range	None				Aligned
Marine Storage	None				Must be higher
Marine Hydrogen	None				Could be higher

S: (1) Climate change awareness (2) Open to other OCTs marine territories (3) Some capacity is present in renewable energy (PV+storage) (4) Energy component policy is on the OCT

W: (1) The size of the island in combination with a small population means a lower energy need. Thus may imply difficulties to reach cost efficiency in production technologies (2) Tourism based economy (incl. diving) implies reluctance toward industrial projects (3) Already equipped with onshore renewable energy (4) Potential conflict of authority between EU Associated Member State and local authority (5) Lack of capacity

O: (1) OCTA could coordinate the neighbouring islands in a same program (2) European founding program support renewable marine energies (3) Emulation of the neighbouring islands (4) Lack of available land: develop projects at sea

T: (1) Impacts of climate change, extreme conditions (2) Hurricanes (3) Sargassum material issues (4) Taxes on fuel would disappear with renewable energy

OCT Means	Academic	Public sector	Private sector	Clusters / Innovation	Financing	Advocacy / NGOs
Means to reach the targets						
Reachable means						



BLUE TOURISM IDENTIFIED POLICIES AND/OR REPORTS			
Environmental	External Policy	Internal Policy	International/Regional

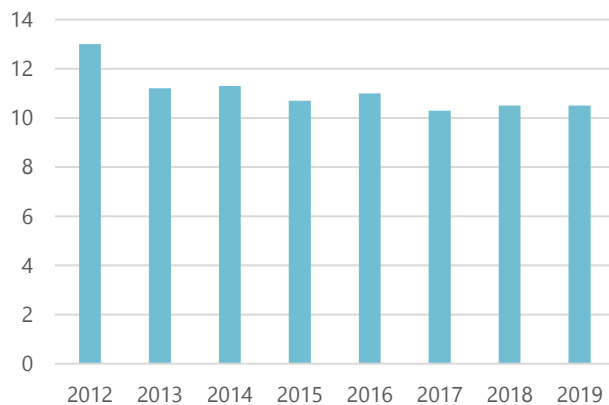


Sint Eustatius provides a unique experience for visitors and promotes an eco-tourism approach. The Government acknowledges the importance of the rich and diverse natural resources of 'Statia' and promotes the sensitivity of ecological sites. However, in 2018 a Spatial Plan was drawn up for redevelopment of 'Estate Guyeau'. This initiative proposes to develop this land, with an area of approximately 179,000 m², for tourist and residential purposes. Estate Guyeau will be a high-quality development for villas and a hotel. The reports required for the process did not include those of an environmental nature.

Unfortunately, data on tourism was limited for St Eustatius. The majority of the tourists arrived by air. It is unclear how many of these tourists arrive through cruises.

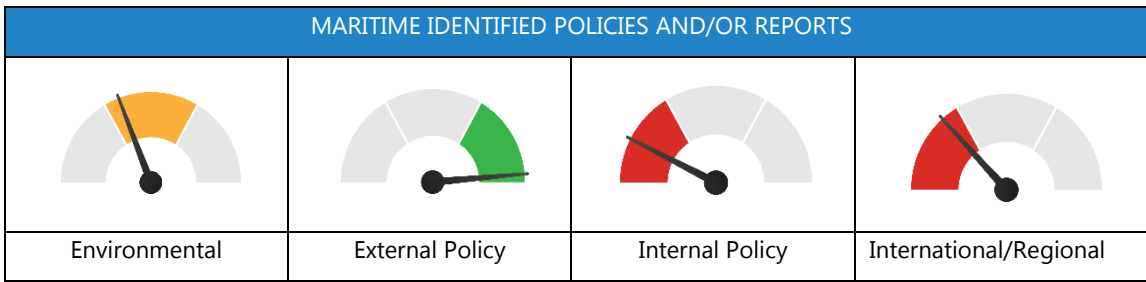
The Covid-19 pandemic is reported as having a big impact on visitor numbers. The Sint Eustatius Tourism Development Foundation is quite active and provides a very real opportunity for the Island to promote itself beyond the current eco-tourism system.

FIGURE: TOURIST VISITORS in Thousands SINT EUSTATIUS



Source: CBS

- S:** (1) Adoption of an eco-tourism approach (2) The Tourism Development Foundation (3) Rich diversity of natural attractions
- W:** (1) Lack of Tourism/Environmental Policy and Maritime Spatial Plans Policy (2) Understanding carrying capacity capabilities (3) Lack of data
- O:** (1) Creating a Sustainable Tourism Policy; (2) Collaborating with other OCTs to introduce the OCT Blue Tourism Standards and Audit Scheme (3) Developing Maritime Spatial Plans (4) Specialised training for all hospitality workers (5) Increase availability of data
- T:** (1) Further restrictions (Pandemic or otherwise) (2) Global economic dip (3) Rich biodiverse sites exceeding carrying capacity and biodiversity loss



The Sint Eustatius harbour facility, also known as the General Cargo Port Facility, is located at Gallowsbay. The port is recognised as a lifeline for both St Eustatius and its close neighbour Saba, especially post hurricane. The Port provides for cargo ships, tankers and other commercial vessels. It also provides facilities for visiting leisure crafts. The harbour also enables immigration and customs whilst the harbour master and staff oversee loading and off-loading of containers and supplies from vessels and the pilot ships, which direct tanker movements. The port implements the International Maritime Organization (IMO) rules and regulations are in line with International norms. The port affords a 'hub' for many related indirect and direct economic

activities, which are situated in or close to the port and therefore acts as catalyst for future Blue Economy sub- sectors growth.

FIGURE: Total merchandise trade (millions of US\$) for Sint Eustatius

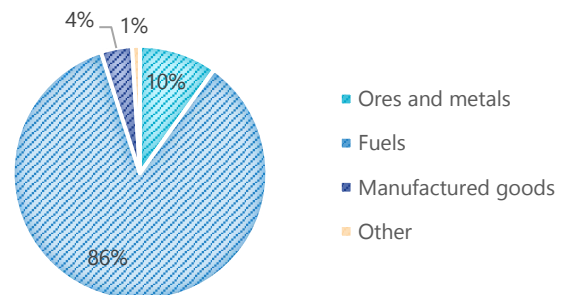


Source: Statistics Netherlands

Top 5 partners in 2019 (exports, millions of US\$)	
Cyprus	0.621
France	0.175
Belgium	0.084
Brazil	0.055
Netherlands	0.036

Source: United Nations Data

FIGURE: Export structure by product group in 2019 (as % of total exports) for Bonaire, Sint Eustatius, and Saba



Source: United Nations Data

S: (1) Well managed port operations (2) Established but not recognised maritime cluster

W: (1) Lack of specific data (2) Lack of Blue Economic Sectors (BES) /maritime strategy (3) No established (BES) maritime cluster

O: (1) Creation of the Maritime (BES) Cluster (2) Diversification (3) Port expansion with investment (4) Development of the Sint Eustatius BES strategy (5) Increased education and skills capacity and infrastructure (6) Working with other islands to increase economies of scale (7) Provision of 'green fuels' for visiting vessels (8) Maritime enforcement planning

T: (1) Dependency on Oil/Gas (2) Climate Change (3) Environmental damage (4) Biodiversity damage



Sint Maarten is a constituent country of the Kingdom of the Netherlands. The island is divided between Saint Martin in the North and Sint Maarten in the South. In the years before 2010 this country was part of the Netherlands Antilles but has since then become an overseas country. The island now has an Island Council consisting of 15 members who serve for four years. Sint Maarten is largely independent, for foreign diplomacy and military policy which are the responsibility of the Netherlands .

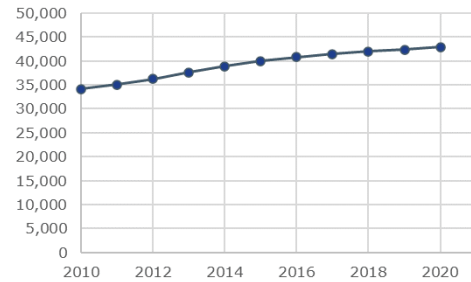


Latitude: 18.0425° N
 Longitude: 63.0548° W
 Capital: Philipsburg

Sint Maarten is in the Caribbean Sea at the northern end of the Lesser Antilles. Along with the Netherlands, Aruba and Curaçao, they make up the Kingdom of the Netherlands. The island is about 19km across and has a population of 42,883 (2020).

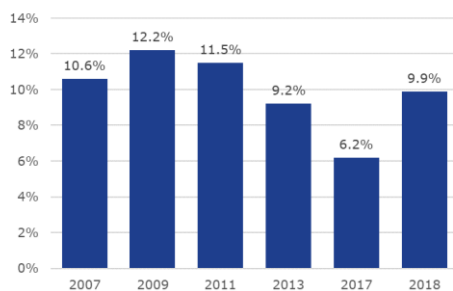
- The island's population has been growing in the last years with an average population growth around 1.5% per year
- The median age in the country is 41 years
- The life expectancy is 78.3 years
- 96.5% of the population lives in Urban areas

FIGURE: POPULATION SINT MAARTEN



Source: International Financial Statistics

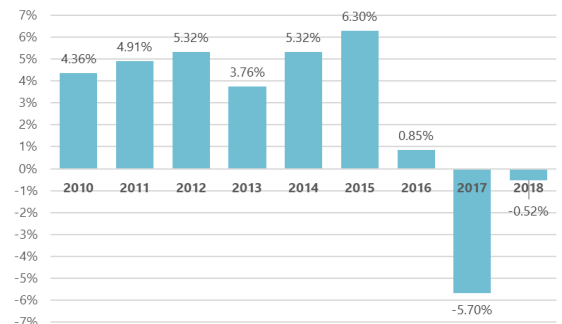
FIGURE: UNEMPLOYMENT RATE SINT MAARTEN (%)



Source: World Bank

Sint Maarten's economy is largely dependent on tourism as the service sector represents around 45% of the country's GDP. Nearly 1.7 million cruise passengers visit the island every year. The unemployment rate is relatively high with about 10% of the working population.

FIGURE: ECONOMIC GROWTH SINT MAARTEN (% change)



Source: World Bank

The GDP of Sint Maarten was approximately €1.8 billion in 2018. The country's economy has seen many years of growth until 2016. The hurricanes which struck the country in 2017 caused an economic downturn but the economy is estimated to rebound in the coming years.



FOOD SECURITY IDENTIFIED POLICIES AND/OR REPORTS			
Environmental	External Policy	Internal Policy	International/Regional



FOOD SOURCES The main source of food comes from supermarkets, stocked from abroad, mostly from the EU (cans and processed), Jamaica, Dominica, USA, and Mexico. Agriculture and fisheries cover around 0.1% of the GDP. The government intends to raise it substantially to about 5% **Fishery.** Sint Maarten has a relatively small Exclusive Economic Zone (EEZ) with 14km of coastal fishing zone. Sint Maarten has a limited amount of deep-sea fishing with a fleet of about 20 smaller boats. These have also turned inshore to fish for smaller fish for the food markets. There is a lack of hard data on fishing. **Agriculture:** Is mostly done through small-time market gardening on home plots, and includes some poultry, eggs and small animals (goats, pigs, iguanas and few cattle). The pandemic scare of

interrupted supplies increased the interest in domestic production on small household plots (with 1,000 people or more). The government is promoting home growing to increase self-sufficiency, and to improve nutritional quality. This is incorporated into the education system. Some produce is grown in Saint Martin, where land is more available (especially larger livestock). Meat and eggs are available from the French side of the island as well, where there is also a butcher. **Food Trade:** Sint Maarten has a duty-free port, which acts as a transit hub for the region. This makes importing food relatively cheap.

NUTRITION There are no chronic nutritional deficits, but increasing imports of processed foods is leading to lifestyle diseases. The Covid-19 pandemic highlighted that a high degree of urbanisation leaves a smaller food safety net: food consumption was 33% lower.

FRESH WATER The hygiene of ground water is either compromised by a lack of a central sewage system (some houses still use soakaways) or is brackish and is used for agriculture. There is, however, a lack of firm data on the status and quality of ground water. Drinking water is produced at three reverse osmosis desalination plants. Some houses have rainwater collection.

HOUSEHOLD INCOME SOURCES. The income distribution is fairly even: 75% of the incomes is distributed around median of €1,380 per month.

ENVIRONMENT Sint-Maarten is mostly a city; tourism infrastructure primarily occupies the shoreline, with urbanization sprawling into the hinterland. There is a lot of land reclamation on the Dutch side, especially of wetland areas. There is a seasonal expansion and contraction of beaches, but there is no known indication of long-term changes. The east side of Simpson lagoon has strong indications of pollution. In general, the lagoon has shifted from a once pristine state to one that is characterised by algae and invasive, foreign sea grasses, albeit remaining a habitat and nursery for sea life, such as fish, conch, and turtles. The Man-of-War Shoal Marine Park (31 km²) has become an important sanctuary for protected species.

S: (1) Disposable income is high for the region (2) Education level is generally high

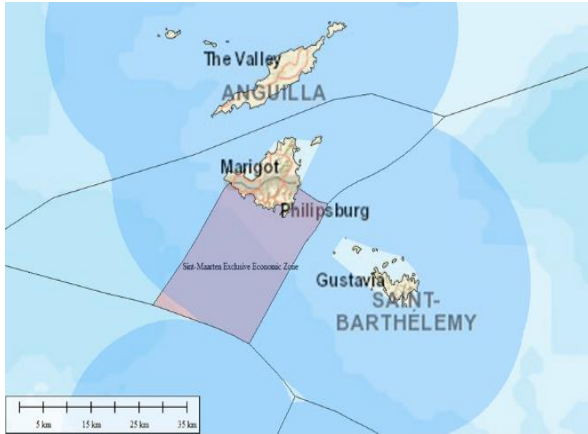
W: (1) There is virtually no domestic food supply as buffer against environmental or economic crisis (2) Fishing legislation and enforcement can be improved (3) There is no up-to-date baseline data on the natural resource base.

O: (1) Thorough resource inventory would give a sound base for future policy (2) WWF-NL is planning to review and revise fishing policy and legislation in Curaçao; the outcome of this can be helpful to Sint-Maarten (3) The Covid-19 shock to imports, coupled with health messages relating to overweight, has stimulated popular interest in home-growing of fresh horticulture. This opportunity should be seized, by providing extension support. It is strategically important

T: (1) Hurricanes and seismic activity present constant threat of sudden shocks to system, which is aggravated by climate change. (2) Administrative link to the Netherlands tends to result in not looking for opportunities for relating regionally with neighbours within the same ecology



BLUE ENERGY IDENTIFIED POLICIES AND/OR REPORTS				
Marine energies resource	Marine energy impact on CO ₂ emissions	External Policy	Internal Policy	International/Regional



OCT needs	
Consumption	372.7 GWh/yr (9 MWh/yr/pers)
Levelized Cost of Energy	Approx: 0.30-0.35€/kWh
Current tariff (€/kWh)	0.12 - 0.14 €/kWh + 0.10 €/kWh
Current CO ₂ /kWh	
Current CO ₂ /pers.	
Total current CO ₂ emission	

OCT energy resource	Resource Atlas Knowledge	Inside Territorial Waters	Outside Territorial Waters	Policy / Planning	Targeted objectives
Fixed wind	Embryonic				Should be higher
Floating wind	None				Aligned
Tidal current	None				Aligned
Wave	None				Should be higher
SWAC / OTEC	None				Aligned
Salinity gradient	None				Aligned
Tidal range	None				Aligned
Marine Storage	None				Should be higher
Marine Hydrogen	None				Should be higher

S: (1) Climate change awareness (2) Access to private sector investment (3) Open to other OCTs marine territories

W: (1) The size of the island in combination with a small population means a lower energy need. This may imply difficulties to reach cost efficiency in production technologies (2) Tourism based economy (including cruise tourism) (3) Lack of capacity

O: (1) OCTA could coordinate regional programs (2) European funding program support (3) Emulation of the neighbouring islands (4) Lack of available land: develop projects at sea

T: (1) Impacts of climate change (2) Hurricanes (3) Sargassum potential issues on materials (4) Taxes on fuel would disappear with renewable energy

OCT Means	Academic	Public sector	Private sector	Clusters / Innovation	Financing	Advocacy / NGOs
Means to reach the targets						
Reachable means						

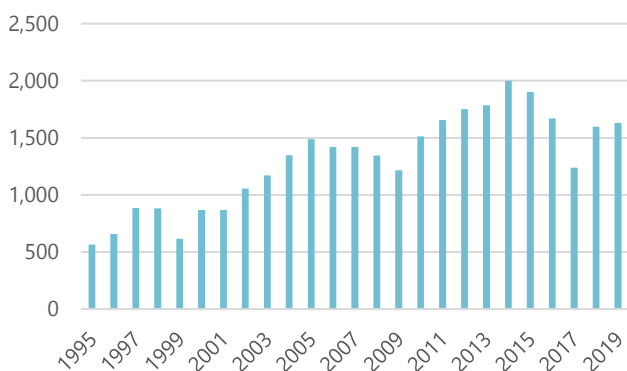


BLUE TOURISM IDENTIFIED POLICIES AND/OR REPORTS			
Environmental	External Policy	Internal Policy	International/Regional



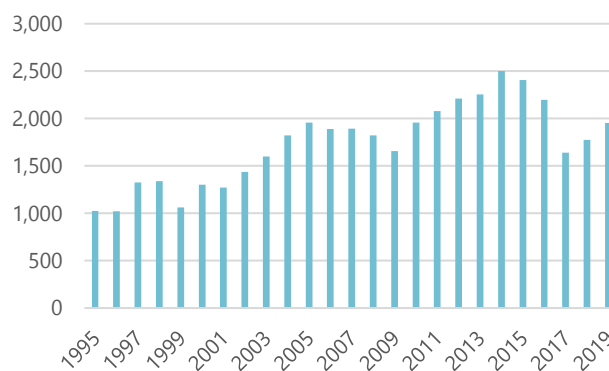
Sint Maarten is an autonomous island country that is a constituent of the Kingdom of the Netherlands in the Caribbean. Its neighbour is Saint Martin, a French territory that occupies the remainder of the island. Sint Maarten is highly vulnerable to natural disasters and adverse climate events, because of its location in the Caribbean hurricane belt. Coastal areas are exposed to flood risk from storm surges and tsunamis. Increased urbanization, along with climate change and limited country capacity to build with resilience, increase vulnerability to natural hazards.

FIGURE: CRUISE VISITORS in Thousands SINT MAARTEN



Source: United Nations Data

FIGURE: TOURIST VISITORS in Thousands SINT MAARTEN



Source: United Nations Data

Sint Maarten’s economy is tourism-based. The restaurants, hotels, and other tourism-related sectors, account for approximately 45 percent of Sint Maarten’s gross domestic product (GDP).

Transport, storage and communication sectors, accounting for 11 percent of GDP, are also related to the tourism sector.

Prior to hurricanes Irma and Maria and the Covid-19 pandemic, the tourism sector contributed 73 percent to the country’s total foreign exchange income in 2016. Sint Maarten’s harbour is a significant port for cruise tourism in the Caribbean, with 1.7 million cruise passengers visiting per year.

The airport is a hub for regional travel with a large network of connecting flights across the Caribbean.

- S:** (1) Excellent transport connectivity infrastructure (2) Strong tourism market
- W:** (1) Location on Hurricane Belt (2) Mass tourism (3) Lack of data (4) Lack of local skills base (5) Dependency of imports
- O:** (1) Economic diversification (2) Blue Tourism Strategy (3) Training and skills for citizens/hospitality providers (4) Investment in Sector (5) Improve the long-term environmental sustainability of tourism exploitation (6) Implementation of the ‘OCT Blue Tourism Standards and Audit Scheme’ (7) Develop the Blue tourism cluster (8) Maritime Spatial Plan (9) Funding applications with other OCTs (10) Innovation and techno park infrastructure (11) Improving natural resource management (12) Increasing the sustainability and resilience of the blue tourism sector (13) Promoting sustainable eco-tourism (14) Restoration of ecosystems, Mangroves etc. (15) Public private partnerships
- T:** (1) Climate Change (2) Hurricanes (3) Global economic downturn (4) Pandemic (5) Mass tourism (6) Environmental degradation / destruction



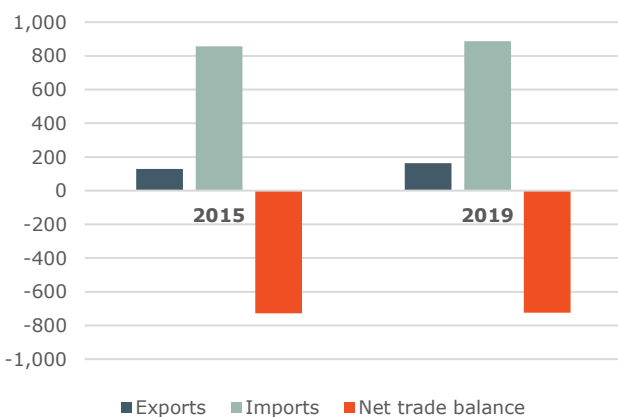
MARITIME IDENTIFIED POLICIES AND/OR REPORTS			
Environmental	External Policy	Internal Policy	International/Regional



Port St. Maarten is the centre of Sint Maarten's maritime cluster. It has exceptional facilities for cargo, cruise, and leisure. The Captain David Cargo Quay, located at the Dr. A.C. Wathey Cruise & Cargo Facility, provides a regional sub-hub for container trans-shipment, serving both a wide range of international carriers as well as the domestic market. The cruise sector is also well-established with two piers (respectively 455 and 545 m) accommodating multiple ships simultaneously. Sint Maarten can accommodate the world's largest cruise ships – the Genesis-class vessels: weighing over 220,000 gross tons each and having a capacity of more than 6,000 passengers and

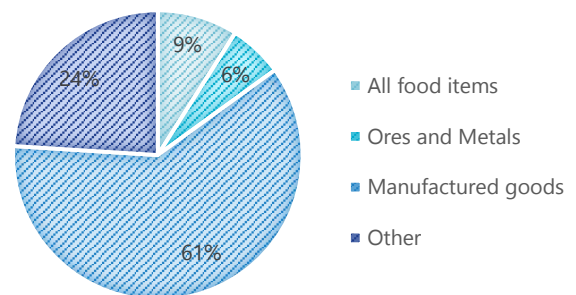
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FIGURE: Total merchandise trade (millions of US\$)



Source: United Nations Data

FIGURE: Export structure by product group in 2019 (as % of total exports)



Source: United Nations Data

Sint Maarten has significantly improved its trade activities, 2019 showing a healthy 9.5% export growth on 2018. Container throughput has remained static since 2015. With the international trend of growth in container traffic, it is predicted that this could increase rapidly during 2021.

The status of the Port of St Maarten with little intervention could provide significant added value by integrating Blue Economic Sector (BES) practices and supporting the maritime cluster.

- S:** (1) Significant investment in port expansion (2) Use of renewable energy in the port (3) Commercial Port Strategy
- W:** (1) Lack of available data (2) Lack of BES/maritime strategy (3) No established (BES) maritime cluster (4) Lack of a high value local skills bases
- O:** (1) Creation of the Maritime (BES) Cluster (2) Increase container throughput (3) Diversification (4) Increased capacity skills and education (5) Further Port expansion and diversification (6) Increased 'blue' investment (7) Development of the Sint Maarten BES strategy (8) Increased education and skills capacity and infrastructure (9) Working with other islands to increase economies of scale (10) Provision of 'green fuels' for visiting vessels (11) Expanding the remit of the National Security Service to embrace additional island maritime enforcement
- T:** (1) Climate Change (2) Environmental Damage

21 WALLIS AND FUTUNA



Wallis and Futuna is a French Island Collectivity. The territory is divided into three traditional kingdoms: Uvea, Sigave and Alo. The country is governed under French constitution including voting at the French presidential elections and having a High Administrator appointed by the French Government. The Council of the territory and the president of the Territorial Assembly lead the country. The Council includes three kings (one from each of the kingdoms) and three members appointed by the high administrator. The Territorial Assembly consists of 20 members who are elected by popular vote every five years. The territory also elects one senator to the French Senate and a deputy to the French National Assembly.

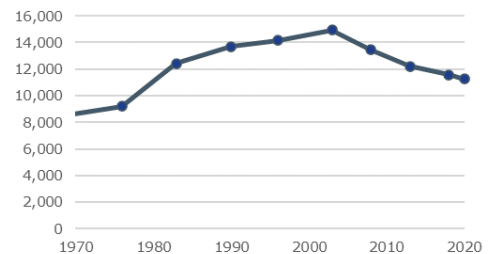


Latitude: 14.2938° S
 Longitude: 178.1165° W
 Capital: Matā'utu

Wallis and Futuna are in the South Pacific between Tuvalu to the North and Fiji to the South. The territory is made up of three main islands and some small islets. There are about 11,200 residents on the island as of 2020.

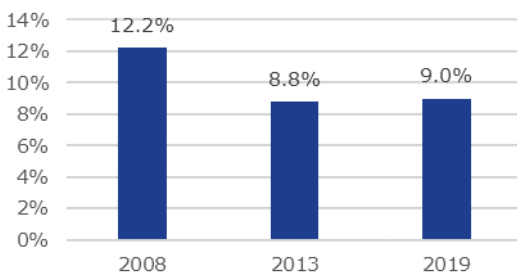
- The population has been falling since the turn of the century with around a 1.7% decrease in population per year (2020)
- The median age on the islands is 34 years old
- The life expectancy is 80.2 years old
- The total fertility rate is 1.71

FIGURE: POPULATION WALLIS AND FUTUNA



Source: International Financial Statistics

FIGURE: UNEMPLOYMENT RATE WALLIS AND FUTUNA (%)



Source: CIA databank / IEOM

The data on unemployment rate is limited but estimates place it at around 9% in 2019. The main industries in the country are handcrafts, fishing, and lumber. The country does also have an agricultural sector which produces fruit and livestock for local consumption. Another source of income is the licensing of fishing rights to foreign nations.

There is a lack of data on the GDP in Wallis et Futuna (in 2005 the GDP was €150 million or €10,000 per capita). There is a high dependency on local agriculture, with 80% of the population being involved in subsistence farming. Nevertheless, part of the population of Wallis et Futuna now resides in New Caledonia and there is a practice of sending back remittances to their families.



FOOD SECURITY IDENTIFIED POLICIES AND/OR REPORTS			
Environmental	External Policy	Internal Policy	International/Regional



FOOD SOURCES The average annual fish consumption is very high at 75kg per person, of which 86% is provided by subsistence catch. Home gardens also provide a substantial contribution as a food source **Fishery:** Wallis and Futuna has an Exclusive Economic Zone (EEZ) of 242,445 km². Artisanal fishery occupies about 170 boats, which is often secondary to agriculture or livestock. Current fish production does not satisfy the high demand. Larger longline vessels would allow deep sea fishing, but require more docking structures and facilities, training of seamen, and processing operators. **Aquaculture:** This is seen as a possible hedge against climatic effects on sea catches: There is ongoing research on the reintroduction of giant clams, sea cucumber, tilapia in lakes, rabbitfish and sandfish.

Agriculture: There is a more traditional agriculture, mostly to satisfy household demand (tubers, coconuts, bananas). There were 168 primary producers registered in 2019, of which 42% were related to fishing, 16% to livestock, 21% to agriculture/horticulture, and 21% to forestry. There are over 2,000 home gardens, which employs 78% of the population.

Food Trade. There is almost no export. On the import side, 508 tonnes of pork charcuterie are imported annually. This brings a potential opportunity for an import substitution: resilience would be improved by ensuring local processing (of fish, or of pork).

NUTRITION Under-nourishment is not a problem. However, there is a problem of overweightness, up to 90% of the population falling within this category.

FRESH WATER Wallis and Futuna has a fresh water subterranean, renewed by rainfall. There are some freshwater lakes on Wallis. Futuna has rained mountain springs.

HOUSEHOLD INCOME SOURCES Coastal fisheries are expected to sustain coastal incomes through to the year 2100, with more than 40% deriving income from fish.

ENVIRONMENT: So far, little attention has been paid to the long-term effects of climate change. Wall defences were constructed against sea-flood, but there is more interest now towards mangrove rehabilitation which can provide nature-based defences. Projections of an increased sea surface temperature, sea level (locally higher than the Intergovernmental Panel on Climate Change (IPCC) projections) and acidification, with increases in South Pacific Subtropical Gyre (SPSG, ocean current), and reductions in marine nutrients. Up to the end of the century, catches of tuna will remain stable, with some species improving, while others are declining. Oceanic and near-shore pelagic fisheries should expand, whilst other coastal non-vertebrate (sea cucumber and trochus) fisheries will decline. There is a problem of sedimentation of lagoons, mainly due to run-off from rain and effluent from pigs. In 2019, most investment projects concerned waste disposal, which used to go into the sea, and, notably, the installation of two hydroelectric plants on Futuna.

S: (1) It is still common for people (about 80%) to eat from their own food gardens (about 26% of total food intake) (2) Socially stable with heavy implication of traditional leaders (3) Disposable income is high for the region, but dependent on France

W: (1) Fragile soils inland require extensive fallow periods (2) Wallis and Futuna's EEZ lies within the generally nutrient-poor waters of the SPSG Province: net primary fish production is low (3) Technical and administrative capacity is severely constrained

O: (1) Low overall impact of Climate change on fishery: catches for Skipjack and Yellowfin tuna likely to rise to 2100, Bigeye tuna will remain stable, and Albacore is expected to move poleward. After 2100, all catches will decline (2) Promoting domestic micro-production to battle food security issues

T: (1) Climate change is expected to add to existing local threats to coral reefs (25-90% loss) even with strong management, mangroves (10-60% loss), seagrasses (5-50% loss) and intertidal flats in Wallis and Futuna, resulting in declines in the quality and area of all habitats, especially breeding grounds (2) Seismic activity frequent (3) Lack of institutional memory and constant rotation of senior and technical staff



BLUE ENERGY IDENTIFIED POLICIES AND/OR REPORTS

Marine energies resource	Marine energy impact on CO ₂ emissions	External Policy	Internal Policy	International/Regional



OCT needs	
Consumption	20GWh/y (1,7MWh/yr/pers)
Levelized Cost of Energy	Approx.: 0.36-0.40€/kWh
Current tariff (€/kWh)	0.12 to 0.16 €/kWh (simplified)
Current CO ₂ /kWh	
Current CO ₂ /pers.	
Total current CO ₂ emission	

OCT energy resource	Resource Atlas Knowledge	Inside Territorial Waters	Outside Territorial Waters	Policy / Planning	Targeted objectives
Fixed wind	None				Could be higher
Floating wind	None				Could be higher
Tidal current	None				Aligned
Wave	None				Aligned
SWAC / OTEC	None				Must be higher
Salinity gradient	None				Aligned
Tidal range	None				Aligned
Marine Storage	None				Should be higher
Marine Hydrogen	None				Should be higher

S: (1) Strong link and experience with ocean challenges (2) A particular social link with New Caledonia

W: (1) The size of the island in combination with a small population means a lower energy need. This may imply difficulties to reach cost efficiency in production technologies (2) Lack of capacity (3) Electricity tariffs highly subsidized by France (4) Potential conflict of authority between EU Associated Member State and local authority

O: (1) OCTA could coordinate a global program (2) European funding programs for marine renewable energy (3) Possible synergies with pacific OCTs

T: (1) Climate change impacts including dying corals and sea level rising (2) Taxes on fuel would disappear with renewable energy

OCT Means	Academic	Public sector	Private sector	Clusters / Innovation	Financing	Advocacy / NGOs
Means to reach the targets						
Reachable means						



BLUE TOURISM IDENTIFIED POLICIES AND/OR REPORTS			
Environmental	External Policy	Internal Policy	International/Regional



Wallis and Futuna's total marine area is 271,000 km². Wallis is famed as one of world's top kitesurfing spots, with other attractions including sea kayaking, SUP boarding, scuba diving, outrigger canoes, and fishing. Futuna also a dream playground for all water sports, and a spot beloved by surfing fans. In Futuna, opposite the kingdom of Alo, the island of Alofi, has virgin beaches, and there are plans to have Alofi listed as a UNESCO World Heritage Site. The TARA PACIFIC expedition found one the world's best-preserved coral reefs in Futuna. Only a few cruise ships stop at Wallis and Futuna every year, including its own flagged vessels. Moorings are provided for leisure yachts/boats in Gahi Bay or in front of Alofi.

Challenges include significant coral bleaching observed up to 20 meters deep, but no assessment of mortality has been made. A rise in sea level could affect mangroves and coastal ecosystems of the area. The first signs of coastal erosion were observed in Wallis with the disappearance of some beaches and coconut grubbing. A significant rise in sea level could affect the traditional cultures of taro which occupies an important place in the economy of Wallis and Futuna. Saltwater infiltration into the water table is likely to put greater pressure on Wallis and Futuna's already limited freshwater supplies, and are likely to affect the local population.

Wallis and Futuna presents a total number of 18 endemic species: 7 plants and 11 molluscs. Its biological diversity is limited due to the geological youth of its islands (2 million years) and their extreme geographical isolation. Of the species present on Wallis et Futuna, 75 species are considered threatened (71 Vulnerable, 3 Critically Endangered, 1 Endangered). There is one terrestrial protected area, covering less than 1% of the Total land area.

- S:** (1) Rich and diverse natural capita (2) Recognised maritime sports location (3) Some marine spatial planning (4) Application for UNESCO site
- W:** (1) Transport infrastructure (2) No strategic guidance (3) Lack of local blue tourism skills (4) Lack of investment
- O:** (1) Develop the work on Pacific Ocean Ecosystem Analysis (PACIOCEA) (2) Maritime Spatial Plans (3) Develop Blue Tourism strategy (4) Implementation of the 'OCT Blue Tourism Standards and Audit Scheme (5) Training for local hospitality providers (6) Climate-change adaptation strategy (7) Funding strategy with other OCTs (8) Investment attractors (9) Initiate the blue tourism cluster (10) Ecosystem/tourism indicators
- T:** (1) Climate Change (2) Environmental Destruction/Degradation (3) Global Economic Downturn (4) Exceeding carrying capacity (5) Mass tourism (6) Lack of monitoring

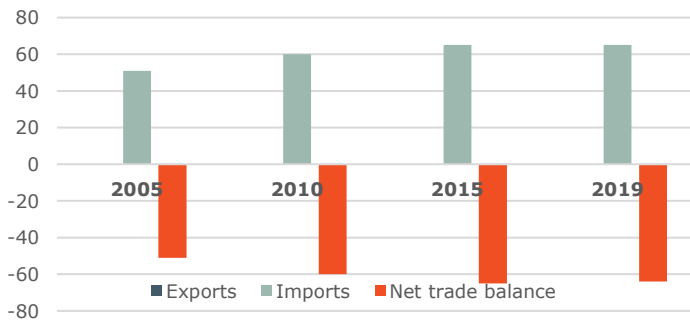


MARITIME IDENTIFIED POLICIES AND/OR REPORTS			
Environmental	External Policy	Internal Policy	International/Regional



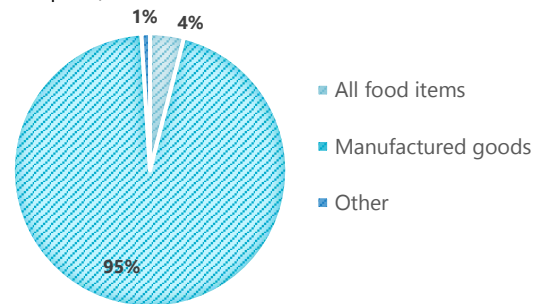
The main ports are recognised by the government as being strategic in the economic development of Wallis and Futuna. The two key ports in Wallis are: Ports of Mata'Utu (passengers and commercial freight) and Halalo (energy products). The key port in Futuna is the Port of Leava. These ports provide a hub for associated maritime commercial activity both direct and indirect, thus the ports can provide a strategic focus for the development of a wider maritime Blue Economic Sector (BES) cluster. The export growth of Wallis and Futuna was up in 2019 by +9.7% on 2018 figures. The figures show a slow growth since 2016 suggesting that this is likely to continue.

FIGURE: Total merchandise trade (millions of US\$)



Source: United Nations Data

FIGURE: Export structure by product group in 2019 (as % of total exports)



Source: United Nations Data

The importance of grasping the opportunities provided by the ever-increasing container market will provide significant opportunities in the future. The possibilities afforded the port to initiate and champion the Wallis and Futuna maritime BES cluster is an opportunity that will generate critical mass, significant diversification, and investment prospects, for example in the Blue Energy subsector.

Top 5 partners in 2019 (exports, millions of US\$)	
Nigeria	0.113
France	0.012
New Caledonia	0.007
Thailand	0.006
Honduras	0.001

Source: United Nations Data

- S:** (1) Established ports supported by Government (2) Increasing exports
- W:** (1) Lack of specific policy (2) Lack of a BES strategy (3) Poor transparency
- O:** (1) Development of the Wallis and Futuna maritime BES cluster to attain critical mass (2) Port investment (3) Developing the maritime governance and enforcement protocols for all BES activities (4) Developing closer relationships with other islands (5) Diversification (6) Increasing local skills and capacity (7) Provision of 'green' reception facilities
- T:** (1) Climate Change (2) Environmental Degradation

APPENDIX B – ONLINE SURVEY

OCTA Survey Blue Economy 2021

The Overseas Countries and Territories Association is developing a Blue Economy Road map to assist OCTs to take advantage of the economic opportunities provided by the rich resources available to them. These include, blue energy, food security, blue tourism and maritime sectors. The focus is on how the Blue Economy can increase a countries GDP, attract inward investment and more importantly create meaningful employment, whilst ensuring the longevity by the application of a sustainable development approach.

We would be grateful if you could complete the survey presented openly and honestly (we assure that all comments and answers will be dealt with confidentially) so the final Blue Economy Road map can take into account the thoughts and views of all stakeholders. This in turn will guarantee that the road map is realistic and embraces a viable framework for successful implementation.

This is your opportunity to make a difference, and we would appreciate if you might forward the survey link to relevant colleagues to increase its reach. The survey is estimated to take 10-15 minutes of your time. The survey will be opened until February 12th, 2021.

Yours sincerely Dr Karen Sumser-Lupson (Senior Expert and project Team Leader)

karen.lupson@gmail.com

Data protection

The survey is managed by COWI Belgium SRL (contracted by the OCTA) in line with its internal data protection policy which meets the requirements of EU legislation on data protection in particular Regulation (EU) 2018/1725. The survey data is processed through Qualtrics. The personal data collected via the survey will only be accessible to the company implementing the survey. The survey responses will be anonymous. For any questions on this, please contact Ramon Wessel at RAW@cowi.com

Q2 The following section covers some demographic information about you.

Q3 Title

- Mr
- Mrs
- Ms
- Prof
- Dr
- Other _____

Q4 First Name

Q5 Surname

Q6 Please add your E-mail (We will only use this to contact you in case we have additional questions)

Q7 Name of your organisation

Q8a Please select the sector you represent

- Government or Government Agency
- Private Sector
- Academic/Research Institution

Q8b Position in Organisation

- Minister
- Commissioner
- CEO
- Executive
- Director
- Senior Manager
- Manager
- Researcher/Investigator
- Other _____

Q8c We may like to contact you in relation to your expert knowledge. If you would agree, please add your contact number below, or specify you would prefer email only (please include Country code)

Q9 OCT of interest, Please select one or more of the following,

- Aruba
- Bonaire
- Curacao
- Saba
- Saint-Eustatius
- Sint-Maarten
- Saint-Barthélemy
- New Caledonia
- French Polynesia
- Wallis & Futuna
- Saint-Pierre-et-Miquelon
- French Southern and Antarctic Lands
- Greenland

Q10 Please select one or more from the following, the area(s) you represent or have a specific interest in.

- Blue Economy Food Security: Fisheries, Aquaculture, Blue Farming (Algae, Fish) etc
- Blue Tourism: Cruise, Coastal Tourism, Yachting/Marinas, Coastal Sports and Activities
- Blue Renewable Energy: Offshore, Wind Energy, Wave Energy, Tidal and other relevant energy generation systems, marine energy conversion (hydrogen, desalination)
- Maritime: Ports/Harbours Management, Shipping, Ship/boatbuilding/repair, Maritime Clusters, Services, Safety/security, Offshore Platforms, Maritime Transport Systems (MTS), Export/import etc
- Blue Technologies, Innovative technologies deriving from marine resources: Culture and/or harvest from bio-technologies for the pharmaceutical industry etc
- Marine Environmental Management, marine spatial planning, climate change, coastal erosion etc
- Other (Please specify) _____

Q11 A Blue Economy Road Map should incorporate the following, please select one or more from list:

- Provide guidance aimed at exploiting the Blue Economy

- A clear focus on increasing the sustainability of Blue Economy Ventures
- Encourage Governmental support for Blue Economy Ventures
- Promote the sustainable economic development opportunities of marine resources
- Increase functional relationships between Governments, Universities and private enterprises
- Drive blue economic growth and create employment
- Focus on enlarging blue economic space by expanding development and protection to all marine (coastal and open ocean-deep sea) ecosystems.
- Develop tools to tackle climate change via low-carbon and resource-efficient shipping, fishing, marine tourism, and marine renewable energy industries,
- Focus on Governance systems- in particular on Maritime Governance
- Encourage Governments to develop specific marine and maritime strategies to guide investors and stakeholders
- Provide guidance/signposts for all companies and potential investors to relevant information
- Provide information on the key Blue Economy sectors
- Provide guidance to implications of rule of law on Blue Growth activities
- Other (please specify) _____





Q12 In your opinion the 'State of Play' of the Blue Economy in your OCT/region is:

- I am not sure
- Not established
- Embryonic
- Mature
- Very Mature

Q13 In relation to your specific expertise and/or industry, please indicate your level of disagreement (0) or agreement (100) with the following statements <i>(Please drag the slider in order to provide your answer)</i>:

Strongly Disagree Disagree Not Sure Agree Strongly Agree

0 10 20 30 40 50 60 70 80 90 100

Blue Economy requires no support intervention	
I would like to receive specialised Blue Economy Skills and Training Support	
There are lots of policies available to help direct my organisation to pursue Blue Economic Development	
It would be useful to have a Blue Economy Single Point of Contact to help my organisation	
More Blue Investment is required	
I would like access to a Map and Database of all other Stakeholders operating in my area of expertise	
I would like further information on how my organisation can build concrete relationships with others	
Relationships with Universities and other Institutions would be beneficial to my organisation	

Q14 Are you aware of a 'flagship' project in your OCT/region, such as Green Ports or a Renewable energy projects?

- Yes
- No

Q15 Could you name the flag ship project/s, or provide a website?

Q16 Can you rank in order of importance the following <i>(please drag the lines in order of importance)</i>:

- _____ Strong Blue Economy Policy
- _____ Development of a Single Blue Economy point of contact
- _____ Availability of Specialised Blue Economy Skills and Training
- _____ Increased Investment in Blue Economy Sectors
- _____ Marine Spatial Planning
- _____ Better Maritime Governance

Q17 Are you aware of any new Blue Economy Opportunities or ideas?

- Yes
- No

Q18 Could you provide further information on your vision of an opportunity or idea?

Q19 In your opinion, what technical and capacity development (skills), are required to accelerate Blue Economy development in the OCT or region?

- Access to new University Under/Postgraduate courses
- New Apprenticeships
- Knowledge Transfer Partnerships (Universities linked to Private Enterprises)
- Blue Economy focused Vocational Courses
- Setting-up of Schools and/or Institutes specialised in Marine and Maritime Affairs
- Provide for measures to support self-employment, entrepreneurship and business creation
- Provision of short SMART Training Programmes
- Setting up Blue Growth Observatories (Single Point of Contact) with an Investment Advisory Hub
- Developing the Role of Maritime Clusters
- Developing a Blue Growth Strategy as a guidance document
- Promotion of Blue Careers Initiatives
- Other (please specify): _____

Q20 In your opinion, what infrastructure needs, are required to accelerate Blue Economy development in the OCT or region?

- Maritime Technology Parks
- Blue Innovation Centres to assist Start Up Companies
- Vessel Prototypes and Research Vessels
- Improving and Valorising Natural Capital
- Port Expansion/upgrade or transformation to support blue growth activities
- Investment Platform: aquaculture and fisheries, knowledge, blue renewable energy, biotech, tourism, environment and maritime sectors
- Marine research infrastructures, both observational and experimental
- Maritime Spatial Planning, Data and Information Sharing Center (Safety, Security and Governance)
- Fisheries and Aquaculture Research and Development Centre
- Ocean Energy and Bio Tech Parks
- Marine renewable energies and/or bio-technologies resource assessments
- Other (please specify): _____

Q21 In your opinion, what types of research and data, are required to accelerate Blue Economy development?

- Marine Spatial Planning
- Environmental Management
- Maritime Spatial Planning
- Sustainable Fisheries
- Sustainable Aquaculture
- Climate Change Adaption, Mediation
- Carbon Capture
- Sustainable Blue Economy Growth
- Renewable Energy Technologies
- Other (please specify): _____

Q22 In your opinion, do you believe there is a commitment from your authority to accelerate Blue Economy Growth in the OCT or region?

- Yes
- Maybe
- No

Q23 Could you provide a recommendation that you believe could improve/promote commitment from the authority in the OCT/region?

Q24 In your opinion, do you believe there is interest and a commitment from the Private Sector to accelerate Blue Economic Growth in the OCT or region?

- Yes
- Maybe
- No

Q25 Please provide a recommendation that you believe could improve/promote Private Sector interest and commitment to accelerate Blue Growth in the OCT or region?

Q26 This is your opportunity to contribute your thoughts, please provide detail on actions that you believe would accelerate Blue Growth in your OCT or region:
