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OFFICE OF THE PACIFIC OCEAN COMMISSIONER

BLUE PACIFIC OCEAN Report 2021

A Report by the Pacific Ocean Commissioner to the Pacific Islands Forum Leaders

The Pacific Ocean Commissioner is a mandate of the Pacific Islands Forum Leaders. That role is held by the Pacific Islands Forum Secretary General. The Pacific Ocean Commissioner is supported by the Office of the Pacific Ocean Commissioner, which is currently housed at the Pacific Islands Forum Secretariat.

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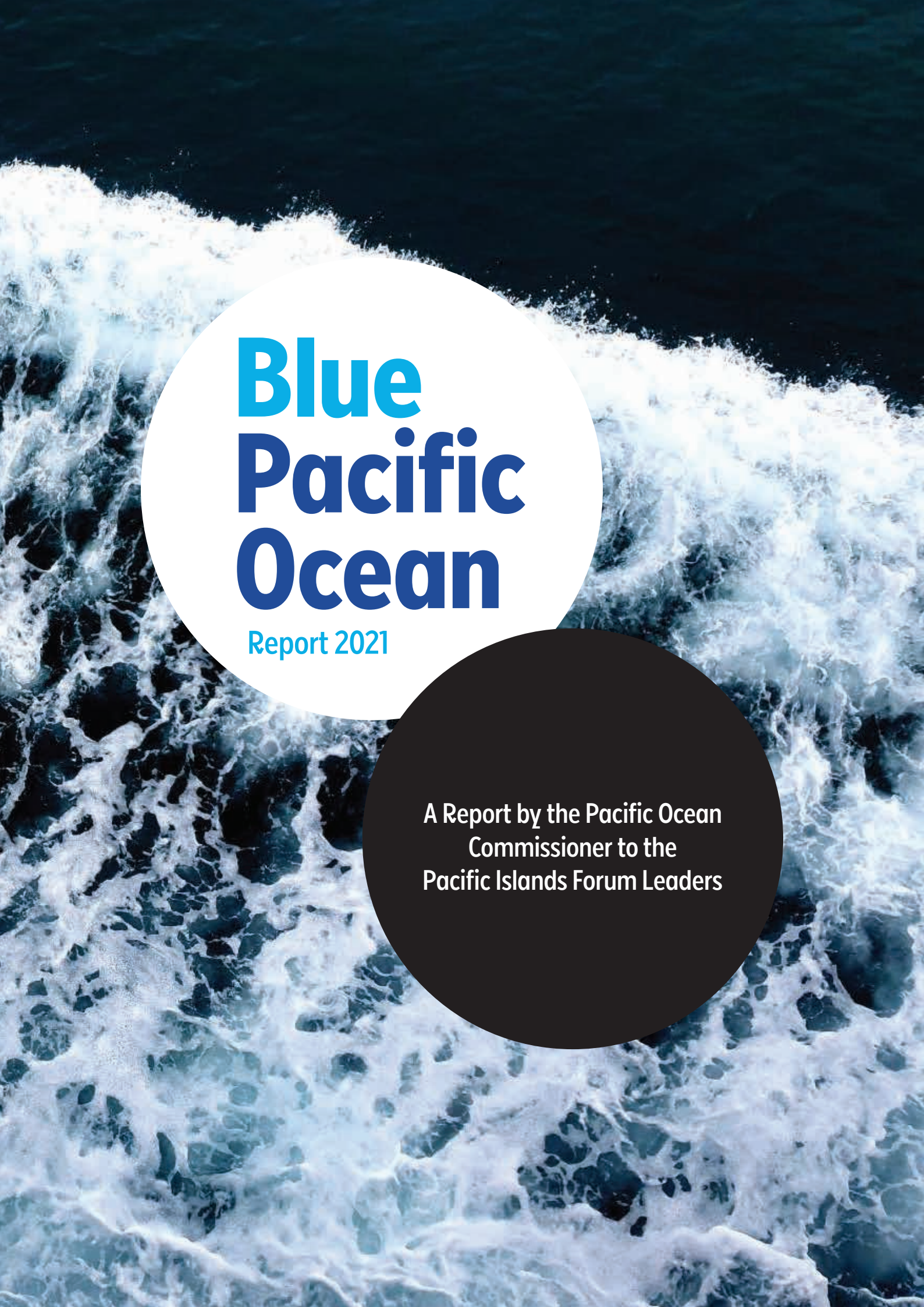

Blue Pacific Ocean

Report 2021

A Report by the Pacific Ocean Commissioner to the Pacific Islands Forum Leaders

Foreword

Dame Meg Taylor

Pacific Ocean Commissioner
January 2021

At the outset let me observe and highlight that over 90% of our region is oceanic, and the Pacific Ocean is by far the largest geographic feature of our planet Earth. In this context, our Leaders have long recognized the key stewardship role that we play in protecting the health and resilience of the ocean, whilst at the same time ensuring that we have in place measures that promote the sustainable use and management of its resources. Thus, it is key to recognize the links this report has to the development of, and the achievement and delivery of a "2050 Strategy for the Blue Pacific Continent" as called for by our Leaders in 2019".

As Pacific Islands Forum (PIF) Leaders highlighted at their 50th meeting in Funafuti, Tuvalu, August 2019, "escalating climate change related impacts coupled with the intensification of geostrategic competition, is exacerbating the region's vulnerabilities". Leaders noted that securing the future of the Blue Pacific cannot simply be left to chance, but rather that it requires a long-term vision, and a carefully considered regionalism strategy.

Most importantly, it requires a whole-of-region commitment to achieve it. The strategic geographical position of the Pacific, and potential opportunities that stem from the intensifying geopolitical interests in the region provides unprecedented leverage in future effort to realise for ourselves the "Blue Pacific Continent' that we want.

The issue of sea level rise and legal implications on maritime interests established under the **1982 United National Convention on the Law of the Sea** (1982 UNCLOS) has been an ongoing concern for Members. Recent Leaders' Declarations at the Sub-regional level such as the Amatuku Declaration by the Polynesian Leaders, the Delap Declaration by PNA Leaders and at the Pacific Islands Forum Leaders level is indeed evidence of the urgency of the issue. Loss of maritime interests, rights and jurisdictions would no doubt have a defining impact on our collective national interests. Intensifying the work in this area is certainly in line with the numerous calls by Leaders for action, which culminated in the 2019 tasking for the region to commit to collective effort, including to develop international law, to ensure that the Members' maritime zones could not be challenged or reduced as a result of sea-level rise and climate change. In reality, we as a region cannot begin to talk about a 2050 **Blue Pacific Continent** strategy, without first addressing the question of sea level rise and its potential legal implications and taking the necessary steps toward securing the limits of our Blue Pacific.

With these important processes coming together, the Blue Pacific is presented with an opportunity to draw from these processes to help accelerate implementation of our global commitments. These global commitments must be driven through the lens of our regional priorities. I once again reiterate that

Photo Credit: Marc Tamatatoa Frere

[1]Fiftieth Pacific Islands Forum Communiqué, Funafuti, 13-16 August 2019, para 5.

for the ocean, the priorities and requisite approaches encapsulated through the Framework for the Pacific Oceanscape (2010), coupled with what the Leaders outline in their Communiques, continues to provide basis for progressing implementation. This undertaking requires that periodic and holistic reviews and **stock take** on the progress of implementation, supported by robust monitoring mechanisms and coherence in reporting from all sectors. This should be institutionalized to help deliver timely implementation, not only of the policy goals envisaged under the **Framework for Pacific Oceanscape** and other regional initiatives - but also to deliver implementation of commitments under urgent international initiatives, inclusive of the **2030 Agenda for Sustainable Development**. For the ocean to remain a priority, we must give it the attention that it needs and deserves in our regional development discourse.

[2]Kainaki II declaration, para 12
[3]Fiftieth PIF Leaders Communiqué, para 7.
[4]50th PIF Leaders Communiqué, para 9.

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Report Highlights

Introduction

This Blue Pacific Ocean 2021 Report (BPOR) is indeed a first of its kind. While sectoral approaches to reporting on development and implementation in the various areas of ocean governance has been the norm, the BPOR is unique in the sense that it is the first attempt at the regional level to compile a comprehensive, multi-facetted, cross-cutting and holistic review and stock take of the state of affairs of ocean governance in the region, in the contemporary period. Rather than inventing the wheel as it were, the BPOR as is noted, leans extensively on existing regional, national and sectoral work and ocean initiatives, that now underpin much of the analysis in the report.

In substance, the BPOR examines in a holistic manner the progress of implementation of key regional and or international ocean initiatives in the key ocean sectors. As discussed in detail below, and as part of this examination the BPOR acknowledges that prevailing ocean governance policy gaps and implementation challenges, continue to impede the progress of implementation both at the national and regional levels. The BPOR also surmises that the absence of meaningful action, and or the necessary 'political will' to help close these governance gaps, and to address the implementation challenges, makes it extremely difficult for the region as a collective, to safe-guard it's interests. To this end, the BPOR also proposes forward looking strategies to help promote and facilitate effective regional, and or sectoral stakeholder collaboration, to overcome these challenges, going forward.

Importantly, it is also intended that the BPOR will serve as a useful resource in supporting regional and national ocean policy development and decision-making into the future. In particular, it is envisaged that the BPOR will contribute in a meaningful way to the development of the "2050 Strategy for the Blue Pacific Continent" called for by Pacific Islands Forum (PIF) Leaders in 2019.

Defining our Blue Pacific

While the report highlights that the Blue Pacific Continent is a region of great challenges, it also acknowledges that the Blue Pacific is a region of great potential, that the region can tap into this potential to maximize its benefits, through inclusive, collective and coherent regional action. The Blue Pacific Continent narrative captures the enormity ("continental size") of the area under the joint stewardship of Pacific Islands Forum Leaders. It is therefore incumbent upon us to be proactive in defining for ourselves and for our future generations - the Blue Pacific Continent we want, rather than to allow others to define that for us.

Status of Implementation - Moderate Positive Progress

The results of this broad stock-take exercise show us that the progress on implementation has been a mixed one. While some areas have achieved significant progress in terms of policy development and the attending technical support and implementation, the same could not be said for all areas of ocean work. Overall, while the report provides that there has been "moderate positive change progress" on the implementation of existing regional ocean policies and commitments, it likewise acknowledges that much remains to be done in terms of strategically progressing the implementation of key regional and global commitments.

This mixed result is no doubt attributable to a number of familiar factors, including among others, key governance issues discussed in detail in the Report. In brief:

i. We must acknowledge and address the complexities of the Pacific Region, including the complex relationships that currently exists in this crowded space we call 'oceans governance'. It requires ownership principally driven by PIF Members supported by a wide range of stakeholders who each have a role to play in a coherent and coordinated manner. This requires sharing a common vision and set of values and abiding to common rules of engagement. It might also require us to review the existing regional architecture in order to ascertain whether the current arrangements are indeed conducive to providing effective assistance to PIF Members.

ii. Meaningful progress requires that we adopt adaptive and flexible approaches in responding to the many national, regional and international challenges facing the ocean; in this context we should consider approaches that are inclusive, and promote integrated approaches, and setting clear trade-offs through informed, transparent and inclusive decisions.

iii. Need for the recognition and ownership of the regional flagship ocean policy instruments. Since PIF Leaders adopted the Framework for Pacific Oceanscape (FPO) in 2010, the important contributions of other sectors in terms of the implementation of the (FPO) have not been considered. Strengthening connectivity amongst the different sectoral policies will be a step in the right direction as it would naturally facilitate a comprehensive reporting on progress of implementation across the board.

Re-defining the future of the Blue Pacific

Looking ahead, this Report highlights a number of important strategies that must underpin governance of the Blue Pacific Ocean to achieve effectiveness, as follows:

i. The sanctity of the traditional and customary ties that Pacific peoples share with the Ocean as their endowment fund, inherited from their ancestors and for which we must hold in trust for future generations – must be acknowledged. As its stewards, we are required to look over it and care for it. To continue to benefit from it, we need to invest in it and nurture it through wise and sustainable management. Such measured management will enable us to address the most pressing challenges we are faced with. It starts with finding the right equilibrium between conservation and development (or sustainable management and use).

ii. It must be acknowledged that PIF Members face an acute challenge and responsibility in terms of surveillance, monitoring and enforcement. As an emerging security issue for the Blue Pacific Continent, the routine use of a PIF Members' EEZ for criminal activity is likely to transfer eventually into use of the islands themselves as criminals seek to acquire convenient logistical, facilitation and consumer hubs.

iii. A best scenario suggests the ability of the Blue Pacific Continent to realize and secure its full potential through demonstrating strong ownership at-all-levels and through having a strong sense of regionalism and embracing regional solidarity. The underpinning factor, in addition to the ownership and shared values of the Blue Pacific Continent, is the 'political will' which unlocks potential for certainty in decision-making related to cooperation, genuine partnership, clear vision, identification and delivery of adequate means.

Achieving the objectives of the Blue Pacific needs an emphasis on improving the sufficiency and adequacy of means of implementation including financing, together with the need to strengthen enabling environments at all levels, including achieving institutional and human capacity building at the national level, underpinned by relevant education programmes that are supported by the best data, information and knowledge especially scientific and technical information.

Highlighting key drivers and pressures on our Blue Pacific Ocean

In particular, the Report highlights in regard to **maritime boundaries** and the legal implications of sea-level rise that there are 48 shared or overlapping boundaries between Countries in the region. As of July 2020, 35 of these boundaries have been formalized. There are 13 outstanding bilateral and 5 High Seas boundaries remaining to be declared. Out of the 17 existing extended continental shelf submissions to the UN Commission on the Limits of the Continental Shelf, one was recommended in 2019. Furthermore, PIF Leaders have repeatedly expressed concern over the threat posed by sea-level rise to securing the limits of their EEZs and collectively the Blue Pacific Continent, and reaffirmed the importance of preserving PIF Members' existing rights stemming from maritime zones, claimed under the 1982 UN Convention on the Law of the Sea (UNCLOS), in the face of sea-level rise.

The Report repeats what has been said many times that the cumulative impacts of **climate change** pose the greatest threat to the region and the Pacific Ocean. The ocean and the atmosphere are closely related and form a complex system. If the ocean is an important climate regulator, its degradation is rooted in many of the same causes as climate change. The ocean suffers from much of the impacts of climate change. For the success of the Blue Pacific, it is important that there is mutual consideration of ocean and climate in the policies and programmes that we drive in the region, in order to ensure that we are effectively addressing these challenges. The region continues to be a leader in the fight against climate change at all levels nationally, regionally, and internationally. Pacific Islands Forum Members have elaborated and implemented national plans and nationally determined contributions. CROP organisations have integrated the consideration of climate change into their work plans.

The Report also describes that **marine pollution** takes many forms and originates from many sources. Pollution of all kinds produce negative ecological and socio-economic impacts. They put entire ecosystems and species at risks and the people who depend on them for livelihood and economic development. Marine pollution requires the involvement of everyone, at all levels, to be effectively addressed. The most effective control measure remains prevention and avoiding waste generation. There is a focus commentary on plastic pollution and marine debris but other sources of pollution such as from land-based activities and ship-based activities are also key.

On our **ocean biodiversity**, the Report highlights that our ocean is endowed with a wealth of ecosystems that provide many services including livelihoods (food), climate regulation, water cycle, natural disasters, cultural connection, leisure, and well-being. The regional genome is the foundation upon which is based all regional ecosystems, including their functionality and resistance. Yet, pressures from our own activities as well as from global processes, most of which are indeed anthropogenic in nature, are undermining our ability to continue benefiting in a sustainable manner from the bounties of our ocean. These pressures include a myriad of compounded threats from overexploitation, habitat loss and degradation, to pollution, climate change, or invasive species.

While this Report necessarily had its focus on the ocean, the impacts of **land-based activities** on the effectiveness of policies and measures aiming for the conservation and sustainable management of the ocean and the sustainable use of its resources were not overlooked or ignored. Connectivity between island, coastal and ocean ecosystems underpins the physical, chemical and ecological processes. As everything on an island (particularly low-lying atolls) is connected to the ocean, any activity that takes place on land can have an impact on the coast and the ocean.

This Report is not an attempt at providing a methodology of a **regional ocean ecosystems services accounting**. Rather, it provides some elements for the consideration of PIF Leaders on how ocean accounting can benefit national sustainable development planning as well as sustainable development of the Blue Pacific Continent.

The Report highlights that our region is endowed with so many beautiful and unique **species** including but not restricted to fish, whales, turtles, sharks and seabirds. Each species has a role in the complex ecosystem where they dwell. The removal of, or stress upon, one or several species can have dramatic impacts on entire ecosystems, which in turn impacts on humans. Each species merits to be given proper attention, which this Report is unable to do.

The Report emphasizes that adequately addressing the stressors and pressures on the Pacific Ocean cannot and should not be done in silos. This is in line with the 2010 Framework for the Pacific Oceanscape endorsed by PIF Leaders which calls for effectively supporting our ocean to regain and maintain its health, productivity and resilience requires a cross-sectoral, cooperative, and **integrated approach in governance and implementation of plans, activities and measures**. We will not succeed if we continue to approach all of our activities and programmes as independent of each other. We must address several overarching drivers that exacerbate ocean degradation. The main ones include the following: economy, demography, technology, values, governance and geopolitics.

Spotlight on Key Ocean Economic Sectors

The Report spotlights several key economic sectors which operate for the benefit of economies in the Blue Pacific Continent. Some are well established such: as marine transport, offshore and coastal fisheries, coastal sand and gravel (aggregate) mining. Others are emerging and developing fast. These include tourism, submarine cables and satellites, ocean renewable energy, deep-sea minerals and marine genetics biotechnology. Some key developments across these economic sectors are described including the following:

- The dramatic negative impact of the **COVID-19 pandemic** across key economic sectors in the region, in particular the **tourism and fisheries** sectors.
- The vital links provided by interisland shipping services in the **maritime transport** sector, yet the poor conditions of vessels and weak regulatory oversight prevail with recent examples of ferry disasters.
- The dramatic increase in **offshore fisheries** revenue achieved by the Vessel-Day-Scheme (VDS) of the PNA.
- The continuing lack of focus at the national level placed on **the coastal fisheries** sector.
- The essential need for **aggregate** for development comes at a cost to the coastal and nearshore environment. This must be minimized by establishment and enforcement of effective environmental regulations. Yet environment departments continue to lack capacity.
- The overall dramatic progress in improved communications provided by **submarine cables and satellites**. Cost still remains a challenge.
- The slow uptake of **renewable energy, marine biotechnology** and **air-ocean space interface** across the region likely driven by negative perceptions linked to technology and cost.

- The need to continue to explore for **deep sea minerals** recognizing that at the same time environmental data collection is being carried out. Several PSIDS have potential in their EEZs and four are sponsoring states for exploration licenses issued by the International Seabed Authority in the Clarion Clipperton Zone in The Area northeast of the Pacific Ocean Continent.

Where to From Here?

In regard to **governance and policy** the Report highlights there is a plethora of policies at all levels of governance. Nonetheless, the implementation and delivery on these policies is in many instances, weak. Siloed practices still prevail. Whilst there exists a core to ocean-related policy in the region there are opportunities for further fusing of a broader suite of regional narratives into the ocean agenda. Furthermore, with the considerable inertia behind the ocean agenda and the growing dialogue on blue economy, there may be a need for review and update of many components of the policy narratives in the near future. There are indeed possibilities for a rational review, which could include policy retirement, embedding of expanding sectors to reduce fragmentation and increased coherence of ocean with key regional development themes.

The Report provides a formidable opportunity for the region to build a **plan for a decade of accelerated regional ocean action** spanning the period 2021 – 2030. This will help reinforce the fact that the ocean agenda as a priority for the region that requires transformative action – strengthened by coordinated collective advocacy and engagement. This opportunity goes hand in hand with remainder of the 2030 Agenda for Sustainable Development, in particular SDG14 on the ocean.

The Report identifies in regard to contributions to conserving and/or managing our ocean and to effectively address direct pressures on our ocean, that a key element of looking ahead is a need to be built upon and strengthen wherever possible **traditional systems and marine protected areas including locally managed marine areas, and our engagement in forum addressing UNCLOS issues.** Traditional systems, marine protected areas and locally managed

marine areas are primarily driven by national actions and decisions. UNCLOS issues demand PSIDS participation at the global level which gives the opportunity for them to speak with one voice. Timely and important current examples are the Biodiversity Beyond National Jurisdiction conferences, and the ongoing work of the International Seabed Authority on exploitation regulations for deep-sea minerals and a benefit sharing modality to deliver on the principle of the Common Heritage of Mankind.

In the last section, the Report highlights that **inclusivity and transparency are essential, and that no one should be left behind**. An attempt is made to describe the need for each of us (individuals, communities, organisations and entities) at all levels to redefine our relationship with the ocean and redefine our relationship amongst ourselves. Increasing the use of some old and some new tools is highlighted. These include **integrated ocean management, marine spatial planning, zone-based management, dynamic and adaptive methodologies for monitoring and review.**

The need for a systematic reporting process to be put in place within the decision making architecture of the region in order for PIF Members to be provided with a comprehensive overview of the all the work undertaken on the ocean, at all levels and across the different sectors. This gap will need to be addressed in order for PIF Members to make informed decisions on their joint stewardship through collective and coherent action.

The 2010 Framework for Pacific Oceanscape endorsed by PIF Leaders in (Action 2B) calling for Regional Ocean Alliance/Partnership mechanism facilitated by the Pacific Ocean Commissioner to provide effective ocean policy coordination and implementation was an attempt to address this issue of inclusivity and transparency. This now exits in the form of the Pacific Ocean Alliance (POA). Ambition was high and it is clear that the modality of the POA at its last meeting in 2019 that it is in need of review to clearly separate information sharing from decision-making.

As a final observation, throughout the Report reference has been made to ambitious commitments the region has made nationally, regionally, and internationally. In reality these have not been adequate to reverse the degradation facing the ocean. There are gaps in implementation, duplication of work, and damaging competition. Improving the health of the ocean and maximizing on the collective opportunity to benefit from its resources requires first that we acknowledge that we all are responsible for where we are now. Most importantly, deciding where we want to be as a Blue Pacific Continent in the future will determine what we need to do in the short, medium, and long term.

Not withstanding the issues and suggested ways ahead raised in this Report there are also issues that were reinforced in the Pacific Islands Forum Leaders Ocean Statement 2021 and the discussions of the 2050 Strategy.

All on deck - Pacific Ocean Commissioner Dame Meg Taylor with the Pacific Islands Forum Negotiators for the Biodiversity Beyond National Jurisdiction Instrument, on board the Uto ni Yalo. Suva, Fiji. Feb 2020.

Introduction

"It is because "we are the ocean" that we come together and act as one Blue Pacific Continent, as we have done throughout our history – and as we must again do now and into the future[5]."

The people of the Blue Pacific, through their Leaders, have reaffirmed time-and-again their role as guardians, custodians, and stewards of the Ocean. They have done so individually and collectively through numerous policy frameworks and declarations at the national and regional levels.

Moved by their Ocean identity, people of the Blue Pacific have also contributed to shaping ocean-related international law and policies, including through the United Nations Convention on the Law of the Sea (UNCLOS); the UN Fish Stock Agreement (UNFSA); the Part XI Agreement; Rio+20 Ocean Package; the Agenda 2030 for sustainable development, in particular its sustainable development goal 14 on ocean; the first UN Ocean Conference, co-presided by Fiji; the future legal instrument for BBNJ; as well as current discussions on the legal implications of sea level rise on maritime boundaries.

The great successes achieved at the regional and international level are testimonies of the power of togetherness, and regionalism. Strengthened cooperation and coordination is paramount to achieving a healthy, productive and resilient ocean. Ten years since the adoption of the Framework of the Pacific Oceanscape by Pacific Islands Forum Leaders, as we take a forced-covid-19-induced pause from what would have been the Super Year of the Ocean, and prepare to project ourselves in 2050, this report seeks to dive into a series of questions: collectively, what has our ocean custodianship meant? Are we optimizing our relationship with the ocean? Are the tools we have put in place effective in supporting our Blue Pacific way? Have we made good to all our commitments?

The first part sets out what the report is about. In particular, it sets the context and scope of the Blue Pacific, and provides an explanation of the context, mandate, methodology used, and challenges met in the elaboration of this report. The second part illustrates the importance of the ocean, its ecosystems, and species in the sustainable development of our region. It also identifies pressures, and threats and drivers of pressures that have the potential to undermine the numerous benefits generated from the ocean, such as climate change. It also highlights some key economic sectors of importance now, and some potentially important in the future. Part 3, which is a summary of an analytical work on monitoring the implementation of regional ocean commitments, provides an overview of ocean policies, institutional actors and their relationships. It gives a snapshot on the status of implementation of regional policies and commitments. Taking into account what previous parts concluded, part 4 suggest the need to commit to a redefined Blue Pacific Way Forward. The last part is "Conclusion" which provides key messages from this whole stock taking exercise.

Photo Credit: Pacific Islands Forum Secretariat (PIFS)

Part 1: Charting the Course

1.1 Genesis of the Report

As Leaders noted at their 50th meeting, "escalating climate change related impacts coupled with the intensification of geostrategic competition, is exacerbating the region's vulnerabilities". Leaders noted that securing the future of the Blue Pacific cannot simply be left to chance, but rather requires a long-term vision, carefully considered regionalism strategy. Most importantly it requires a collective commitment to achieve it[6].

Leaders endorsed the development of a *2050 Strategy for the Blue Pacific Continent* to secure the future of the Blue Pacific[7], and ensure social, cultural, environmental, and economic integrity, sovereignty and security in order to protect people, place and prospects of the Blue Pacific[8]. Leaders also agreed on strong political leadership to advance climate change action, protecting our Ocean's health and integrity, sustainably managing our island and ocean resources, connecting our oceanic continent (air, sea and ICT) and ensuring healthy people, as cornerstone priorities informed by science[9].

In late 2019, the Pacific Ocean Alliance (POA) meeting brought together various regional ocean stakeholders in Suva, Fiji. Participants at the POA meeting concurred on the relevance for a stock take on the State of the Blue

[6]Fiftieth Pacific Islands Forum Communiqué, Funafuti, 13-16 August 2019, para 5.
[7]Kainaki II declaration, para 12
[8]Fiftieth PIF Leaders Communiqué, para 7.
[9]50th PIF Leaders Communiqué, para 9.
[10]POA October 2019 meeting summary, para 34, 76

Pacific Ocean[10]. Such a stock take is also consistent with the 2014 Framework for Pacific Oceanscape (FPO). The POA meeting identified the following areas of relevance; i) ocean governance, ii) implementation of various instruments, frameworks and initiatives, and iii) progress and the impacts such instruments, frameworks, and initiatives have made in addressing key issues and challenges. This stock take would support Leaders taking informed decisions to continue improving and preserving the health, productivity, and resilience of the Blue Pacific Ocean, including through the 2050 Strategy.

The Pacific Ocean Commissioner, tasked the Office of the Pacific Ocean Commissioner (OPOC) to elaborate this report with the following three objectives:

i. Provide a snapshot of the trends driving our Blue Pacific's Ocean health, productivity and resilience;
ii. Map out the Blue Pacific Ocean governance related policies, instruments, and frameworks and their progress on implementation;
iii. Identify possible areas to further strengthen coherence and coordination for implementation, as well as future strategic areas for engagements, investments and deepening rights over ocean resources.

As a first of its kind, the Blue Pacific Ocean Report sought to capture the three broad objectives through an understanding of what the Pacific Ocean represents to the people and the region. The elaboration of this report was guided by the values and principles of the Framework for Pacific Regionalism, as adopted by the Pacific Islands Forum Leaders in 2014.

This report is the product of desktop research of data, statistics, analytical publications, as well as policy related documents on official portals and websites of member countries (government, parliaments, research institutions), regional organizations, international organizations, scientific bodies, private sector, academia, and others.

Photo Credit: Rimon Photography

[11]Members include Blue Pacific countries representatives, CROP, international organizations, NGOs and CSOs, academia, and private sector.

An initial exploration of data and information publicly available identified gaps to fill. The OPOC sent out a questionnaire in May 2020 to Forum members and members of the POA[11] identifying areas where inputs were sought. Nine contributions were received, including four from PIF Members and one from one member of the Council of Regional Organisation for the Pacific (CROP) organisation. While extremely grateful for those taking the time to fill out the questionnaire, not all elements provided could be used in this report, in particular due to the lack of data on other countries or subregions.

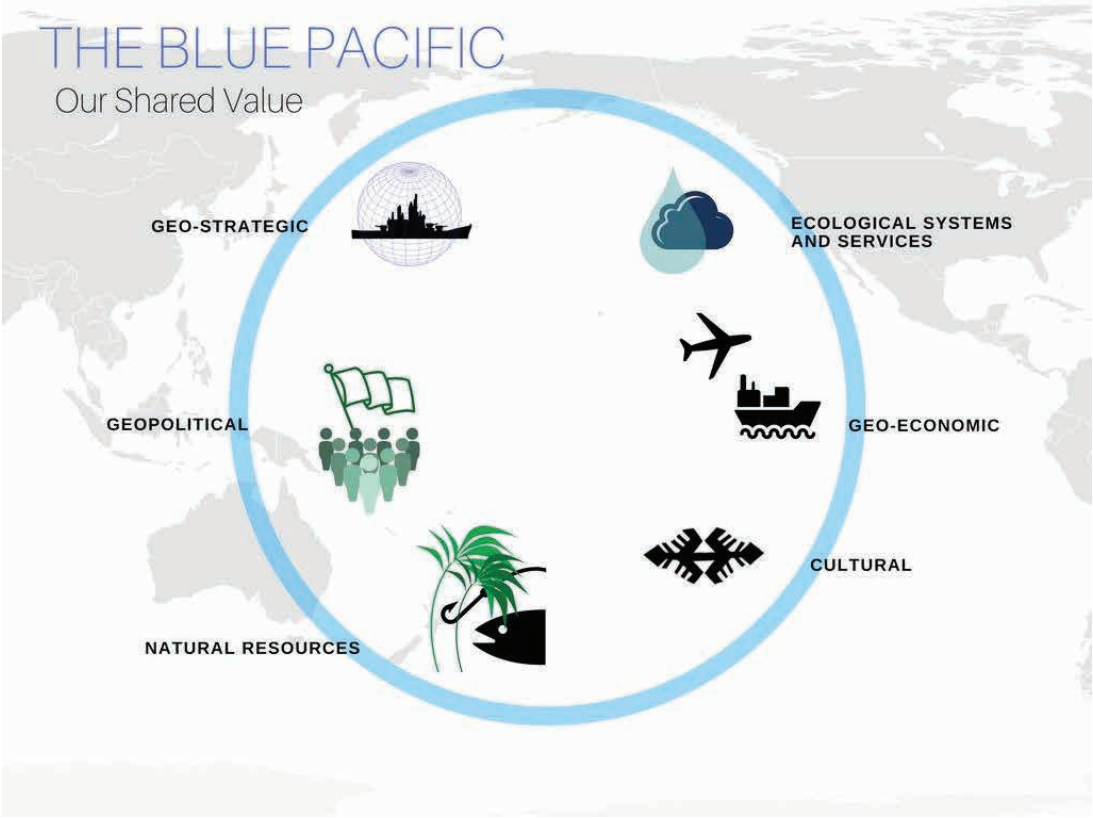
The report also incorporates conclusions and discussions held at the 2019 POA meeting are inserted throughout the report. These discussions allow for some cross-sectoral, multi-stakeholder and regional thinking on some of the ocean issues at hand, with the caveat that participants at the POA meeting were not representative of all the interests and views of the region's stakeholders.

Furthermore, the analytical work in the context of the preparations for the United Nations Ocean Conference (UNOC) and Our Ocean Conference forms an important component of the report. The work provides an overview of all ocean policies and commitments endorsed by Leaders, analyses progress and effectiveness of existing ocean initiatives implemented in the region, and identifies key implementation challenges and gaps relating to implementation of Blue Pacific priorities.

Consultations were also held with all CROP Agencies and Pacific Islands Forum Members post-drafting to endeavor to ensure the accuracy of the information in the report.

1.2 Defining the Context and Scope

Almost 20 years ago in 2002 a first Pacific Islands Regional Ocean Policy and Implementation Plan was developed. In 2010 a Framework for the Pacific Oceanscape emerged.



Source: PIFS

In 2014, the Pacific Islands Forum Leaders adopted a Framework for Pacific Regionalism and committed to working together to "address our common challenges, harness shared strengths, and ensure that our individual and collective advancement brings practical benefits to all Pacific people". They sought to do so through the support, commitment and ownership of all Pacific people, including governments and administrations, civil society organisations, private sector representatives, regional organisations, development partners, media, and other key stakeholders.

Framework for Pacific Regionalism: Values[12]:

We value and depend upon the integrity of our vast ocean and our island resources.

We treasure the diversity and heritage of the Pacific and seek an inclusive future in which cultures, traditions and religious beliefs are valued, honoured and developed.

We embrace good governance, the full observance of democratic values, the rule of law, the defense and promotion of all human rights, gender equality, and commitment to just societies.

We seek peaceful, safe, and stable communities and countries, ensuring full security and wellbeing for the peoples of the Pacific. We support full inclusivity, equity and equality for all people of the Pacific.

We strive for effective, open and honest relationships and inclusive and enduring partnerships—based on mutual accountability and respect—with each other, within our sub-regions, within our region, and beyond.

[12]Framework for Pacific Regionalism, 2014. Available at: https://www.forumsec.org/wp-content/uploads/2018/02/Framework-for-Pacific-Regionalism_booklet.pdf

The Framework for Pacific Regionalism aims for "a region of peace, harmony, security, social inclusion and prosperity so that all Pacific people can lead free healthy and productive lives", as reiterated and further strengthened by subsequent Leaders' declarations, including the Boe Declaration on Regional Security and the Kainaki II Declaration on Climate Change.

At their 2017 Pacific Islands Forum Meeting in Samoa, Leaders endorsed the. "Blue Pacific" identity as the core driver of collective action to advance the Leaders' vision under the Framework for Pacific Regionalism and regional priorities such as ocean management and conservation, fisheries, resilience, regional security and sustainable development. To do so, people of the Blue Pacific are guided by the following:

One Blue Pacific – recognizing and engaging with the full Forum Membership;

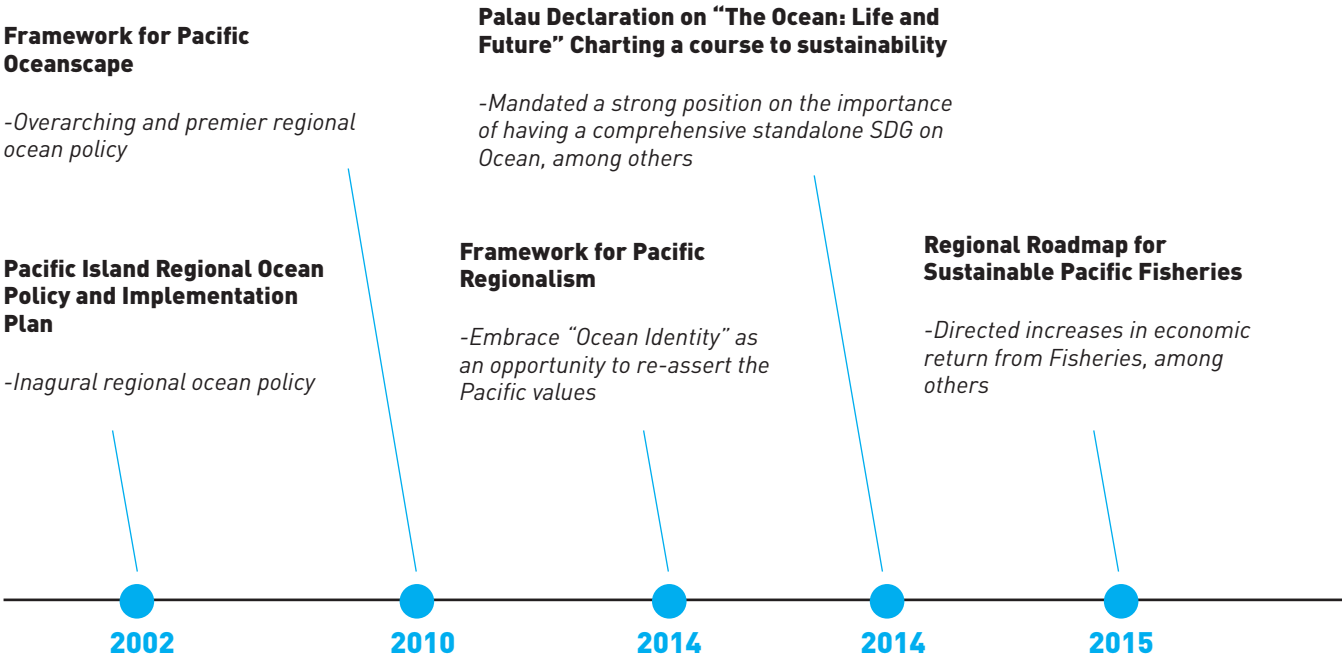
Regional priorities – embedding and progressing the Forum's regional priorities;

Partnership approach – joint planning, programming and delivery by both the Pacific Islands Forum and the Forum Dialogue Partner(s);

Utilising existing mechanisms – aligning with, and seeking to build-off existing regional and international mechanisms, processes and meetings; and

Collective outcomes and impact – developing joint outcomes statements and outlining a clear process for follow-up and implementation.

Figure 1:
Chronology of Regional Ocean Related Policies and Political Decisions



Since 2017, the concept of the Blue Pacific has generally and increasingly embraced by all regional actors, in particular the CROP and has become the narrative for regional policies and engagement.

The Blue Pacific Continent narrative is intended to coalesce most, if not all sectors of development to secure sustainable management that provides for collective environment protection together with sustainable use of resources. The inclusion and integration of the land areas is key. Much pollution of the ocean derives from land-based sources. Much development is and will increasingly likely be in coastal areas. The "ridge-to-reef[13]" part of the hydrological cycle is key to understanding the ecosystems of the Pacific Ocean Continent.

[13]Pacific R2R Ridge to Reef project resources at: https://www.pacific-r2r.org/resource-library?term_node_tid_depth=21

Pohnpei Oceans Statement: A course to sustainability

-Re-affirm implementation of SDG 14

-Fisheries agenda to include regional "coastal fisheries" issues

2016

Blue Pacific Identity

-Core driver of collective action for advancing Leaders vision, inspired leadership to act as one "Blue Continent"

2017

Pacific Regional Platform for Partnership and Action on SDG 14

-Declare commitments towards the implementation of SDG14, among others

2017

Boe Declaration

-Expanded concept of security inclusive of environmental security

2018

Fiftieth PIF Communique & Kainaki II Declaration

-Mandated development of 2050 Strategy for Pacific, International Law for Maritime Boudaries and SLR impacts and Nuclear contamination assessment

2019

Table 1:

Land, EEZ, Demographic and Economic Statistics of the Blue Pacific

	Land Area (Km2)	EEZ Area (Km2)	Population (last census 2015 – except Australia in 2016 and New Zealand in 2018)	GDP per Capita (latest in USD)	GDP Growth Rate (latest)	Human Development Index 2019
American Samoa	200	390,000	55,519	11,245	2.2	
Australia	7,692,000	8,200,000	23,401,892	54,907	1.9	0.938
Commonwealth of Northern Mariana Islands	471	1,823,000	53,883	23,550	-19.6	
Cook Islands	237	1,830,000	14,802	24,913	5.3	
Federated States of Micronesia	701	2,978,000	102,843	3,830	0.2	0.614
Fiji Islands	18,376	1,290,000	884,887	6,152	1.1	0.724
French Polynesia	3,521	5,030,000	275,898	22,308	4.0	
Guam	541	218,000	159,358	34,153	-0.3	
Kiribati	811	3,550,000	110,136	1,636	2.2	0.623
Marshall Islands	181	2,131,000	53,158	4,337	3.6	0.698
Nauru	21	320,000	11,660	9,397	6.1	
New Caledonia	19,103	1,740,000	271,407	37,448	2.1	
New Zealand	268,021	4,000,000	4,699,755	42,084	2.2	0.921
Niue	259	390,000	1,591	18,757	2.3	
Palau	500	629,000	17,661	15,673	1.7	0.814
Papua New Guinea	462,840	3,120,000	7,275,324	2,845	5.6	0.543
Pitcairn	5	800,000	57	2,988	2.3	
Samoa	2,935	120,00	195,979	4,284	3.5	0.707
Solomon Islands	29,785	1,340,000	515,870	2,295	2.7	0.557
Tokelau	12	290,000	1,499	6,882	2.2	
Tonga	747	720,000	100,651	5,081	0.3	0.717
Tuvalu	26	900,000	10,566	4,223	9.8	
Vanuatu	12,190	680,000	272,459	3,260	2.9	0.597
Wallis and Futuna	255	300,000	11,558	12,848	2.2	
Total	**8,513,738**	**42,669,000**	**38,498,303**			

Figure 2:
The Blue Pacific

Source: Pacific Community (SPC)

Whether we make the ocean a link or a divider, an opportunity or an obstacle, a source of wealth or a daunting menace, will determine where we head. The Blue Pacific narrative encourages us to assert our shared ocean geography and resources for the security and good of our ocean and the prosperity of our people. Through liaising, listening, and learning from each other, and leading together[14] that we are able to maximize and assert our common Ocean identity. This is particularly relevant as we are grappling with geopolitical covetousness as well as a wide range of environmental and societal changes, in particular Climate Change recognized as our greatest threat to our people livelihoods, security and our region's identity and integrity[15].

[14]FPO Objective 3
[15]FPO objective 2

1.3 The Pacific Ocean Commissioner

The region's first Pacific Ocean Commissioner was appointed by Forum Leaders in 2011, fulfilling Action 2A of the 2010 Framework for a Pacific Oceanscape (FPO). In creating this position, Leaders ensured the Pacific region had a champion to provide the necessary high-level representation and commitment urgently required for dedicated advocacy and attention to Pacific Ocean priorities, decisions and processes at regional, and international levels.

The Commissioner works with Forum Leaders and other stakeholders across the world, with international organisations, the private sector, and civil society to strengthen ocean governance; improve understanding of the challenges and opportunities in the region; build support for the region's efforts to sustainably develop, manage and conserve the ocean; strengthen coordination and collaboration between ocean stakeholders, including fostering inter and intra-regional cooperation; and evaluate progress made against ocean related policies and decisions.

To do so, the Pacific Ocean Commissioner is supported by a small dedicated office, the Office of the **Pacific Ocean Commissioner**[16] the responsibilities of which include:

- Promoting ocean policy coordination and advocacy across the region, including for new emerging ocean issues in close coordination with other regional agencies and organisations including with CROP and the POA.
- Supporting the implementation of SDGs, in particular SDG14, as catalysts for change at regional, national and local levels.
- Developing a multi-stakeholder regional roadmap for building regional and national capacity, to ensure sustainable capacity development.
- Promoting and supporting involvement and engagement of PIF Countries in UN negotiations for a legally binding instrument to protect and sustainably use Biodiversity Beyond National Jurisdiction (BBNJ) negotiations.
- Securing maritime boundaries in international legal frameworks.
- Supporting Ocean financial assessment and readiness to improve resourcing and implementation, for the FPO and other relevant ocean policies and frameworks in close coordination with PIFS responsibilities to coordinate implementation of the Pacific Regional Roadmap for Sustainable Development.

[16]The OPOC is funded by Australia, New Zealand, French Polynesia, and Spain.

Dame Meg Taylor began her tenure as the Pacific Ocean Commissioner since August 2014, which saw the institutionalization of the dedicated staffing for the Office of the Pacific Ocean Commissioner (OPOC) within the Pacific Island Forum Secretariat.

1.4 Challenges in Compiling the Report

There were three main challenges in compiling this report.

The drafting of the report started in May 2020, during the COVID-19 locked-down Pacific. For the ocean community, all regional and ocean related meetings were postponed or cancelled, and face-to-face meetings could not be organized. This made it challenging for many to provide input to the rather lengthy questionnaire. Furthermore, national and regional teams were grappling with handling of the pandemic and related challenges, and understandably could not afford much time to this report preparations. Mindful of the unprecedented situation, the report writing team took upon themselves to lessen the burden on delegations and gather information themselves. As a result, the report may have overlooked some important new developments or not included important stakeholders. The post-first draft consultation was an attempt to rectify this challenge.

The second challenge was and still is the availability and/or up-to-datedness of the data and information for most of the region. This is particularly challenging in the monitoring and reviewing of the effectiveness of policies, legislation and measures put in place for the conservation, management and sustainable use of the ocean and its resources. It is important to note, however, that the issue of data and information availability is in many cases less of an issue for supporting partners and stakeholders.

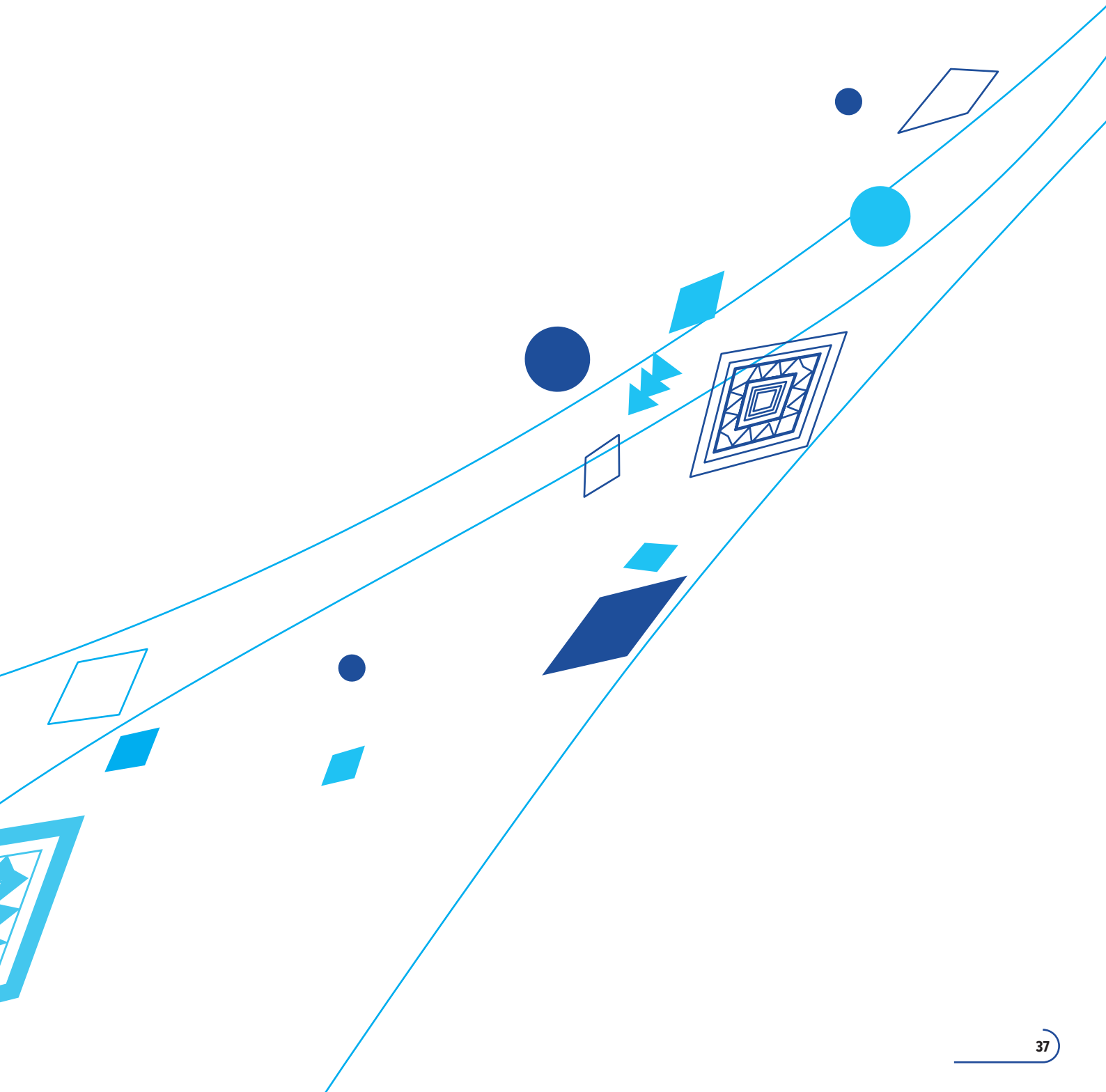
The third challenge was defining and marketing the Blue Pacific Continent. Despite a common narrative adopted by our Leaders and embraced by regional organizations, the reality on the waves is different and the technical stakeholders of the Blue Pacific Continent have yet to translate this call into their activities.

As already mentioned, CROP organisations vary in their memberships. Yet, even in organizations whose membership consist of all of the PIF Members, data and information remain segregated. For instance, data sets from regional organizations for the most part exclude Australia and New Zealand, and many exclude New Caledonia and French Polynesia. It is a fact that the Blue Pacific Continent is constituted by PIF Members with different political status, sizes, and economic development. Yet, the absence of this holistic consideration of our Blue Pacific Continent makes it difficult to fully embrace our regionalism.

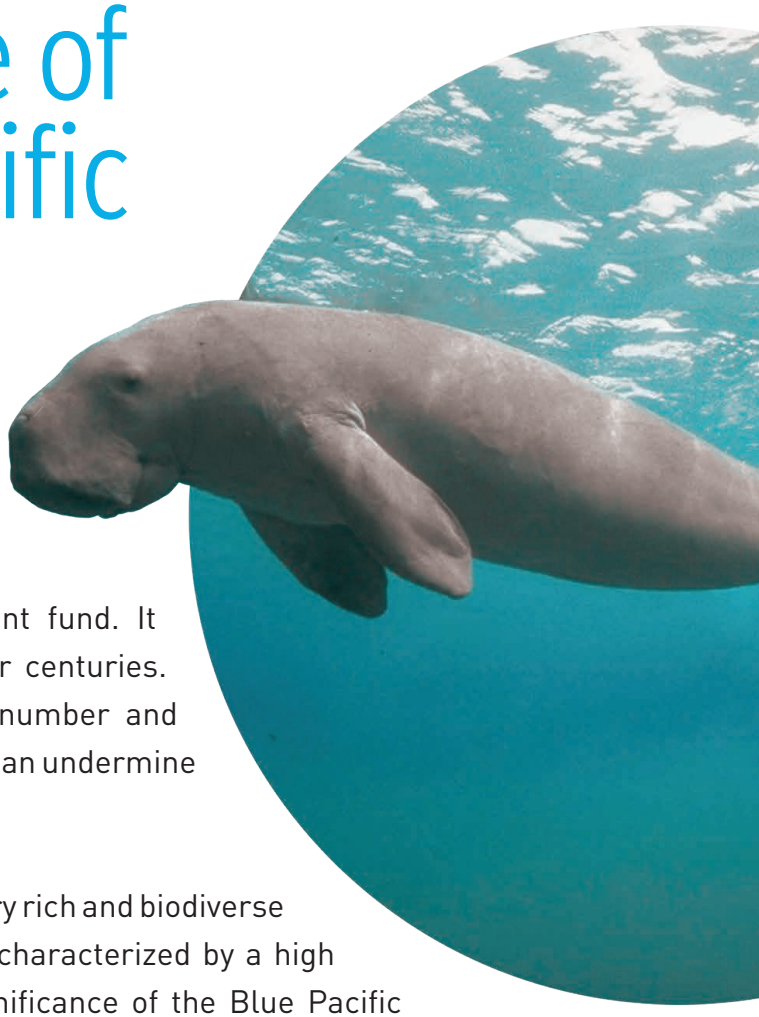
The UN 2030 Agenda for Sustainable Development adopted in 2015 was designed to be a universal agenda. All the sustainable development goals (SDGs) that form this global policy framework are to be implemented by everyone, developed and developing countries alike, in contrast to the millennium development goals which were only focused on developing countries. In our region, however, we have yet to make the switch to this collective frame, outside of our political declarations.

While it is understandable that CROP support members, who need and request support, adopting a whole of a Blue Pacific Ocean optic can further enhance our collective capacity to identify strengths to capitalize on, and gaps to fill. Comparing data and information collected from various sources and using different statistical, assessments, or reporting methods make any comparison at best approximate and at worst irrelevant.

As a final observation, despite the COVID-19 pandemic the world is fast evolving, bringing additional global stresses and changes that add to the many challenges in the Blue Pacific Continent. To adequately anticipate, prepare and respond to these societal, economic and environmental changes, it is critical to take a collective, inclusive, precautionary and pro-active approach based on the best available scientific information and relevant traditional knowledge of indigenous peoples and local communities of our region.



Part 2: State of the Blue Pacific Ocean



2.1 The Blue Pacific Ocean, its People and Ecosystems

The Ocean is our invaluable endowment fund. It has provided a wealth of resources over centuries. However, it is subjected to a growing number and intensity of pressures and threats, which can undermine livelihoods, identities, and security.

The Blue Pacific Continent is home to a very rich and biodiverse island, coastal and ocean environment, characterized by a high level of endemism[17]. The ecological significance of the Blue Pacific is internationally renowned: it is home to 12 UNESCO marine and coastal heritage sites, one of which is considered endangered[18], and two are among the largest World Heritage sites. There are 26 marine ecologically and biologically significant areas (EBSAs)[19]. The huge marine biodiversity is constituted of genetic material, which with their physical genes and the information they encode, form a genome. Like in the rest of the world, the ocean genome is the

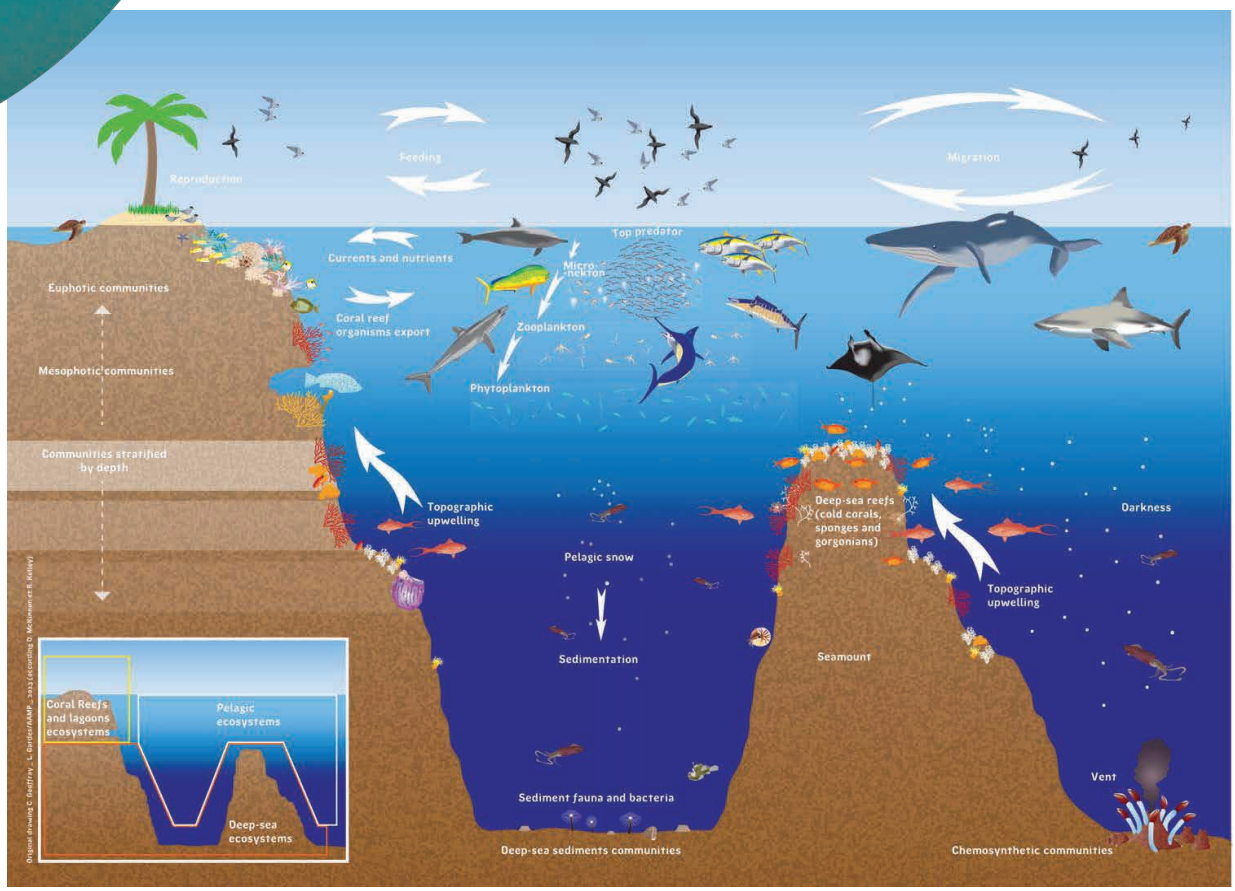
[17]SPREP (2016). State of Conservation in Oceania: regional report. Apia, Samoa, p.44.
[18]See https://whc.unesco.org/en/list/. These include Australia (Great Barrier Reef, Fraser Island, Lord Howe Island Group, Wet Tropics of Queensland, Ningaloo Coast, Shark Bay), Kiribati (Phoenix Islands Protected areas), New Zealand (Te Wahipounamu South West New Zealand, New Zealand Sub Antarctic Islands (although might be considered out of the scope of the Blue Pacific), New Caledonia (Lagoons), Palau (Rock Island), Solomon Islands (East Rennell; considered in danger).
[19]https://www.cbd.int/ebsa/ebsas
[20]Blasiak, R., R. Wynberg, K. Grorud-Colvert, S. Thambisetty, et al. 2020. The Ocean Genome: Conservation and the Fair, Equitable and Sustainable Use of Marine Genetic Resources. Washington, DC: World Resources Institute. Available online at https://www.oceanpanel.org/blue-papers/ocean-genome-conservation-and-fair-equitable-and-sustainable-use-marine-genetic

foundation of all ecosystems, including their functionality and resistance. Yet the myriad of compounded pressures from overexploitation, habitat loss and degradation, to pollution, climate change, or invasive species joepardise this important wealth[20].

Connectivity between island, coastal and ocean ecosystems underpins the physical, chemical and ecological processes. As everything on land, especially on an island is connected to the ocean, any activity that takes place on land can have an impact on the coast and the ocean. While this report has a focus on the ocean, impacts of land-based activities on the effectiveness of policies and measures aiming for the protection and sustainable management of the ocean and the sustainable use of its resources must not be overlooked or ignored.

Figure 3:

The diversity of connections between ecosystems



(Source: Coral Sea Natural Park Booklet, New Caledonia)

Photo Credit: Pacific Islands Forum Secretariat (PIFS)

Pacific people and societies have been constructed and nurtured through centuries of symbiotic relationships with the ocean and its creatures. Not so long ago, the natural world was revered by our ancestors. Each creature, each feature was an embodiment of a deity. This sanctification resulted in engraving in the collective psyche a sense of respect that made the development and implementation of management measures strictly abided by, through a tabu/tapu for instance. Past societies understood that the ocean was not just an open vacuum. It was and still is a provider of a wealth of services to human populations. And as such, needed to be revered, cared for, and respected.

Several types of ecosystems in the Blue Pacific Continent provide important ecological, cultural, economic, and livelihood services to communities and countries of the region. While ecosystems can exist without humans in them, humans cannot survive without ecosystems, making the consideration of ecosystem services paramount in any development policy for the Blue Pacific Continent[21].

Ecosystems play important services to human services and support many an important economic sector that our societies depend on. They operate complex systems where every single species has a function to play. Any change in that delicate balance can have dramatic consequences to the ecosystem as a whole. Because of their connectivity with other ecosystems, including on land, any threat to one ecosystem can have drastic repercussions on others. The Annex 1 summarizes the status quo of these different marine ecosystems including their services, threats and existing management regimes.

Ecosystem services accounting, however, is poorly developed in the region. Ocean ecosystems accounting could be characterized as a "specific application and extension of the existing standardized System of National Accounts used by most countries, the main objective of which is 'to provide a comprehensive conceptual and accounting framework that can be used to create a macroeconomic database suitable for analysing and evaluating the performance of an economy[22]." Ocean accounting considers outputs, incomes and welfare, as well as change in "wealth" to support present

[21]For more on ecosystem services, see chapter 1 of the Millennium Ecosystem Assessment as well as chapter 3 of the First World Ocean Assessment

[22]Fenichel, E.P., B. Milligan, I. Porras et al. 2020. National Accounting for the Ocean and Ocean Economy. Washington, DC: World Resources Institute. Available online at https://www.oecanpanel.org/blue-papers/national-accounting-ocean-ocean-economy.

and future decision making. This report is not an attempt at providing a methodology of a regional ocean account. Rather, it provides some elements for the consideration of Leaders on how ocean accounting can benefit national sustainable development planning as well as sustainable development of the Blue Pacific Continent.

Ecosystem services reflect the influence of natural processes on society's well-being and livelihood[23]. An ecosystem services approach illustrates this relationship best through assessing a monetary valuation of a service to human societies. For example, it has been estimated that the marine ecosystem services of Kiribati represented AUD400 million, or double its GDP[24], through direct and indirect economic services provided. For Melanesian countries, a study estimated that the total "ocean asset base" of the Melanesian region is currently valued at a minimum of USD548 billion, composed of primary assets (including marine fisheries, coral reefs, mangroves, seagrass) and adjacent or ancillary assets, including productive coastlines and carbon absorption[25]. The marine economy added NZD7 billion to the New Zealand economy in 2017 and employed more than 30,000 people. While these figures illustrate the significant contribution that ecosystem services can provide to a country's economy, they are likely to underestimate or overlook many indirect services.

Whilst it helps in giving estimates and guidance for decision-makers, not all services can be monetized. When they are, such monetary value is often subjective and depends on how certain aspects are viewed or valued compared to others[26]. Some attempts at valuation of ecosystem services for deep ocean ecosystems, for instance, have used terrestrial metrics which overlooked key functions not found on land or failed to recognize the rarity and smallness of these deep ocean ecosystems. The outcome is thus likely to be not be very accurate[27].

In addition to economic services, coastal and ocean ecosystems generate a wealth of other services including livelihoods (food), climate regulation, water cycle, cultural connection, leisure, and well-being[28].

[23]First integrated world ocean Assessment, part III chapter 3, p1 and 2
[24]Gassner, P., Westerveld, L., Abeta, R., Macmillan-Lawler, M., Davey, K., Baker, E., Clark, M., Kaitu'u, J., Wendt, H., Fernandes, L. (2019) Marine Atlas. Maximizing Benefits for Kiribati. MACBIO (GIZ/IUCN/SPREP): Suva, Fiji. 72 pp
[25]Hoegh-Guldberg, O. et al. 2016. Reviving Melanesia's Ocean Economy: The Case for Action – 2016. WWF International, Gland, Switzerland, 64 pp.
[26](First integrated world ocean Assessment, part III chapter 3)
[27]Haugan, P.M., L.A. Levin, D. Amon, M. Hemer, H. Lily and F.G Nielsen. 2019. What role of Ocean-Based Renewable Energy and Deep Seabed Minerals in a Sustainable Future? Washington, DC: World Resources Institute. www.oceanpanel.org/blue-papers/ocean-energy-and-mineral-sources (p.33)
[28]See subsection on spotlight on economic sectors for direct economic services provided to the Blue Pacific

Food: Pacific people consume about 3 to 5 times more fish than the global average. Most of it is generated from coastal fisheries, the lifeline of food security for many people in the region. Coastal fisheries are critical for the regional fight against malnutrition and non-communicable diseases and is estimated to represent about 49% of all fisheries contribution to GDP in the region[29]. However, with growing populations and dwindling coastal resources that are subject to increasing pressure, Pacific Leaders have turned to offshore fisheries as an alternate provider for food security. Catches of tunas in the West and Central Pacific Fisheries Commission area (WCPFC) are estimated to account for nearly 58% of world supply. Yet 90% of these catches are exported outside the region. Leaders have pledged to increase regional tuna consumption to 40,000 tons by 2024[30]. Countries with domestic fleets have seen their tuna and other offshore species consumption increase. (See subsection on Fisheries for more on the fisheries sector).

Climate Regulation: The world's oceans produce about half of the world's oxygen and absorbs over 90% of excess heat accumulated in the climate system. The ocean is also a significant carbon sink absorbing a third of global carbon emissions. The value of this in the Blue Pacific Continent provided by coastal and ocean ecosystems is estimated at USD60-400 billion per year[31]. Some species have also been studied as important carbon sinks (see marine mammals subsection). The growing concentration of CO2 (carbon dioxide) in the atmosphere, due to continued high levels of emissions, puts this valuable service at risk. Already, the ocean is on a path of acidification, which could result in a chained collapse of many critical ecosystems (see also subsection on climate change).

Water Cycle: About 85 per cent of surface evaporation and 77 per cent of surface rainfall occur over the ocean. Consequently, the ocean dominates the global hydrological cycle[32]. Water leaving the ocean by evaporation condenses in the atmosphere and falls as precipitation, completing the cycle. Freshwater for drinking is only a small part of the water cycle almost all of which is captured as surface run off or groundwater.

[29]SPC (2015): A New Song for Coastal Fisheries – Pathway to Change: The Noumea Strategy. The Noumea Strategy: document prepared at the end of the regional workshop on the future of coastal fisheries management held from March 3 to 6, 2015 in Nouméa. Adopted by the 9th Conference of SPC Fisheries Directors in Noumea in March 2015. The caveat of these data is that it is focused on Pacific islands and do not include Australia or New Zealand.
[30]FFA, SPC (2015). Future of Fisheries: A Regional Roadmap for Sustainable Pacific Fisheries: Objective 4
[31]SPREP, UNEP (2017). Ocean Acidification Brief. UNOC 1. ocean-acidification-pacific.pdf (sprep.org)
[32]WOA I, chapt 4, p.1

Connector (Transport and Communications): The ocean is a connector, for species as well as for human societies. The Blue Pacific Continent was settled millennia ago by seafarers who traversed the open ocean. Over the centuries, they developed and mastered a complex set of knowledge of the natural environment and astronomy to guide their voyages across the ocean for inter-island trade. Today, these traditional navigation techniques have been replaced by shipping vessels, and connectivity between countries and across the region has been enhanced by a wide network of submarine cables for communication (refer to subsection on Submarine Cables and Satellites).

Leisure: A healthy ocean, in particular a healthy coast, is a significant economic asset. The tourism industry relies heavily on this value as it is a main driver for visitors. Tourism in the region is a substantial provider of income and employment opportunities. Recreation services provided by the ocean have spurred global lucrative industries such as diving, water sports, including surfing (see subsection on Tourism).

Surfing, for example recognized to have originated in Tahiti, was popularized by Americans in Hawaii. Since the mid-twentieth century, this sport and culture has expanded and now represents an industry valued at billions USD with over 30 million surfers worldwide. The Blue Pacific Continent is a hot spot for surfing with important surf destinations including the beaches and reefs of many countries such as the wave of Teahupo'o in the southwest of Tahiti considered one of the most challenging but dangerous waves in the world. Teahupo'ö will welcome the 2024 Olympic surfing event as the Games will be hosted by Paris. This is the first time an Olympic event will be hosted by a PIF Member.

Well-being and Health: In addition to providing food services which can help in offering proper nutrition for people, coastal and ocean ecosystems are home to a myriad of genes that may unlock lifesaving drugs against cancer, pandemics, or other future diseases[33]. Traditional medicine already relies to some extent on coastal and ocean environments or species for healing wounds and other ailments. However, and despite the multiplication of "happy-island-children-

[33]See for instance Leary, D, M Vierros, G Hamon, S Arico and C Monagle, 'Marine Genetic Resources: A Review of Scientific and Commercial Interest' (2009) 33(2) Marine Policy 183;

splashing-around-in-the-water" pictures in regional reports, there has been too little attention to the link between the ocean environment and well-being, in particular mental well-being. Some consideration has nonetheless been given to the impact of climate change induced extreme weather events on affected populations[34]. Studies have linked environmental degradation with increase in gender-based violence, demonstrating in particular that threats and pressures on the environment and its resources can amplify gender inequality and power imbalances in communities and households coping with resource scarcity and societal stress[35].

There is a growing body of evidence suggesting the positive correlation between healthy environment, including coastal and ocean environments, and the well-being of people and their productivity[36]. The WHO has estimated that over 100 million people in the Western Pacific (Asia and Pacific) are suffering from mental health problems[37]. A holistic consideration of causes and remedies for mental illnesses taking into account the ocean environment warrants some attention.

2.2 Iconic Species

The Pacific Ocean is home to some of the most majestic and iconic species in the world that play a strong cultural role across societies in the region. Traditionally, they were considered as emanations of deities or messengers of gods, and many are still revered as guardians or totems for families and clans.

In addition to playing important cultural and ecological roles, these species also provide substantial economic services through eco-tourism related activities, such as diving or whale watching.

[34]WHO:https://www.who.int/westernpacific/activities/protecting-the-islanders-from-climate-change-and-environmental-hazards
[35]Castañeda Camey, I., Sabater, L., Owren, C. and Boyer, A.E. (2020). Gender-based violence and environment linkages: The violence of inequality. Wen, J. (ed.). Gland, Switzerland: IUCN. 272pp
[36]See for instance Bratman, G.N et al. Nature and mental health: An ecosystem service perspective. Science Advances. 24 Jul 2019: Vol 5, no7, available at: https://advances.sciencemag.org/content/5/7/eaax0903.full
[37]https://www.who.int/westernpacific/health-topics/mental-health/5?platform=hootsuite

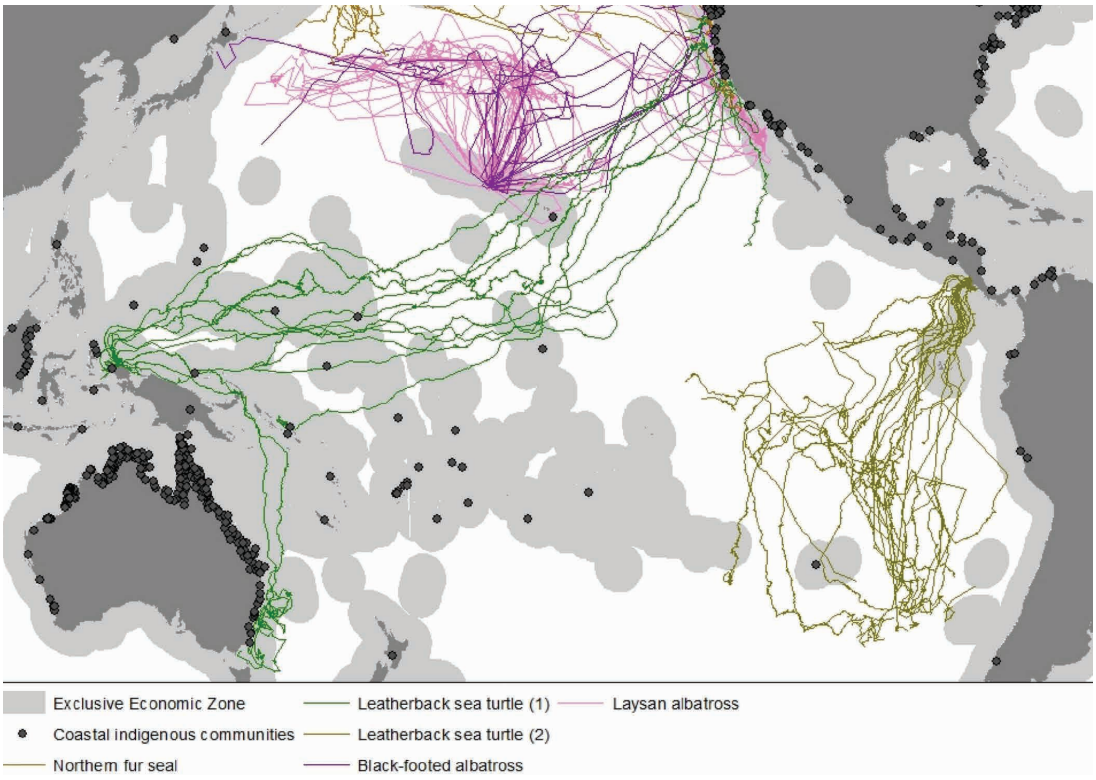
These species are for the most part on top of the food chain. Most are in pre-occupying conservation status, ranging from vulnerable to threatened. Their management and conservation have mostly been championed from an environmental lens, rather than from an economic lens such as in the case of tuna species management.

While iconic species in their own rights, tuna species and bêche-de-mer are not included in this section as they are discussed in the fisheries section. Indeed, their importance for the region is mostly economic.

A summary of a few of these species follows. Many are highly migratory, spanning across many EEZs and High Seas of the Pacific Ocean. Many species are the subject of national and/or regional policy instruments. Their collective importance, their conservation status, as well as their migratory nature make them great candidates for increased regional approach to their conservation and protection.

Figure 4:

Selected migration paths of culturally important species across the Pacific Ocean.



(Source: Vierro et al.)

Marine Mammals[38]

It is thought that 58 species of cetaceans (whales, dolphins, porpoises) exist in the Pacific Ocean. They include many whale species (such as the sperm whale, blue whale, humpback whale), dolphins as well as dugongs. They are widely regarded as flagship species for Pacific Ocean ecosystems.

Commercial whaling reduced the breeding populations of several species, in particular humpback and sperm whales, to very low levels. The capture of dolphins has caused significant decline. While population levels of some species are increasing, the status and trends of most cetacean populations are poorly known. All cetaceans are listed on either Appendix I or Appendix II of CITES and CMS.

[38]https://www.wcpfc.int/system/files/Marine_mammals_turtles_PacificIs_IFAW_SPREP.pdf

The dugong is native to five countries in the region: Papua New Guinea, Solomon Islands, Vanuatu, New Caledonia and an isolated population in Palau. The dugong is currently listed as Vulnerable on the IUCN Red List and is included on Appendix I of CMS and CITES. The status of dugong populations is unknown in all countries except Palau and Papua New Guinea, where they are likely to be declining (IUCN Red List 2013)[39].

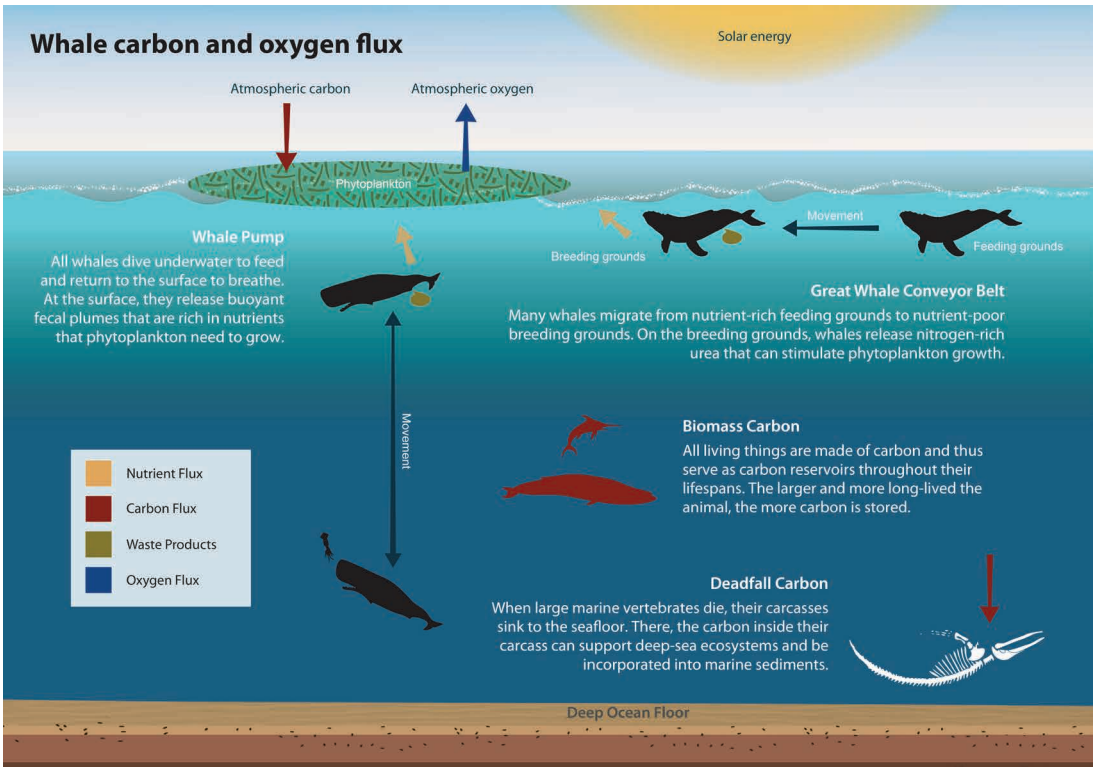
Marine mammals provide revenues to countries through tourism-related activities, in particular whale watching activities. A study estimated, for instance, that an individual humpback whale generates USD1 million in Tonga over its lifetime[40].

Whales are also a valuable global common good and gift. Whales accumulate carbon in their bodies during their long lives. When they die, they sink to the bottom of the ocean; each great whale sequesters 33 tons of CO2 on average, taking that carbon out of the atmosphere for centuries. A tree, meanwhile, absorbs only up to 48 pounds of CO2 a year. Globally, if whales were allowed to return to their pre-whaling number of 4 to 5 million—from slightly more than 1.3 million today—it could add significantly to the amount of phytoplankton in the oceans and to the carbon they capture each year. At a minimum, even a 1 percent increase in phytoplankton productivity thanks to whale activity would capture hundreds of millions of tons of additional CO2 a year, equivalent to the sudden appearance of 2 billion mature trees. Considering the average lifespan of a whale is 60 years, the potential is quite significant. A study estimated the value of the average great whale at more than USD2 million, and easily over USD1 trillion for the current stock of great whales[41].

Current threats to these species include marine transport (ship strikes, underwater noise pollution, and disturbance), fishing (as bycatch, although fishing methods have improved and management measures aiming to mitigate industrial fishery impacts have been put in place), pollution, (including marine debris and ghost gear), habitat destruction, and climate change. Decline in seagrass cover can negatively affect dugong populations, but illegal hunting and poaching is the main cause. Conservation measures have been instituted to protect these emblematic sirenas[42].

[39](SPREP, 2016. p48)
[40]New Zealand Department of Conservation (2007). Whales in the South Pacific. https://www.doc.govt.nz/documents/conservation/native-animals/marine-mammals/whales-in-the-south-pacific.pdf
[41]Chami, R. et al. Nature's solution to climate change: A strategy to protect whales can limit greenhouse gases and global warming. Finance and Development. Dec 2019. IMF
[42]Palau SOE 2019 p.49

Figure 5:
Whale carbon and oxygen flux



(Source: Chami, R. et al).

Ten Pacific Islands Forum Members have established sanctuaries for marine mammals[43], or have adopted strong conservation measures. In addition, the SPREP Regional Dugong Action Plan and Whales and Dolphin Action Plan (2013-2017), endorsed by all SPREP members, is being reviewed for endorsement in 2021. Effective protection of these species requires a regional approach.

Enforcement of conservation measures are quite mixed in the region and there is much room for improvement. Greater involvement of stakeholders, including local communities and the private sector, through awareness campaigns on the status of these species, their ecological, economic and cultural importance, and in the design and implementation of conservation and protection measures, is also necessary to improve the effectiveness of measures taken.

[43]Australia, New Zealand, New Caledonia, Vanuatu, Fiji, Tonga, Samoa, Niue, Cook Islands, French Polynesia. Also, waters of American Samoa, Javis Island and Baker Island are also sanctuaries. Papua New Guinea has announced the establishment if a whale sanctuary, although it has not yet been formally declared.

Turtles

Six of the seven marine turtle species (leatherback, hawksbill, green, loggerhead, olive ridley and flatback) occur in the region. All are in dire conservation status in IUCN's threatened species categories, Critically Endangered, Endangered or Vulnerable, and on the CMS Appendices and on CITES Appendix I. The green and hawksbill turtles are the most widely distributed whilst the flatback turtle is only found in Australia and southern Papua New Guinea (IUCN Red List 2013)[44]. Overall, global populations of sea turtles are considered to have declined. Two distinct genetic stocks of green turtles (Chelonia mydas) occur within the Great Barrier Reef Marine Park and experience different pressures and demonstrate differing population trajectories. The southern stock has demonstrated a consistent increase in population size, whereas the northern stock may be in the early stage of decline[45]. The loggerhead turtle (*Caretta caretta*) population is increasing after substantial decline, whereas the hawksbill turtle (*Eretmochelys imbricata*) population has declined. The flatback turtle (*Natator depressus*) population has remained stable[46]. Little is known of the current population status of leatherback turtles (*Dermochelys coriacea*), which are known to nest in Papua New Guinea, the Solomon Islands and Vanuatu, but regionally they are considered to be in decline[47].

Some countries have established turtle sanctuaries, for example American Samoa, Samoa, New Caledonia, and French Polynesia. Others have implemented legislation and regulations, including to align to WCPFC CMMs as well as guided by the SPREP Regional Marine Turtles Action Plan (2013-2017) which is being reviewed for endorsement in 2021. In tourist areas, guidance for tourism development is sometimes provided to limit impacts on nesting beaches. A number of countries, including through collaboration with SPREP, have entered into partnership to ensure a multi-country approach to improve their conservation efforts in light of the highly migratory nature of sea turtles.

[44]SPREP, 2016. p48
[45]GBRMPA, 2014
[46]GBRMPA, 2014
[47]Chapter 36D World Ocean Assessment

As megafauna, turtles play important ecological roles in balancing ecosystems, such as regulating the spread of sponges and seaweed. They also have significant cultural importance. In the Solomon Islands, for instance, turtle meat and eggs are used as a delicacy during special occasions, while the shells and oil are used for cultural and traditional purposes[48]. Their presence in pristine waters as well as on beaches during the hatching of eggs is a delight for awe-seeking tourists.

Many threats are facing turtle populations. These include poaching (considered as a fight between modernity and traditional customs), climate change, pollution, shipping, coastal and tourism development in particular on nesting beaches. Terrestrial invasive species, such as rats, are also impacting turtle populations by attacking nests. Offshore fishing is another significant threat. Due to significant bycatch[49], the WCPFC has established conservation and management measures to limit further fishing impacts. These have helped improve their conservation status.

Enforcement of conservation measures are mixed throughout the Pacific region and there is strong room for improvement.

Sharks and Rays

The region is home to a number of species of sharks and rays listed on the CMS Appendices (whale shark, great white shark, shortfin and longfin mako, porbeagle and spiny dogfish) and CITES Appendix II (manta rays, whale shark, oceanic white-tip shark and three species of hammerheads). Many of these species are migratory pelagic sharks. Information on population sizes of sharks is difficult to ascertain. Existing models (such as FAO and SPC datasets) indicate overall significant decline in abundance and over a third of all sharks and rays are threatened with extinction[50]. Manta rays are recorded in nearshore, reef and oceanic waters, yet information on population size and trends is largely unknown[51].

[48]Solomon Islands SOE, p. 65, 2019
[49]Solomon Islands SOE 2019, fig 3.8 p64.
[50]SPREP, 2016 p39
[51]SPREP, 2016 p.48

Sharks face many threats. The most important is from fishing activities: either directly for their fins (and more recently their meat) or as bycatch. Pollution and climate change have added additional pressure on these already vulnerable populations. To curve fishing impacts, the WCPFC has adopted several conservation and management measures on sharks.

In addition, guidelines from the FAO, regional action plans have been put in place to guide domestic legislation and action plans. Some countries have established management plans along the lines of these guidelines and decisions. For instance, Tuvalu's Shark Management Plan includes a complete prohibition on commercial fishing for sharks, shark finning and export of any shark products, which is enforced through license terms and conditions.

Conserving healthy populations of sharks is critical. At the top of the food chain, sharks contribute to the regulation of the ecosystems they are part of. They contribute, as such, to the health and resilience of these ecosystems. Furthermore, they are part of cultural celebrations all across the Pacific acting as guardians or as messengers. In some societies, sharks have also been associated with deities. This is Pacific ancestors feared and respected them.

Nowadays, sharks also play a significant economic role. They are indeed the main act of many a diving experience across our region contributing to attracting thousands of tourists a year and generating significant revenues. Globally, about 600,000 people spend over USD300 million annually to watch sharks, supporting 10,000 jobs worldwide. In Palau, the lifetime value of a live shark was estimated to amount to USD1.9 million for dive tourism[52]. In Australia, annual expenditure on shark-watching was evaluated at USD 28.5 million a year[53]. In Fiji, it was estimated that shark-diving contributed to USD42.2 million in 2011, through revenues generated by the industry combined with the taxes paid by shark-divers to the government[54].

[52]Vianna GMS, Meekan MG, Pannell D, Marsh S, Meeuwig J (2010) Wanted Dead or Alive? The relative value of reef sharks as a fishery and an ecotourism asset in Palau. Australian Institute of Marine Science and University of Western Australia, Perth.
[53]WOA II, p. 465
[54]Viana, Gabriel. (2011). The socio-economic value of the shark-diving industry in Fiji.

Some countries have taken strong shark conservation measures by establishing sanctuaries in their national waters. There are 8 such sanctuaries in the region: Cook Islands, Federated States of Micronesia, French Polynesia, Kiribati, Marshall Islands, New Caledonia, Palau, and Samoa. Together, they cover more than 17.1 million square kilometres. There, commercial shark fishing is banned, and so are retention of shark bycatch, sale and trade of sharks and shark products. The Micronesia Regional Shark Sanctuary spans 6.5 million square kilometres and was completed in 2015.

In French Polynesia, an independent and civil society led observatory was established a decade ago. The objective of the Polynesian Shark Observatory is to compile and collect all the information available on the different species of sharks and rays present in Polynesia, in order to estimate their stock, map their distribution and follow the evolution of these different island populations over the long term[55].

In parallel with this work, the Observatory will offer a more pragmatic field function, to meet the expectations of the various current strategies implemented within the framework of sustainable development.

Seabirds

Seabirds while not being considered "life under water", cannot be disassociated with the ocean. Seabirds have occupied a significant place across the cultures of the Pacific. They were at times messengers of the Gods, guides to our navigating ancestors signaling islands in the vastness of the ocean, and precious help to fishermen in locating fish in the open ocean.

It must be remembered that mining for guano on islands in the region and subsequently phosphate mining on Ocean Island (Banaba, Kiribati), and Nauru, and Makatea in French Polynesia were amongst the earliest examples of export of resources from the Blue Pacific Continent over 100 years ago. Phosphate is resource entirely dependent on seabirds feeding from the ocean and roosting on land. It has been used extensively as a fertilizer for the development of agricultural industry in Australia and New Zealand.

Seabirds are critical for coastal ecology as important drivers of nutrient cycling, transferring nutrients from their pelagic feeding grounds to islands where they dwell. This input of nutrient-rich guano increases plant biomass, enhances the abundance of many types of land biota, and may bolster plankton densities and influence feeding behaviour of manta rays. While the effects of seabird-transported nutrients on the productivity, structure, and function of highly diverse coral reefs are unknown, significant difference between rat-infested islands' coral reefs and rat-free islands' coral reefs in the Galapagos seems to hint at a possible positive correlation[56]. Regardless, it is manifest that seabirds play an important ecological role.

Seabirds throughout the region demonstrate varying trends; most species that forage in offshore regions are considered to be decreasing. Globally 28% of seabird species are threatened (5% are in the highest category of IUCN Critically Endangered) and a further 10% are Near Threatened. Pelagic species are disproportionately represented in comparison with coastal species; those listed under the Agreement on the Conservation of Albatross and Petrels have fared worst of all. Threats to seabird populations come from both land and sea. At sea, these include incidental bycatch (in longline, gillnet and trawl fisheries); pollution (oil spills, marine debris)); overfishing; energy production and mining. On land: invasive alien species, including rats, cats and other bird species, problematic native species (including those that have become super-abundant), human disturbance, infrastructural, commercial, and residential development, hunting and trapping. Climate change and severe weather affect seabirds on land and at sea[57].

Improving the conservation of seabirds is required to target these causes. The WCPFC, for instance, has adopted a CMM (CMM 2018-03) to curb the impact of fishing on birds. In some islands also, efforts to curb invasive alien species, in particular rats, have been conducted. However, such efforts seem to equate to little compared with the magnitude of the threats. SPREP is in the process of designing a Seabirds Action Plan to be presented to SPREP member countries for endorsement in 2021.

These regional efforts complement national efforts and national plans of action, such as the New Zealand Plan of Action for Seabirds. These efforts must be conducted collectively and in a cooperative and coordinated manner so as to increase effectiveness and pool resources.

Eels[58]

Freshwater eels are hardly referred to in conservation documents across the region and their status as iconic species may be questioned. Indeed, eels in many parts of the region are seen with a bit of repel as they dwell part of their lives in muddy rivers. However, for many others, eels play an important cultural role, as highlighted by the legend of Sina/Hina, the eel, and the coconut tree, a legend shared by many Polynesian islands. Eels also play an important ecological role in the rivers they dwell in as a top of the chain predator. In some islands, they also help maintain healthy taro patches.

As catadromous fish, eels spend their adult lives in freshwater and migrate to the ocean to spawn, crossing many different jurisdictions. The location of these eels' nurseries is a mystery, which makes their conservation particularly challenging and large gaps in the scientific understanding of eels remain[59]. There have been no systematic studies of eels in the region to establish their place of breeding, migration patterns, levels of recruitment, growth rates, population abundance and age of reproductive maturity. As a result, little is known about their status, which makes the definition of safe catch levels difficult to implement. While the region seems to be the only world's major eel region not yet faced with heavy commercial pressure, there have been increasing number of enquiries from commodity traders, mainly from East Asian countries. Eels are not yet under any management plan[60], nor are they legally considered endangered. Nonetheless, their global conservation status is concerning, including in the region.

Under UNCLOS, as catadromous species, the coastal state where the species spend the greater part of their life cycle has the responsibility for their management (article 67) or by all states that the species cross. However, because of lack of knowledge on their nursery as well as their very migratory nature, the coastal states will face difficulties in the effective management

[58]Conservation and utilisation of South Pacific freshwater eels. Policy Brief 29 (2017) Pacific Community SPC, Noumea, New Caledonia. And Workshop on South Pacific freshwater eels, Suva, Fiji, 13-15 August 2016: Current knowledge and future research. Pacific Community SPC, Noumea, New Caledonia

[59]This gap in understanding is also the case in local knowledge as it is often thought that eels stay in their rivers during their entire life cycles

[60]There are countries where management plans are put in place, but on a more localized basis. For instance, Sovi Basin is a protected forest sponsored by the Fiji Water Foundation, and is considered a 'hot spot' for eels, flagtail fish (Kuhlia spp.) and other indigenous fish

and protection of these species' populations. Loss of connectivity between habitats used by eels during their life history can significantly impact their recruitments on land and at sea. Improving the knowledge and understanding of migratory patterns of eels will help design more integrated and connected management measures.

Eels, through their catadromous nature, are perfect candidate for the poster pet of connectivity and adjacency, which are two of the priorities that Pacific island delegations have promoted in the BBNJ negotiations. They give the coastal states stakes in their conservation and protection and due regard to what is done in their migration paths.

Other species

Some other species include **gastropods**, 40% of which species that are assessed are threatened or extinct.

Reptiles are another threatened group, with over 30% of species in categories IUCN Critically Endangered, Endangered, Vulnerable and in CMS and CITES.

Few data on the population abundances of **sea snake** species are available, despite substantial numbers being caught in fishing operations. Data collected indicate population decline[61]. Key knowledge gaps for establishing baselines and progressing management of sea snake populations comprise those associated with defining geographic distributions, including their movements, dispersal and connectivity; identifying key habitats, particularly those in coastal regions; and quantifying resilience to environmental disturbances such as marine heat waves and coral bleaching, and the responses to threatening processes such as bycatch and climate change. To these elements, it is also relevant to consider emerging threats such as pollutants that might be influencing population health. Indeed, there have been number of reports of deceased turtleheaded sea snakes (*Emydocephalus annulatus*) within protected lagoons in New Caledonia, with no obvious cause of death but questioning possible prevalence of and susceptibility to disease and potential interaction with climate change[62].

[61] 36D, World Ocean Assessment
[62] Draft WOAII, p.152

Saltwater crocodile populations in Australia and Papua New Guinea have improved thanks to conservation and management measures put in place after periods of commercial harvesting. These efforts have resulted in increases in populations to pre-exploitation levels. Their most easterly range is Solomon Islands and Maewo in Vanuatu.

Take Home Message:

Our region is endowed with so many beautiful and unique species that this report is unable to fully capture.

Each species has a role in the complex ecosystem where they dwell. The removal of or stress upon one or several species can have dramatic impacts on entire ecosystems, which in turn impacts on humans.

2.3 Cumulated Impacts of Drivers, Global and Local Pressures

Our coastal and marine ecosystems, and the species that live there, face many pressures. These pressures result from aggressive coastal, urban, agricultural, industrial, tourism developments; pollution of all kinds and from all sources; overharvesting; damaging methods of harvesting and exploitation; increased shipping traffic; invasive species; climate change and ocean acidification; disasters. These threats, alone and cumulated, not only threaten the health and productivity of these ecosystems, they also undermine their resilience to the growing impacts of climate change. All these compounded impacts contribute to the acceleration of these ecosystems' decline, impacting the people by hampering their ability to provide their valuable ecosystem services.

Some of these threats are global. Others are local. Many are our collective responsibility and fault. Addressing these pressures require robust action at all levels in a coordinated manner. Facing these pressures, the main two threats are not taking into account that their cumulated impacts exacerbate pressures on the ocean, and delaying action.

Drivers

Several drivers can exacerbate ocean degradation by accelerating or contributing to pressures. The main ones include the following in Table 2 below[63]:

[63]From POA technical paper on SROCC with amendments

Table 2:
Key Drivers of Change for Ocean

Driver	Explanation
Economy/ mode of development	• Transition across sectors influence degradation of nature. • Concentration of output and funds influences what is produced and who benefits. • Expanding trade affects degradation elsewhere. • Poor economic prospects can lead to brain drain exacerbating capacity constraints. • A sustainable blue economy approach that takes into account the three dimensions of sustainable development can diminish pressures and threats.
Demography	• Increase in population leads to increase on the demand of resources, leading to potentially over-extraction if deficient management. • Increase in land-use with negative impacts if not well managed. • Despite constant migration movements outward in the islands, the region has grown and will continue to grow. Even in emitters countries, the high fecundity rates observed have led to significant increase in populations.
Technology	• Both positive and negative: switch from biomass to other energy sources have large impacts. • Technology, in particular efficient, clean and adapted to the needs and contexts can lessen degradation of the environment. • Any technology, however promising, must be adapted to the context and not constitute an undue burden on the receiving state.
Values[64]	• Narrower orientation toward economic development at the expense of well-being and links to nature. • Shift to modern, market-based lifestyle that holds up material gain over more traditional values of communities[65]. • Shift to import-based highly processed diet at the expanse of traditional diets, contribute to NCDs and pollution. • Literacy and valorizing traditional knowledge can help in re-framing values.

[64]IPBES. The different values people hold concerning the ocean and its resources, and their contributions to people, their relationship with the marine environment vary. They have an impact on how one treats to the natural environment and can explain why some societies and communities are successful in managing their environment, and why others do not. Indigenous Peoples and Local Communities in varied rural settings, for example relate to nature with deep respect not only due to their conceptualizations of key relational values but also because their livelihoods depend upon the food and other materials that nature provides.

[65]Solomon Islands SOE, 2019, p.22, 29-31: In the Solomon Islands for example, House/Council of Chiefs are deteriorating though there are some efforts to revive the structures and their functions. Many traditional tabu sites have been destroyed by logging and mining. Loss of cultural records and the decline in traditional knowledge erode the traditional bases of Solomon Islands culture, contributing to a loss of social cohesion and community well-being. This is observed far and wide across our region.

Governance	• Governance systems are too fragmented across administrative boundaries and sectors. • Coordination within and among governments reduce some types of degradation. • Current governance structures not well-match to the spatial and temporal scales of climate change impacts on ocean and consequences for ecosystems and human societies. • Economic policies can be adjusted to lower degradation on nature (as well as subsidies); public conservation policies such as marine protected areas and payments for ecosystem services can reduce degradation (if pressure confronted and local actors engaged).
Geopolitics	• Recent geopolitical and geostrategic shifts have re-situated the Pacific as "maritime theatre" and "sea power" in great power rivalry.-This geostrategic competition has a strong focus on maritime security agenda, which is frequently couched in terms of enhancing the capacity of Pacific Island states to monitor and police illegal activities within their EEZs and adjacent high seas, including illegal, unreported and unregulated fishing, and, increasingly, transnational crime. • Three main geopolitical dimensions to the oceanic resources and territory of the Blue Pacific: ◦ Ability to access, and in some instances control, large swathes of the Pacific Ocean. ◦ Asymmetrical power relations in the negotiation of access and use agreements. ◦ Strategically important resources (Fish, DSM). • PIF Countries have much leverage to gain from this competition, including thanks to the United Nation's "one country = one vote". The Countries can achieve successes when they decide to act together, as exemplified by Climate Security[66], Ocean Package at Rio+20[67], and SDG 14.

UNCLOS, Maritime Boundaries and the Legal Implications of Sea-level Rise:

Leaders committed to a collective effort, including to develop international law, with the aim of ensuring that once a Forum Member's maritime zones are delineated in accordance with the 1982 *UN Convention on the Law of the Sea*, that the Member's maritime zones could not be challenged or reduced as a result of sea-level rise and climate change.

This commitment ensures that the ongoing exercise of jurisdiction and the enjoyment of sovereign rights by Forum Members in these maritime zones and extended continental shelves could not be open to challenge, nor undermined

[66]UNGA RES/63/281 on security implications of climate change
[67]UNGA Res 66/288 – The Future We Want; para 158-177

by the impacts of sea-level rise and climate change. [Paragraph 26, 2019 Forum Leaders' Communique]. This call was also echoed by Pacific Island Parliaments [Para 16b, 2019 Taraho'i Declaration].

Forum Members have been proactive in their individual and collective efforts to conclude the work on the delimitation of maritime boundaries and the delineation of maritime zones in accordance with their rights as coastal States under the relevant provisions of UNCLOS.

There are 48 shared or overlapping boundaries between countries in the region. As of July 2020, 35 of these boundaries have been formalized. There are 13 outstanding bilateral and 5 High Seas boundaries remaining to be declared. Out of the 17 existing extended continental shelf submissions to the UN Commission on the Limits of the Continental Shelf, one was recommended in 2019.

In addition, and through their permanent missions to the UN, Forum Members have led the UNGA request for the International Law Commission (ILC) to include the topic of sea-level rise in relation to international law in its programme of work, and in particular its current programme of work. In December 2019, Forum Members, with the contribution of relevant CROP organisations and OPOC, submitted a regional submission in response to the ILC call for submissions on the topic. This submission informed the first issues paper, which examines the implications of sea level rise on maritime boundaries and other issues related to the law of the sea, recently published by the ILC. The ILC First Issues paper[68] provided a lot of interesting elements on this space worth noting.

Collective efforts and discussions are continuing to progress legal and institutional options for advancing the Leaders' commitment. A regional conference was held in early September 2020 to explore the issue further. Several options available for PIF members were identified. Forum Foreign Ministers endorsed the establishment of a Forum Officials Committee (FOC) Specialist Sub-Committee on Sea-level rise in relation to International Law to further explore and identify the most appropriate path to deliver on the Leaders' commitment to a collective effort to secure the Blue Pacific Continent against sea-level rise and climate change.

[68]Aurescu, Bogdan et Nilüfer Oral, 2020

Climate Change and Ocean Acidification

The cumulative impacts of climate change pose the greatest threat to the Pacific Ocean, as reaffirmed by Forum Leaders time and time again[69]. Over the course of two years, four major international reports[70] reaffirmed what we already knew: human-induced global changes, in particular climate change, are affecting our Planet, its ecosystems, and the people depending on them. Furthermore, a major surge in carbon emissions as permafrost melts and releases trapped methane may further counter global mitigation efforts.

Ocean acidification, which is another result of increased CO2 concentration in the atmosphere, is a direct threat to ecosystems and species with calcified structures and foundations, in particular coral reefs. Over the last 200 years, the ocean's average surface pH has decreased by 0.11, representing a 28% increase in acidification since the start of the industrial revolution. Projections for the end of this century indicate that the ocean's surface waters could be 150 times more acidified than before the industrial revolution. This would result in an ocean that is more acidified than at any time over the last 20 million years. It would also mean that the pH will change 100 times faster than at any time in the past.

The region is all well too aware of what science is telling us. We live it. We have sounded the alarm bell. We know what is coming if business as usual is maintained.

Observed and projected impacts of climate change include the following as captured in Table 3 below. The implications for the ocean include intense impacts and ecosystem losses, decrease in marine animal biomass and production.

[69]See Leaders' communiqués: https://www.forumsec.org/category/communiques/; and declarations: https://www.forumsec.org/category/declarations/

[70]From the Intergovernmental Panel on Climate Change (IPCC): "Global Warming of 1.5°C. An IPCC special report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty" (SR1.5); "Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems" (SRCCL); "Special Report on the Ocean and Cryosphere1 in a Changing Climate"(SROCC); From Intergovernmental Science Policy Platform on Biodiversity and Ecosystem Services (IPBES): "Global Assessment Report on Biodiversity and Ecosystem Services"

Table 3:

Climate change parameters: observed and projected impacts to the Pacific Ocean

Change and impact	Observed	Projected
Sea ice change	Decrease with levels likely unprecedented for at least 1,000 years	Continued decrease
Sea Surface Temperature	Ocean warming likely more than doubled	Continued ocean warming
Marine heat waves	Likely doubled in frequency and intensity	Increased frequency, duration and intensity of marine heat waves
Deoxygenation	1970-2000: upper 1,000m of the water column loss of oxygen from increasing ocean stratification, changing ventilation and biochemistry	Very likely to be defined by oxygen loss across 59-90% of the ocean surface by 2031-2050 (RCP 8.5)
Sea Level Rise	2006-2015 = 2.5 x rates of 1901-1990	(RCP 8.5): Medium confidence that 'multi-meter' sea level rise could occur in the long term (100+ years) Extreme sea level events such as surges from tsunamis and cyclones will increase with sea level rise and marine heat waves (10-fold increase)
Extreme weather events	Increase in annual global proportion of category 4 or 5 tropical cyclones	Low lying cities and small islands at almost all latitudes will experience severe events annually by 2050

Some important implications for the Blue Pacific are listed below:

Projected impacts of climate change on Fisheries (see also Fisheries subsection): include the following:

- Medium confidence of challenge to fisheries governance in tropical Pacific Ocean.
- Ocean warming has contributed to overall decrease in maximum catch potential and, with ocean acidification, to changes in spatial distribution and abundance of some fish and shellfish stocks.

- The largest declines in marine catch potential will occur in tropical regions where ocean temperatures will continue to be the highest. Key tuna stocks are projected to shift eastward in the Pacific Ocean and decline in abundance in the western Pacific Ocean.
- These changes will undermine the livelihoods of island people as well as the economic development of countries and communities relying on this important revenue source.
- Impacts on baselines could lead to a significant decrease of exclusive economic zones of Forum island members and further diminish revenues from fisheries if maritime boundaries are not fixed in perpetuity.

Projected Security and impacts of climate change: Even under low emissions scenarios atoll nations will face high to very high risks. Many coastal regions will face adaptation limits. Globally, without adaptation, sea level rise associated with a 2-degree warmer world could displace 280 million people by 2100 (low confidence).

- Climate change impacts on ocean will exacerbate risks for human communities in low-lying coastal areas.
- Some island nations are likely to become uninhabitable due to climate-related ocean and cryosphere change.
- The integrity of national EEZ boundaries as well as that of the Blue Pacific Continent are at risk.

Projected livelihoods and Culture Impacts of Climate Change: In summary:

- Very high confidence that almost all warm-water coral reefs are projected to suffer significant losses of area and local extinctions, even if global warming is limited to 1.5°C, which is expected to cause a decrease of 20% in fisheries and 30% in tourism earnings.
- Long-term loss and degradation of marine ecosystems compromises the role of the ocean in cultural, recreational, and intrinsic values important for human and well-being.
- On a positive note, adaptation efforts to date have benefited from the participation of Indigenous People and Local Communities (IPLC)[71].

Scientists have discovered in some parts of the region (Papua New Guinea, New Caledonia, and Palau) where current conditions are close to those projected by the IPCC for the next 50 years (low pH and/or high CO2 content and/or warmer waters) seemingly resistant corals that have acclimatized to these conditions. They present, thus, excellent scientific research opportunities to improve understanding of coping mechanisms necessary for coral reefs to thrive as climate change impacts intensify[72]. That said, such bright spots are too few to deviate from the necessary track to take ambitious measures to curb future impacts.

The impacts of climate change exacerbate existing human-caused problems in the ocean such as pollution, overharvesting, and habitat destruction. These stressors also inhibit the capacity of the ocean, its ecosystems, and species to respond and adapt to the effects of climate change.

It has been acknowledged time and again that responses to climate change require a multi-level, multi-stakeholder, coordinated approach to limit global average temperature rise to below 1.5°C, through robust mitigation measures, more adaptation efforts, most importantly tackling other stressors that, alone and cumulated, already weaken ecosystems and societies. The ocean and its ecosystems are like a human body fighting a virus: pre-existing conditions will weaken their ability to adequately fight and bounce back from this threat.

The region has been leading in the fight against climate change nationally, regionally, and internationally. PIF Members have elaborated and implemented national plans and nationally determined contributions. CROP organisations have integrated the consideration of climate change into their work plans.

The ocean and the atmosphere are closely related and form a complex system. If the ocean is an important climate regulator, its degradation is rooted in many of the same causes as climate change. The ocean suffers from much of the impacts of climate change. The mutual consideration of ocean and climate in policies and programmes is important for more effective and efficient responses.

[71] See for instance: UNESCO Pacific and ICHCAP (2013)- Traditional Knowledge for Adapting to Climate Change: Safeguarding Intangible Cultural Heritage in the Pacific. https://www.sprep.org/attachments/VirLib/Regional/traditional-knowledge-adapting-climate-change.pdf

[72] Vidal, E. et C.E Payri. Biodiversité en Océanie, un besoin urgent d'action. Presses Universitaires de la Nouvelle Calédonie. Nouméa, 2019.

The UN 2030 Agenda for Sustainable Development with its 17 SDGs and 169 mutually supportive targets recognizes these complex interactions. The 2030 Agenda specifically recognizes that all these goals and targets are integrated and indivisible and balance the three dimensions of sustainable development. The initiative of Pacific Island delegations (PSIDS, Pacific Small Island Developing States) to successfully advocate for the designation of two distinct dedicated SDGs, one Climate Change (SDG 13) and one on the Ocean (SDG14) was not a signal for maintaining a silo approach. On the contrary, it was both a thoughtful attempt to raise attention on the cross-cutting nature of climate change and ocean for achieving sustainable development. The very design of the 2030 Agenda highlights the integrated nature of the SDGs and the importance of a multi-stakeholder approach if we are to indeed sustainably develop and leave no one behind[73]. (See figure 19 for SDGs interactions).

Resilience to climate change will require addressing stressors to the marine environment, the coast and on land, including through integrated management to address some of the drivers of coastal and ocean degradation. Examples of measures to improve the resilience and security include:

- Restoration and conservation of coastal (protective) vegetation – increasing Blue Carbon and coastal resilience.
- Elimination of over-exploitation and improve sustainable management of ocean resources.
- Mitigating coastal and ocean pollution.
- Effective protection of habitats and ecosystems.
- Reef restoration.
- Restoring hydrological regimes.
- Securing maritime boundaries.
- Improving energy efficiency and use of cleaner energy, including in maritime transport design and operation.
- Providing adequate means of implementation to sustain action and research.

[73] A/Res/70/1 – Transforming our world: the 2030 Agenda for Sustainable Development. UNGA, 25 September 2015

The fragmentation of sectoral programmes and policies have contributed to the inability to effectively address climate change impacts, including on the ocean. It is high time that the climate and ocean communities recognize their complementarity. This is what the Ocean Climate Nexus Initiative (COP25) aims to achieve.

The Dialogue on Ocean and Climate Change of the UNFCCC SBSTTA is an additional step in the efforts to demonstrate the indivisible links between climate change and the ocean. This event was also in line with the Kainaki II Declaration for Urgent Climate Change Action Now.

Marine Pollution

Marine pollution takes many forms and originates from many sources. Pollution of all kinds produce negative ecological and socio-economic impacts. They put entire ecosystems and species at risks and the people who depend on them for livelihood and economic development. Marine pollution requires the involvement of everyone, at all levels, to be effectively addressed. The most effective control measure remains prevention and avoiding waste generation.

Figure 6:
Sources of Pollution.

(Source: Ocean Health Index)

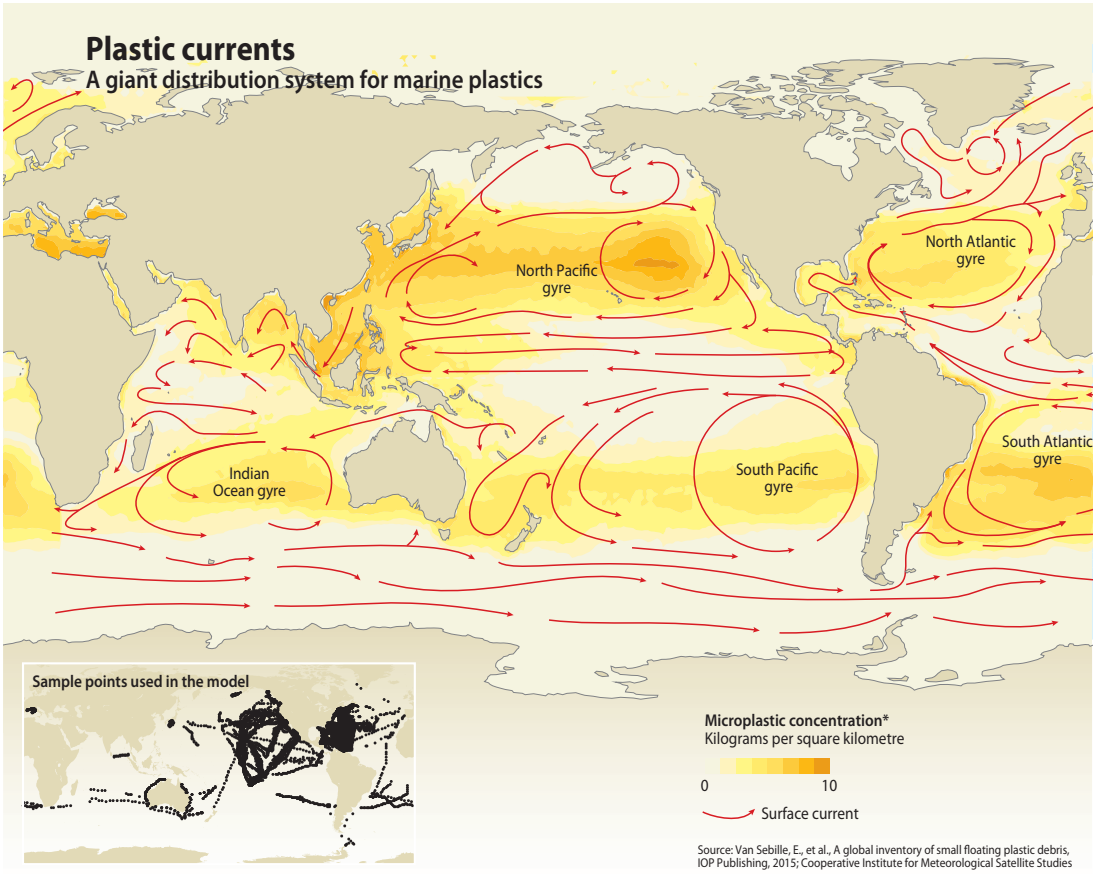
Plastic Pollution and Marine Debris:

Every year, between 4.7 and 5 million tons of materials, most of which consisting of vehicles, oil, paper / cardboard, and polyethylene terephthalate (PET) containers, are imported into the region. Only 1 million tones are returned to their places of origin generating an incredible volume of waste remaining in the region, most of which ends up in the ocean[74]. Since 1980, plastic pollution increased ten-fold. Australia and New Zealand are also confronted with this issue, although treatment facilities allow for recycling and reuse of these materials. The COVID-19 pandemic has increased the use of disposable plastics worldwide, exacerbating the issue[75].

Ghost gear represents at least one-tenth of all marine debris. It is four times more deadly to marine animal life than all other forms of marine debris combined.

[74] Pacific Marine Action Plan: Marine Litter 2018-2015. Apia, Samoa : SPREP, 2018
[75] Hughes, Kristin, May 2020, Protector or Polluter? The Impact of COVID-19 on the Movement to End Plastic Waste: https://www.weforum.org/agenda/2020/05/plastic-pollution-waste-pandemiccovid19-coronavirus-recycling-sustainability

Figure 7:
Floating islands of plastic



Preventing and mitigating pollution is a duty under international law. It is critical for maintaining healthy and resilient ecosystems, and to continue benefiting from the wealth of ecosystem services, including from tourism or fishing. In addition to ecological impacts on species and habitats, plastic pollution has many socio-economic impacts, including costs of clean up, treatment and repairs, health impacts (through contamination of seafood as well as streams and rivers), and the potential to facilitate invasive species introduction[76]. When breaking down into micro- and nano- plastics, plastic finds itself into the seafood we eat which jeopardizes our sustainable development and more alarmingly, the very livelihoods of our people.

[76] United Nations, 2016. The First Global Integrated Marine Assessment. Group of Experts of the Regular Process. Chapter 25

Forum members have been proactive in their efforts to tackle pollution. Regional frameworks, such as the FPO, the Noumea Convention, as well as international soft and hard law frameworks, such as UNCLOS, MARPOL, the 2030 Agenda for Sustainable Development and its SDGs, have guided Forum Members in this endeavour. Recently, SPREP has developed a regional strategy: The Cleaner Pacific 2025.

The Cleaner Pacific 2025 or the Pacific Regional Waste and Pollution Management Strategy 2016-2025 is a comprehensive long-term strategy for integrated sustainable waste management and pollution prevention and control in the region until 2025. It provides a strategic management framework to address waste, chemicals, and pollutants that will reduce associated threats to sustainable development of the region. Priority areas for management include municipal solid, asbestos, electrical and electronic waste (E-waste), healthcare waste, chemicals (such as persistent organic pollutants (POPs), ozone depleting substances (ODSs), and mercury, used oil and lubricants, marine litter, ship-sourced pollution, disaster waste, and liquid waste (such as sewage and trade waste).

The Marine Litter–Pacific Regional Action Plan (PMLAP) sets out the policy context and key actions to minimise marine litter and focuses on sea-based sources. It is a subset of the framework of the Cleaner Pacific 2025 as well as the Pacific Oceans Prevention Pollution Programme (PACPOL) 2015-2020. The PMLAP covers 11 pillars that includes legislative instruments, prevention of shipping and terrestrial pollution, management of transboundary waste, behaviour change and disaster waste management.

The PMLAP is supported by the Pacific Regional Reception Facilities Plan 2016 that includes five regional ports (Samoa, New Caledonia, French Polynesia, PNG and Fiji).

The 2017 Forum Leaders Meeting committed to fast track the development of policies to ban the use of single-use plastic bags, plastic and styrofoam packaging and called on Pacific Rim partners to commit to action on addressing marine pollution and marine debris to maintain the environmental integrity of

the Pacific. In 2019, the Leaders' annual Forum meeting was plastic-free at the initiative of the host country, Tuvalu. Since then, nine countries[77] have banned some single-use plastics in an effort to address marine plastic pollution and microplastics, and a further six countries[78] have announced their intention to ban plastics. Others have introduced levies on sale and/or manufacture of goods so as to minimize waste generation.

New Zealand for instance has established Waste Minimisation (Microbeads) Regulations 2017, which prohibit the sale and manufacture of wash-off products that contain plastic microbeads for the purposes of exfoliation, cleaning, abrasive cleaning or visual appearance of a product. Tuvalu has placed a waste levy on imported goods including plastics through the Waste Management (Levy Deposit) Regulation 2019. In Australia, the federal, state and territory governments with the support of industry agreed to National Packaging Targets, for delivery by 2025, to cut down the amount of waste Australia produces. The 2019 action plan to implement Australia's National Waste Policy also fixed a set of ambitious targets. In addition, the Australian Government has committed to develop the National Plastics Plan by the end of 2020, based on the outcomes of the National Plastics Summit held in March 2020.

In 2019 the Government of Samoa with the assistance of SPREP initiated the Greening of the Games (GoG) campaign, which was a key activity in the implementation of the PMLAP to raise awareness and actions to reduce the use of single-use plastics at sporting events as well as carbon footprint offsets.

[77] Ban on importation of non-biodegradable plastic shopping bags (American Samoa, Papua New Guinea); Ban on single-use plastic shopping bags – Commonwealth of Northern Mariana Islands, FSM Yap State and Palau; Ban on single-use plastics shopping bags, polystyrene, plastic cutleries – Republic of the Marshall Islands; Ban on single-use plastic bags and straws – Samoa and Vanuatu; Ban on single-use plastics – New Caledonia, French Polynesia; ban on importation and use of single-use plastics – Tuvalu (Waste Management (Prohibition on the Importation of Single Use Plastic) Regulation 2019); New Zealand (Waste Minimisation (Plastic Shopping Bags) Regulations 2018 prohibit all new single-use plastic shopping bags with handles that are made of plastic up to 70 microns in thickness).

[78] Cook Islands, Fiji, Kiribati, Niue, Solomon Islands, Tonga.

Samoa:

The Greening of the Games (GoG) was implemented by the Government of Samoa Ministry of Natural Resources and Environment with support from SPREP and the Pacific Games Office. It provided the 29th SPREP MEETING 'A Resilient Blue Pacific' Apia, Samoa 3-6 September 2019 29SM/Officials/WP 12.3.4.rev.1 29SM/Officials/WP 12.3.4/rev.1 Page 2 alternatives for single-use plastic water bottles, take-away food containers and shopping bags, provided rehydration stations for refilling reusable water bottles, carbon footprint offsets through planting of trees and champions behaviour change through multiple channels, including athletics. The GoG was supported by the UNEP Regional Seas Clean Seas Programme, Australian Government (DFAT), New Zealand (MFAT), France (AFD), and the United Kingdom. The legacy of the GoG campaign included the donation of 150 of the 250 hydration water stations to local schools after the games; a sustainability strategy; tools and guidelines for future sporting events; as well as carbon footprint offsets. GoG implementation and lessons learned will be applied to future Pacific Games events.

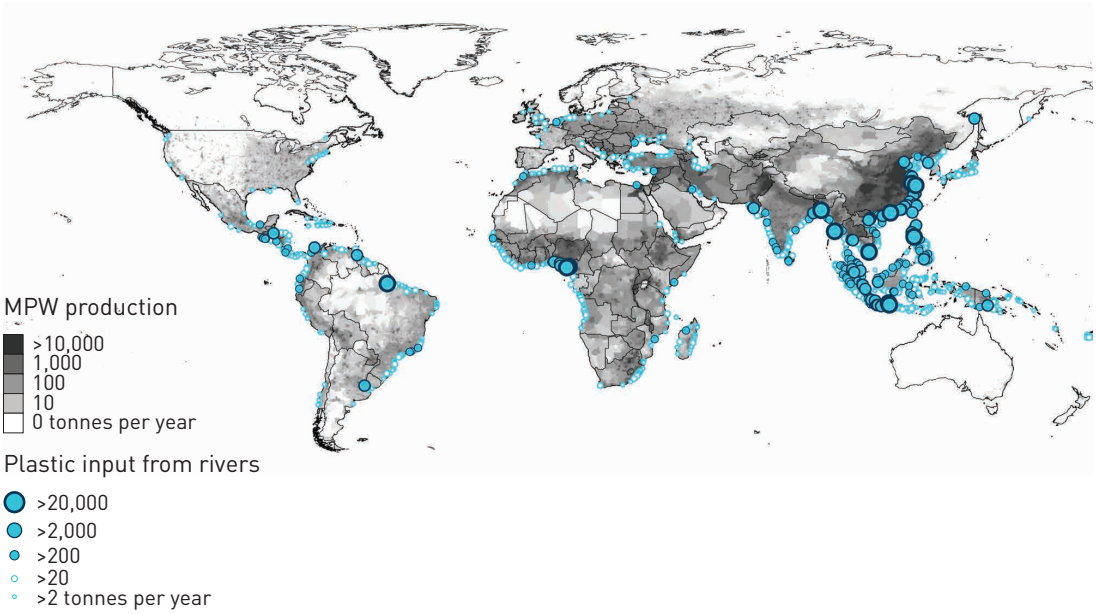
In summary, the promotion of the full circular plastics economy the reusing part, remains difficult in the region, in the Islands, due mostly to the lack of manufacturing opportunities.

The leadership taken by Forum Islands Countries is an important step to decrease the local impacts of plastic pollution. However, regional plans and strategies, do not include mechanisms to drive change beyond the capacity of the region. Considering the transboundary nature of marine litter and the fact that most marine debris in the Pacific Ocean originate from outside of the region, the Pacific Islands Forum Countries alone will not successfully solve this global challenge. Plastics pollution is a global problem and requires a global response. This is why some countries in the region have advocated for an international legally binding instrument on plastics to be decided at the Fifth session of the United Nations Environment Assembly to be held in February 2021[79].

[79] Most of the advocacy for such a global instrument comes from non-CROP organisations, such as EIA international. There have been virtual consultations with Blue Pacific stakeholders on "Laying the Pacific building blocks for a global agreement to combat plastic pollution". This adds to calls heard during the 2016 ICP on plastic pollution: https://undocs.org/A/71/204

Figure 8:

Plastic waste production and flow into global oceans



(Source: (Geyer et al., 2017; Lebreton et al., 2017); IPBES, 2019.)

Other types of pollution: The plight generated by plastic pollution should not side-track attention to other equally damaging types and sources of pollution. These include nutrient run-offs from agricultural, industrial, and human settlements and developments on land, ship-sourced and fishing-sourced pollution, and nuclear pollution. A summary of some of these issues and some of the responses is provided in Table 4 below.

Table 4:
Marine Pollution Characterization

Pollution type	Issue	Response
Land-based pollution	Sediment and nutrient pollution from: increase land-use activities, including agriculture, industry, as well as increased urbanization, lack of waste management and poor sanitation[80]. Little data on water quality across the region general pattern of lower water quality inshore compared to offshore areas[81], in particular when waste management and wastewater treatment are deficient. Infrastructure costs: substantial burden for national governments or municipalities and require partnerships.	SPC: Land Resources Division: support for land use planning. Tuvalu: partnered with ADB to develop a Water and Sanitation Project known as the 'Tuvalu Integrated Urban Resilience Project' funded under Tuvalu's share from the Least Developed Country Fund (LDCF). The project is expected to start this year 2020 but may be delayed due to the current COVID-19 situation. Need to improve the consideration of any land-use project or policy on the adjacent ecosystems, including the coastal and marine environments.
Ship-sourced marine pollution	Types of pollution from ships: ballast water, solid waste, oil spills, emissions, noise. For fishing vessels in particular, nets and lines for instance. FADs are another type of pollution which when beached on shorelines and coral reefs can cause significant ecosystem impacts.	1990 Noumea Convention (including provisions on marine pollution from ships and dumping of waste). WCPFC Conservation Management Measure (2017-04) for Marine Pollution to implement MARPOL (lead RMI). IMO Conventions and protocols. International Convention for the Prevention of Pollution from Ships (MARPOL) 1978, Annex IV- Prevention of Pollution by Sewage from Ships; Annex IV- Prevention of Pollution by Garbage from Ships have been ratified and domestic legislations by Fiji, PNG, Solomon Islands, Samoa, Tonga, Tuvalu and Vanuatu. IMO Marine Litter Action Plan led by Vanuatu (October 2018).

[80] For instance, only three villages of South Tarawa have waste water treatment facilities in Kiribati (Kiribati contribution to OPOC questionnaire)
[81] Solomon Islands, SOE 2019,p. 77

Pollution type	Issue	Response
Oil Spills	Increased maritime traffic, aging fleets, as well as storms, likelihoods of vessels accidents.	2000 Pacific Islands Regional Marine Spill Contingency Plan (PACPLAN): framework for cooperative response to major marine spills in the region (coordinated and managed by SPREP). Activated for: 2019 MV Solomon Trader (Solomon Islands); 2018 MV Kea Trader (New Caledonia); and 2017 MV Southern Phoenix (Fiji). Delays in the provision of this support in some instances due to shortcomings in national plans, domestic legislation and uncertainty with how PACPLAN is activated. The responses to these incidents had many lessons learnt can be considered in the review of PACPLAN and can be used to improve its implementation in future incidents. SPREP decision to become a member of Oil Spill Response Limited (OSRL)
Nuclear pollution, WW II ordnance and ship wrecks	Significance of the potential threat of nuclear contamination, World War II wrecks and unexploded ordnances to the health and security of the region, its people and prospects. Possible contamination of coastal ecosystems, as well as fish resources, including tuna.	Rarotonga Treaty, Leaders communiqués and declarations. Leaders mandated the Forum Secretariat to coordinate assistance by CROP Organisations to Kiribati and the Marshall Islands in addressing ongoing impacts of nuclear testing, including, human rights, environmental contamination, and health impacts. Ongoing dialogue between the CROP Organisations, particularly SPREP and SPC, and the Republic of the Marshall Islands National Nuclear Commission.

Pollution type	Issue	Response
Under-water noise pollution[82]	Issue of global significance. Many human activities taking place in the ocean generate a wide range of sounds, both impulsive and continuous, and increased noise levels. Anthropogenic underwater noise is often pervasive and transboundary. Some high intensity sources of underwater sound, such as air-guns or seismic surveys, can be recorded over several thousand kilometers, including in areas with little human activity. Marine species, including marine mammals, fish and invertebrates, can be affected by increased levels of sound (behavioural changes and physical and physiological effects and eventually affecting people relying on these species, such as local communities IPLC or tourist operators).	Require raising awareness of the issue, better understand the properties and propagation of sound in the marine environment and the way in which marine life is affected, and further studying the interaction of noise with other pressures to better assess cumulative impacts. Application of a precautionary approach at both global and regional levels. Efforts have been undertaken to address sound at the source, for example by promoting the development of noise-quieting technologies and measures (reduction of vessels' speed). International cooperation and coordination are essential components of efforts to address anthropogenic underwater noise and its impacts, in particular in view of the potential transboundary impacts. Cross-sectoral cooperation is also required to address cumulative impacts: cooperation, at all levels, including to build or further strengthen scientific knowledge, capacity and mitigation approaches. IMO action: development of Guidelines. In our region: underwater noise pollution has not yet become a topic of priority.

[82] 19th session of the ICP: https://www.un.org/Depts/los/consultative_process/icp19_panellist.pdf and https://undocs.org/A/73/124

Solomon Islands[83]:

Almost half of the waste generated per person per day in Honiara is not collected or managed. Recent water quality monitoring conducted in May 2019 has confirmed the illegal disposal or dumping of wastes into the Mataniko River particularly by communities and developments located along the river in Honiara. Improper waste management causes both direct and indirect pollution to the air, land, water and the ocean.

Waste disposed into the bush, rivers and streams gets washed into the ocean and suffocates coral reefs. Plastic debris washed into the ocean through the drainage systems threatens marine life such as turtles. Infrastructure required for waste management is costly for local government in terms of the cost for administration, spare parts for vehicles, maintenance service, workers salary and for hiring of machines for rehabilitation work or construction works at the landfill site. Public infrastructure such as roads and bridges are affected by disaster wastes.

During the April 2014 flash floods, debris carried downstream by the floods damaged bridges in Honiara and other parts of Guadalcanal. Shorelines were also covered with debris that was washed ashore by the strong waves, producing bad odours and polluting the beach front (ECD, 2014) Littering of waste and improper disposal requires regular cleanup. This takes up more government funds for cleanups that could have been used to support schools and health facilities. It is costly to provide a regular waste collection service. Landfills require sufficient space to properly operate the site for safe and final disposal of waste.

[83] Solomon Islands, SOE 2019

Kiribati[84]:

Wastewater treatment (sewage systems) cover three villages, Betio, Bairiki and Bikenibeu on the capital atoll island of Kiribati – South Tarawa Atoll. There is no wastewater treatment in any of the outer atoll islands in the Gilbert Group. The three village sewage systems, include a pump station and outfall pipes extended to the outer reef to a depth of 30 meters and with a 10 metre diffuser connected to each. Wastewater from each Government Housing in these three villages goes through the pump station where it is filtered. Solid objects (sludges) from the wastewater are retained in the pump station where they are taken and disposed of in the landfill while the wastewater is discharged to the ocean. The total coverage of the sewage system is 49.8% (Betio 30.8%, Bairiki 5.6% and Bikenibeu 13.4%). This is calculated from the 2015 population census.

Kiritimati Atoll (as the second suburban area acting as the Government sub-headquarters serving the inhabited islands in the Line and Phoenix Group) also has wastewater treatment for all Government Housing quarters for civil servants in Ronton village and Banana village.

[84] Kiribati contribution to OPOC's questionnaire

Other pressures

In addition to climate change and pollution, other important pressures are plaguing our ocean and include the following as listed below:

Over-extraction: of both living and nonliving resources and damages from extractive activities are significant. Coastal sand and gravel aggregate mining around the region is considerable (see subsection below on mining). Overfishing, whether coastal or offshore, is a reality that needs to be addressed by all. Three key examples of over-extractions highlighted here:

i. **Tuna stocks:** (Bigeye, yellowfin, skipjack and South Pacific albacore tuna) are currently sustainably exploited, many of the region's longline fisheries are barely economic. Controls on fishing effort have stabilised purse seine catch levels, but the resulting catch value is strongly affected by price fluctuations. Fishing in the High Seas remains a challenge for the region. It requires collaboration from all actors – fishing states, coastal states, markets states and port states. Inshore fisheries resources have supported the survival of coastal communities for centuries. They are enormously important for food security and livelihoods, but are under threat from growing populations and, in the longer term, from the impacts of climate change. Finfish resources in many areas are now overfished to meet local demand, while high value export species like bêche-de-mer have been driven almost to extinction[85].

ii. **Bêche-de-Mer/Sea Cucumber** harvesting has become a multi-million dollars industry in the Pacific, which has led to uncontrolled, unmanaged overexploitation resulting in driving many sea cucumber species to the IUCN Red List and threatening this sector with collapse[86]. Some countries, such as the Solomon Islands, have implemented bans. Increase international demand, in particular from China, has raised the prices of this commodity, where low-value products have replaced high-value products due to depletion. Exports are now generally framed and overseen by governments to reduce overharvesting[87].

[85] Regional Roadmap for sustainable Pacific Fisheries, SPC, FFA. 2015
[86] Regional Roadmap for sustainable Pacific Fisheries, SPC, FFA. 2015
[87] Solomon Islands, SOE 2019

iii. **Mining for Sand and Gravel (refer subsection on Coastal Mining)** is a key developmental activity in all Islands Countries. In the atoll nations the coastal, reefs and lagoons are the only local source. Mining activity, often by dredging, can have significant and lasting effects on local coastal ecosystems as they can smother nurseries and feeding grounds of many species. Growing urbanization has increased demand for sand as a material for construction. Large-scale operations can remove significant quantities of sand in a short amount of time. A good example is the recently completed dredging operation in Funafuti Lagoon, Tuvalu which has resulted in reclamation of the Vaiaku foreshore and in-filling of the existing borrow pits. MFAT was involved in the filling of borrow pits only while the Government of Tuvalu and other partners executed the reclamation operations.

Coastal infrastructure: Shoreline hardening structures, such as sea walls which require significant volumes of sand and gravel, have been built as protection against sea level rise. For island nations such as Kiribati, Tuvalu and Marshall Islands for which with few exceptions the highest point above sea level is around 2 metres and who are confronted to gloomy projections of possible wipe off within this century, short term solution for hopefully long term salvation comes in the form of hard infrastructure[88]. Whether seawalls, dikes, or raising the island in an attempt to conserve baselines, shorelines across the Pacific are changing[89]. Unfortunately, many examples demonstrate the profound environmental changes that occurred on natural features after the shoreline constructions modified the natural flow and wave patterns, exacerbating erosion by deepening the area in front of the structure and eroding adjacent areas. They have also been responsible for loss of biodiversity and organism abundance, progressive loss of beaches, burying of corals in the lagoon, and mangrove ecosystem modification. As these hard structures are expensive to maintain, they have also represented significant costs to authorities[90].

[88] See for instance recent declaration by President Maamau of Kiribati on objective to raise the islands of Kiribati to fight back sea level rise, with the support of China. (From Joshua Mcdonald. Kiribati announces plans to raise Islands above rising seas. The Diplomat. 14 August 2020. https://thediplomat.com/2020/08/kiribati-announces-plans-to-raise-islands-above-rising-seas/)
[89] The abundance of structures, mostly seawalls (94.7 % of the total), which stretch along 29 % of the coastline on South Tarawa. The protected shoreline decreases from urban (53.9 % at Bairiki) to rural islands (27.3 % at Buota), in proportion to population pressure. (From Kiribati's contribution to OPOC's questionnaire)
[90] Moritz C, Vii J, Lee Long W, Tamelander J, Thomassin A, Planes S (editors). (2018) Status and Trends of Coral Reefs of the Pacific. Global Coral Reef Monitoring Network.

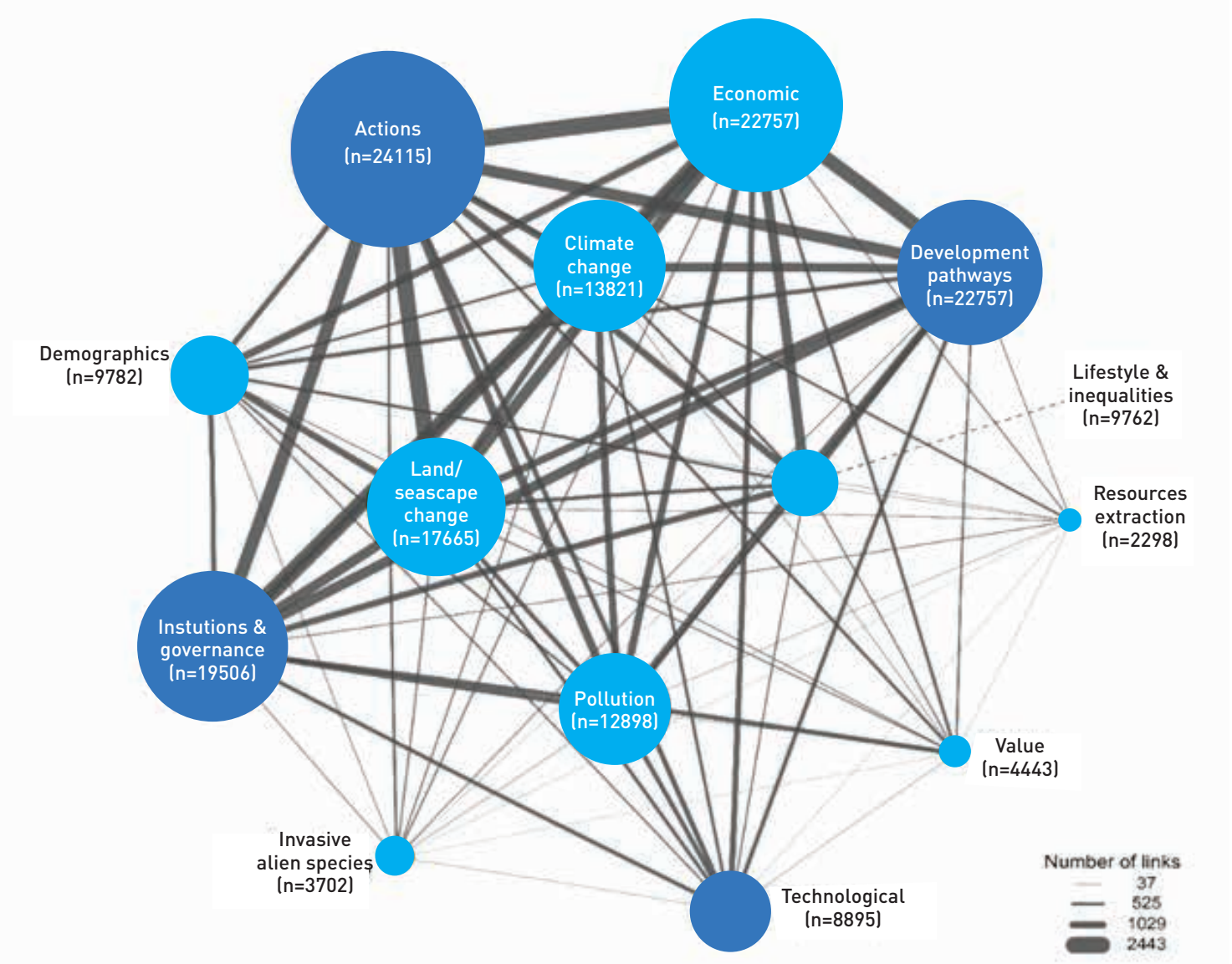
Natural Disasters: It was well documented[91] that the PIF Members are amongst the most disaster prone per capita in the world. Of particular note in this ocean report are tsunamis that are generated both locally within the region and from distal localities around the Pacific Rim. Local tsunamis are the most damaging and dangerous and caused by nearby earthquakes, volcanic eruptions and submarine landslides. In recent history two are worthy of mention. A tsunami[92] occurred on the north coast of Papua New Guinea in 1998 along a 30 kilometre stretch of coast between Aitape and Sissano Lagoon. Over 2,000 people lost their lives. A second tsunami occurred in 2009 that impacted Samoa, American Samoa and Tonga as a result of which at least 200 people lost their lives. In both these tsunamis the cost of public and private infrastructure damage was huge. The post-event trauma impact on communities was a substantial issue to be dealt with.

Changes in sea-use: With improvement in technology, the ocean has seen the number and variety of usage exponentially increase. Despite adopting UNCLOS as the global framework to regulate all activities in the ocean, the cumulated impacts of these activities compounded with that of climate change has increased the pressures on the ocean and its resources. (See spotlight section). There is currently no international nor regional policy or legal framework to manage and orchestrate this complex ever expanding inter-sectoral system. At the nationa level, integrated ocean policies or marine spatial planning can help in reducing the potential conflicts of interests and use. Sectoral approach, which hardly takes into consideration the sum of individual activities or projects within one sector, and fails to adequately address emerging global changes. As a matter of fact, it even exacerbates ocean degradation.

[91] Pacific Catastrophe Risk Assessment and Financing Initiative http://pcrafi.spc.int/about/
[92] UNOCHA, 1998

Figure 9:

Current state of knowledge on interactions among drivers from a systematic review of literature from 2016-May 2018.



2.4 Inadequate means of implementation

Need for an enabling environment: Conserving and managing the ocean and resources, as well as increasing returns from sustainable use of the ocean require information, skills, and know how. The term 'capacity' is highly inclusive and essentially refers to the overall capacity in a certain area/sector, for example ocean monitoring across the Pacific Ocean. There are differing levels of capacity and different levels of investment in capacity.

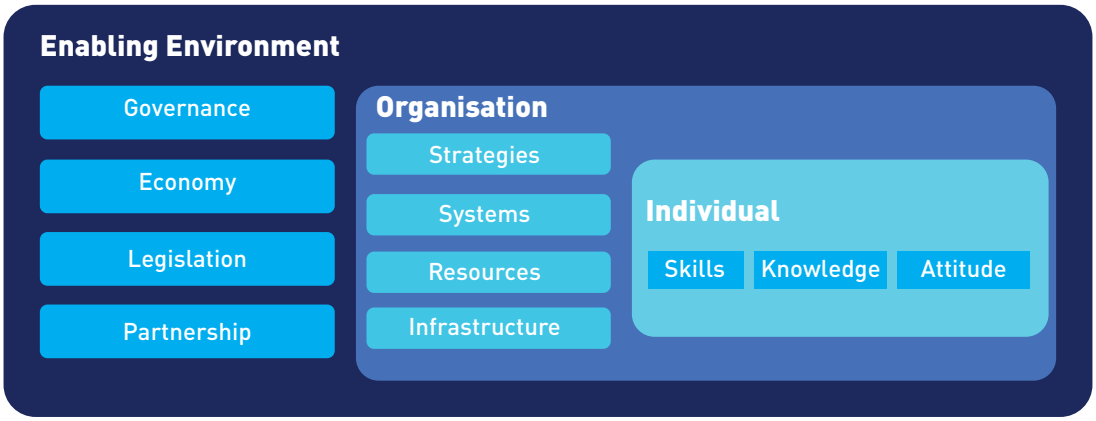
The recurring capacity theme is on the lack of scientific capacity. Indeed, there is a significant imbalance in the capacity of the Blue Pacific members in conducting scientific research and development at the national level. For instance, all 35 marine scientific research projects conducted in the Phoenix Islands Protected Area (PIPA) of Kiribati since 2008 were carried out by foreign researchers with one or two Kiribati nationals involved[93].

A significant number of projects and resources have been devoted to building capacity to address particular issues, often with little consideration for the needs of the recipients. Knowing what we want required understanding what we need. For that, we must know what we lack. Few needs assessments have been conducted in the region. Those that have, have been focused on specific areas or countries. The need for a region wide needs assessment to support the objectives set by our Leaders is important to help collective progress.

Furthermore, in areas where there is a lot of interests from international partners, the capacity constraints faced by the Blue Pacific hamper their ability to adequately absorb all the help provided. Alignment to regional strategies by partners are a means to address these difficulties.

[93] Kiribati contribution to the OPOC questionnaire.

Figure 10:
Defining Capacity



Source SPC (at PIF BBNJ Negotiators, Feb 2020)

Financing and Funding: Globally, the cost to achieve SDG 14 is estimated at USD174 billion annually. Of this amount, the greatest resources, USD$87 billion, must be devoted to combating marine pollution, followed by USD40 billion for ecosystems protection (through conservation or management), and USD28 billion for fisheries. It is undeniable these requirements constitute a significant weight for the region, in particular for island countries[94].

While maximizing the effective use of domestic resources is important, access to ODA and other external development financing is of particular importance for the smaller island states of the region given their limited access to domestic sources of finance, their vulnerability to climate change, natural disasters and the impacts of COVID 19. Accessing ODA and other external development financing is most successful when it is provided through a partnership arrangement which is mutually respectful and accountable.

Development financing options for PICTs include: (i) foreign capital or foreign direct investments and loans; (ii) inflow of unrequited transfers including remittances and foreign aid; (iii) build-up of domestic sources of finance; (iv) generation of net foreign reserves through exports, the sale of fishing opportunities, tourism earning, etc.; and (v) investments in national economic resilience and insurance through regional platforms such as Pacific Islands Risk Insurance Company and the proposed Pacific Resilience Facility[95].

[94] UNESCAP, 2020.
[95] PIFS, 2020. The 2020 Pacific Biennial Sustainable Development Report.

Partnerships within and beyond our region are important sources of means of implementation. Through the SAMOA Pathway and implementation of SDG 14, over 150 partnerships have been registered, with only 18% of partnerships reported[96]. OPOC has recently collated all the ocean initiatives in the region[97] through different datasets and platforms and reported over 500 ocean initiatives implemented in the region. These are currently maintained by OPOC on its website (see Annex 9) and will be made available through other regional data platforms.

The role of regional financial cooperation to assist countries with limited resources is paramount. Innovative finance solutions are being developed around the world to support efforts for an increase in finance flowing towards sustainable investments in ocean-based priorities. A study[98] conducted for 14 Pacific Island Countries in the region on ocean-related activities concluded a disjuncture between development-financed regional projects lead by Intergovernmental organisations and the government-led and single country voluntary commitments. With global unprecedented shift in interests on ocean for a blue economy frontier, several leading organisations have mapped[99] out the landscape of ocean finance baselines, types of capital, sources and other innovative mechanisms. In the region, work on ocean finance is being implemented by FFA and OPOC through the Pacific Regional Oceanscape Program (PROP) as Component 3 – Sustainable Ocean Financing; funded by the World Bank and the Global Environment Facility. This programme sets the region in tune with global development in this space and will be an important enabling initiative moving forward.

The aim of the PROP C3 is to improve the amount and efficacy of finance for improved ocean governance in the region. This will be delivered through 3 main broad objectives: (i). Development of innovative and region appropriate finance mechanisms and guidance (such as ocean bonds, large scale marine protected area finance, community marine managed area finance, taxes and subsidies and insurance); (ii) Build the capacity of the region (through a Pacific Ocean Finance Fellowship – 12 Ocean Finance Fellows and a Pacific Ocean Finance Conference); (iii) Development of ocean finance profiles to act as baseline and strategizing document to further this area.

[96] PIFS, 2018. First quadrennial Pacific Sustainable Development Report, Suva.
[97] Ocean initiatives is characterized as projects, programs, pledges, commitments and activities associated with sustainable use, management and conservation of ocean resources in the Pacific.
[98] Hill. J et al (2019) The disjuncture between regional ocean priorities and development assistance in the South Pacific
[99] Friends of the Ocean Action, 2020. The Ocean Finance Handbook

This programme is still on-going, the products will be made available on the OPOC website and will be widely disseminated. It is worth noting that this project only focuses on 14 members of the Blue Pacific. Overall, this Pacific Ocean Finance Programme promotes innovative and sustainable ocean financing instruments for effective implementation of national and regional ocean policies. This will help transcend the visions and priorities of Leaders for the Blue Pacific Continent.

Data and information: Lack of data and information remains a significant obstacle to gaining an understanding on how to manage and protect the ocean more sustainably. While varied, the reasons include a piecemeal approach to data gathering at national level, as well as insufficient data sharing, or redundancy. Limited data sharing results in the amount and quality of data often being weak and not uniform, which complicates efforts to gain a deeper understanding of the state of the ocean[100]. Efforts have enabled some improvement but more coordination, including amongst CROP organisations, is required.

The transformative nature of the UN 2030 Agenda for Sustainable Development in so far as it extends to all countries and stakeholders should also be a guiding model in the Blue Pacific Continent. The absence of region wide data and information, including as related to follow up on progress of implementation of regional commitments makes it difficult to have a true picture about how collective progress is being made.

Monitoring, Surveillance and Enforcement: As stewards of vast ocean areas, Forum island members face an acute challenge and responsibility in terms of management of the ocean and its resources. The implementation of policy frameworks and measures, whether national or at regional scale, will be directly dependent on the capacity to effectively monitor and enforce such measures. The routine use of a nation's EEZ for criminal activity is likely to transfer eventually into use of the islands themselves as criminals seek to acquire convenient logistical, facilitation and consumer hubs. The operation of these hubs is likely to, and typically intended to, increase corruption, violence and the proliferation of illegal drugs and weapons. As a consequence of poor maritime security, nations may endure deterioration in local governance, foreign investment and tourism[101].

[100] UNESCAP, 2020
[101] Pacific Fusion Centre. Maritime Security in the Pacific. Strategic Analytical Report. June 2020

Ocean management is thus directly dependent on effective protection and action against IUU fishing, pollution, climate change, border disputes, piracy and transnational crime.

Maritime monitoring, control and surveillance (MCS) activities act as deterrent against illicit activities. They also demonstrate the commitment of our region to the protection of our waters, resources, and fishing industries[102]. Leaders recognized and acknowledge that maritime surveillance must be operationalized at a regional level to be effective.

In the region, surface patrols using a mix of navy, police, fisheries and customs vessels detect criminal activities and create a deterrent effect. These surface patrols can be complemented by aerial surveillance support, through collaboration between FFA, as well as international partners including France and the United States who work in collaboration with Australia and New Zealand.

Australia's Pacific Maritime Security Program is another example of how Australia is supporting Pacific Countries' maritime security efforts. It consists of three components: i) delivering 21 Guardian-class Patrol Boats to 12 Pacific island countries (PICs); ii) supporting contracted aerial surveillance activities through the Pacific Islands Forum Fisheries Agency (FFA); and iii) strengthening regional coordination through improved interoperability between PICs. The Pacific Maritime Security Program enhances the region's capacity to effectively collect, analyse, manage and share maritime security information to locate and disrupt illegal activity within their exclusive economic zones and adjacent high seas.

Multilateral and bilateral cooperation between Pacific Island Countries is a key component of the region's existing maritime security practices. Several processes contribute to regional cooperation on maritime security, such as the Pacific Islands Forum Officials Subcommittee on Regional Security, which was established by Leaders to support practical implementation of the Boe Declaration on Regional Security. The Pacific Transnational Crime Network

[102] Pacific Fusion Centre. Aerial Surveillance – Shaping National Maritime Responses. Strategic Analytical Report . 17 July 2020.

(PTCN) is another example of practical regional cooperation in support of the Boe Declaration and maritime security. As a multi-agency information sharing network specifically focused on transnational crime, the PTCN is able to collect and disseminate reporting on vessel movements with its many Pacific law enforcement partners. The PTCN also coordinates the dissemination of intelligence products created by the Pacific Transnational Crime Coordination Centre.

Despite progress in maritime surveillance, enormous challenges remain. The cost of maritime surveillance operation is certainly a significant impediment in effectively preventing illicit or unregulated activities. Furthermore, gaps in legislation and inter-agency cooperation, whether at the national or regional levels, persist. Maritime security legislation often requires updates and streamlining in order to remain effective due to the changing and dynamic nature of maritime threats; increasing recognition of the need for intragovernmental collaboration and growing national maritime capabilities. As maritime security involves many agencies both nationally and regionally, streamlined legislation and strong coordination between relevant agencies is essential[103].

Awareness raising through education: The conservation and management of the Blue Pacific Continent and its resources is a collective and inter-generational matter. At the 2019 POA meeting, participants identified the need to strengthen schools and universities' curricula to train future marine professionals (for example legal, scientific, technical, engineering, etc.). In particular, it was recognized that making education fit-for-place-and-purpose was essential to build appropriate capacity. In the Marshall Islands, for instance, school curricula are now being built to encourage Marshallese children to look back at their past, including ancestral knowledge, to be better equipped to face the challenges of today and tomorrow[104].

[103] Pacific Fusion Centre. Maritime Security in the Pacific. Strategic Analytical Report. July 2020
[104] Minister Kabua, at Virtual Ocean Dialogues, June 2020

Action 4A of the FPO is still relevant. Indeed, given the limited human and financial resources for sustainable ocean management and development, capacity building actions and formal education programmes have to be cost effective, targeted and thoughtful.

Increased collaboration with the media is needed in order to build improved understanding and awareness of people of the Blue Pacific – based on science, information, and knowledge. This should include actions to improve ocean literacy through Pacific-specific messaging and knowledge.

2.5 Spotlight on Important Blue Pacific Ocean Economic Sectors

Ocean-related sectors is a bedrock for the Blue Pacific economies as they generate important revenues and provide millions of people across our region with employment that help sustain livelihoods in their communities.

Many of these sectors depend on healthy ecosystems to thrive, in particular tourism and fisheries. Many can impact on the health of ocean and coastal ecosystems and have a role to play in mitigating climate change and global pollution. All of them have sectoral interests that may at best interact with, and at worst compete, with those of other sectors.

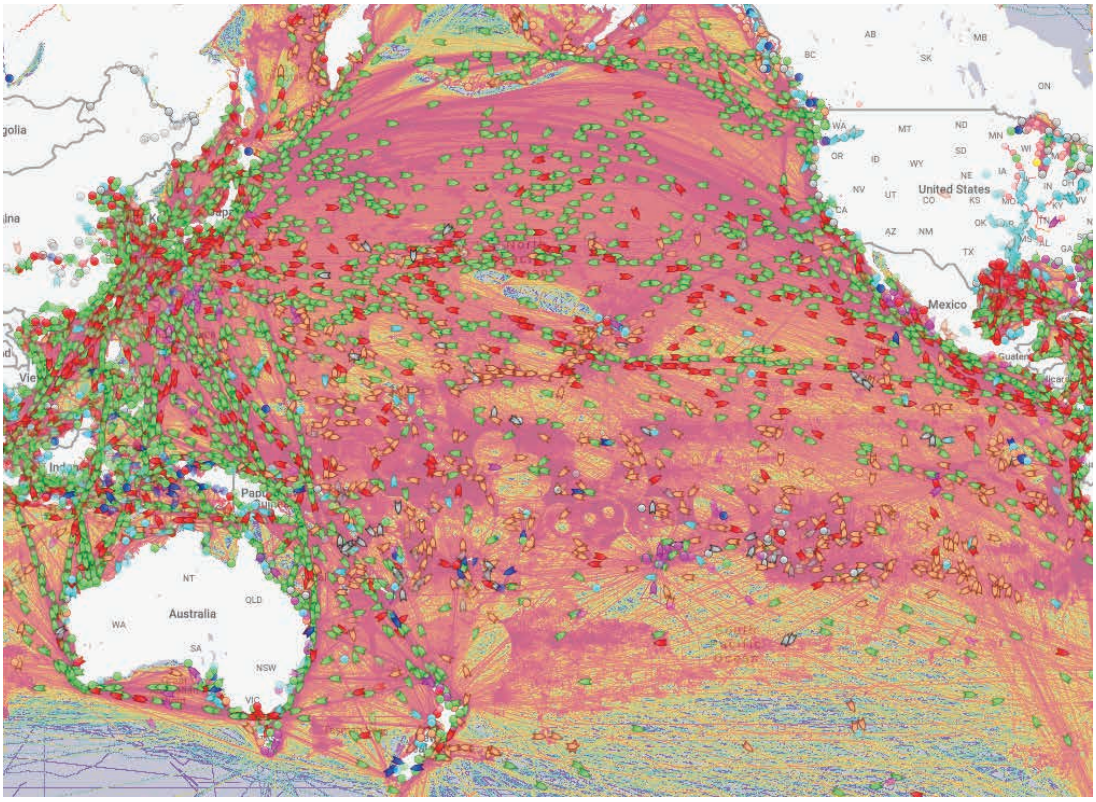
Maritime transport

Our region was settled and grew through vessels voyaging across the seas. Today, maritime transport is still an important sector: thousands of vessels are enjoying innocent and transit passage each year. The vast majority of these ships, however, do not serve PICT. In accordance with international law as provided by UNCLOS, these vessels movements in our region, and in particular in national waters, are not subject to any specific retribution to our PIF Members[105].

[105] UNCLOS, part II section 3, article 52, 54, 58, 87

Figure 11:

Vessel traffic on August 18, 2020 against 2017 vessel density



(Source : https://www.marinetraffic.com/en/ais/home/centerx:172.4/centery:-18.9/zoom:3)

Maritime transport serves as the main link between the countries of the Blue Pacific Continent and the rest of the world. It also serves as a strong domestic linkage within countries of the region. With 90% of trade goods imported through the shipping sector in PICTs, and over 99% of Australia's imports and exports by volume and over 79 % by value (representing 24% of GDP) dependent on shipping, this sector underpins the economic development of the region.

In PICTs, there are over 2,000 private domestic shipping companies operating between thousands of islands. In addition to providing essential goods, they also support a wide array of other important sectors, such as fisheries, tourism, agriculture and healthcare. In the cases of these remote islands, maritime transport is more than an economic vehicle: it is a social, cultural, and livelihoods component, which can come at a high cost for public authorities.

While the shipping industry provides many services, it is also a source of many challenges. Of particular note is the occurrence in recent years of disasters associated with interisland ferries that have resulted in many deaths. Such examples include: Tonga (MV Princess Ashika in 2009); Kiribati (MV Betiraoi in 2018); and most recently Solomon Islands (MV Taimareho in 2020). Wreckages from large cargos also constitute a threat to ecological health, food security of local communities of our region, and economic burden to these countries through significant pollution, such as the bauxite spills in Kangava Bay, Solomon Islands in July 2019.

The shipping industry is battling how to balance its social, environmental, and economic costs. As climate change remains the greatest threat faced by the region, there has been a strong push to improve the efficiency and decrease the carbon footprint of vessels. This goal may conflict with the social imperative of maintaining lines to enclaved and remote small communities. However, the development of cleaner technologies and the upscaling of such technology, in addition to a wider reflection on the modes of production and consumption, could help reduce these challenges.

Addressing these challenges requires improved implementation of existing policy, legal, and institutional frameworks to combat environmental risks and crimes caused by international and national maritime traffic and preventing risk of pollution from ships (oil, chemicals, sewage waters, ballast waters and sediments, garbage or wrecks).

The Pacific maritime transport sector is a contributor to GHG emissions, albeit in relatively small proportions. Many vessels operating in the region are old and are fossil fuel thirsty. 75% of all the bulk fuel imported across the region is used for either road or maritime transport. In the Marshall Islands, for instance, the domestic shipping sector is responsible for a third of the fuel consumption[106]. Furthermore, shipping is generally a marginal business in the region, in particular PICTs. Many maritime routes are uneconomical and serviced by both government and subsidized private ship operators. Because the shipping business in the region does not provide adequate revenues, ship operators refrain from buying new ships or investing in ship maintenance and retrofit. The result is that the fleets are generally in poor condition and have a low level of investment in equipment[107]. Nonetheless, innovative approaches to greening the sector have been implemented. (See Box 1)

[106] Republic of Marshall Islands. Tile Til Eo 2050 CLIMATE STRATEGY "Lighting the way", para 114, September 2018
[107] From SPC/ 2019 Energy & Transport Ministers Meeting, agenda item 5, para 14

Examples of greening the maritime transport sector[108]

Vanuatu: a cargo ferry was fitted with a solar marine system last year (2019). The instalment of this system is now projected to save the ship operator AUD62,000 per year in fuel costs, and result in a 32 % reduction in emissions at anchorage.

Solomon Islands: In 2018, the Solomon Islands transitioned lighting systems through a 'Green Ports' initiative saved the Solomon Islands Ports Authority AUD180,000 annually with a 160-tonne reduction in emissions and a 13% reduction on overall energy consumption. This project not only increased the safety of ships docking at night, it also led to the reduction of operational costs and resulted in increased productivity with a significant reduction in carbon emissions and reliance on fossil fuel.

Fiji: Traditional boatbuilding is making a resurgence as some communities are discovering the benefits of wind-powered canoes over outboard engines for inter-island transport over short distances.

Marshall Islands[109]: The Micronesian Center for Sustainable Transport (MCST) sets out a structured fifteen-year programme to transition to low carbon transport pathways. The vision of MSCT is to be a center of excellence to prepare and implement a whole of country strategy to transition the Marshall Islands to a low carbon transport future as a pilot and catalyst for other Micronesian and Small Island States. MCST is currently working with a private partner, Swire Shipping, to design a low carbon cargo ship that can be built locally and commercially operated. It is also working with partners to develop low carbon shipping solutions for intra-lagoon transport and inter-island transport in the Marshall Islands.

[108] As cited By Stuart Minchin, Director-General Pacific Community (SPC) Noumea- 5 June 2020. More examples: https://www.spc.int/updates/news/2019/10/reducing-greenhouse-gas-emissions-in-maritime-sector-saving-thousands-for-boat

[109] From SPC/ 2019 Energy & Transport Ministers Meeting, agenda item 5, para 7

Transport Ministers at their meeting in Samoa in September 2019, echoed previous calls made to reduce GHG emissions from international and domestic ships. The GHG emission from shipping sector is very significant. They requested implementation of consistent programmes addressing the need for data, policies, laws, technology and finance, and all agreed to work towards the ambitious Pacific Blue Shipping Partnership's targets for domestic shipping in PICTs in order to reduce GHG emissions by 40% in 2030 and by 100% in 2050. They also adopted Pacific Ports 2030-2050, a vision of resilient, green and clean ports in the region. Also noting the impacts from heavy emission from large vessels (transshipments, heavy fuel oil) which could generate dirty fumes and add to air pollution when in port. Marshall Islands was the only country to explicitly include domestic shipping in its 2025 Nationally Determined Contribution to the UNFCCC, and as the world's second biggest flag registry, has led efforts to decarbonize international shipping at the IMO[110]. In addition to decarbonizing the industry, some stakeholders have looked at tackling other GHG, such as sulphur oxides, through calling for the implementation of a Sulphur Emission Control Area (SECA zone) in the Pacific under the provisions of MARPOL Annex VI[111]. Moreover, efforts to decarbonize the fleets must not negatively impact the Pacific disproportionately.

The unavailability of new shipping technologies, the lack of local suppliers who can design, install, and maintain these technologies, the lack of standards, insufficient or no drydocking capacity, lack of ship engineering fit-out and maintenance capacity, limited access to onshore power supply, and lack of alternative fuel are some of the challenges faced in the region. These limitations inhibit adequate retrofitting. Most domestic vessels operating in the region in particular PICTs, are old and do not have proper documentation to facilitate cost-effective retrofitting with new technologies[112].

The role of ports in shifting to a true sustainable shipping sector is paramount. The Pacific Ports 2030-2050 vision[113] aims to integrate objectives, measures, and targets for: (i) Resilient Ports – to adapt port development and strengthen preparedness, response and recovery to climate change and disasters, implement processes to support economic development, and achieve port operational efficiency and compliance to international standards and best

[110] Republic of Marshall Islands. Tile Til Eo 2050 CLIMATE STRATEGY "Lighting the way", para 114, September 2018.
[111] Inputs from French Polynesia Maritime Cluster
[112] From SPC/ 2019 Energy & Transport Ministers Meeting, agenda item 5, para 13
[113] Adopted by the fourth meeting of transport and energy ministers. Note that representatives of French Polynesia and New Caledonia were absent from that meeting

practices; (ii) Green Ports – to contribute to low-carbon development by reducing the carbon footprint of regional ports, increasing energy efficiency and incentivizing green shipping; and (iii) Clean Ports – to reduce the environmental impact of port operations and comply with international standards and best practices for pollution prevention and control.

Shipping can interact with migratory species, such as protected marine mammals, including through collisions or underwater noise. Shipping can release alien species with the potential to become invasive species through discharge of ballast waters[114] or after cleaning of vessels' hulls. All are possibilities that are not fully addressed in the region.

With shipping traffic having increased by 4% in the region, some have questioned the opportunity to develop a system similar to the "pay for use of air space[115]." However, current international law and freedom of navigation and free passage does not allow for such ideas to be put in place.

Impacts of COVID-19 on maritime transport

Maritime transport in the region has been severely impacted by the COVID-19 pandemic. Shipping companies have reported reduced cargo demand on reduced services. This is in part due to the dramatic reduction in tourism and increased quarantine restrictions across the region. Companies have responded with a mix of blanked sailings, reduced frequency of services, alteration of scheduled routes and use of smaller vessels.

Difficulties in performing crew change was identified as one of the most pressing issues facing the international maritime industry, spurring the IMO Secretary General to call on IMO Member States to urgently act to ensure ships' crew changeovers can take place to keep world trade flowing and avert a humanitarian and ship safety crisis[116].

[114] Note the IMO International Convention for the Control and Management of Ships' Ballast Water and Sediments. GPIP : Australia; Cook Islands; Fiji ; France (New Caledonia and French Polynesia); Kiribati; Marshall Islands; New Zealand; Niue; Palau; Samoa; Tonga; Tuvalu; Vanuatu
[115] POA, 2019, Outcome Summary, p.18, para 41
[116] Brouwer, Stephen: The western and central Pacific tuna fishery: 2018 overview and status of stocks / Stephen Brouwer, Graham Pilling, John Hampton, Peter Williams, Matthew Vincent and Thomas Peatman

The offshore and coastal fisheries sectors are paramount to the sustainable development of the Blue Pacific Continent. They provide both substantial food security (with coastal fisheries accounting for a large share of the daily food consumption) and economic revenue.

The annual value of fishery exports of PICTs in 2014 represented close to 40% of the value of all national exports, with some countries demonstrating quite large monetary values, for example Papua New Guinea (US$136 million), Fiji (US$58 million), Solomon Islands (US$54 million), and New Caledonia (US$22 million). Of the approximately US$820 million in total fishery exports from PICTs in 2014, about 76% was from Papua New Guinea, French Polynesia, and American Samoa. Both offshore and coastal fisheries sectors are threatened by impacts of climate change, ocean acidification, pollution, overexploitation, and competing use of areas where fishing activity takes place. In themselves, both offshore and coastal fisheries sectors can be significant drivers of ocean degradation though overexploitation in some instances, pollution, or bycatch. Improving the accountability of the sector, such as through a certification scheme, contributes to increasing the value of the resource and the benefits received by communities depending on it.

The 2015 Roadmap for Sustainable Fisheries endorsed by Leaders provides the policy framework for both coastal and offshore fisheries, setting targets and outcomes.

The 2019 POA meeting emphasized that effective management of the fisheries resources would contribute to strengthening member countries' economies, and the livelihoods and well-being of communities. However, it was also indicated that reigning in fishing capacity in the region continues to be a struggle, and that some caution must be given to staying within ecological limits. The need to factor in resilience to global changes in fishing operations was highlighted and acknowledged. Other negative impacts such as from drifting FADs and ghost fishing gear were highlighted as areas of concern needing attention.

Offshore Fisheries

The transboundary tuna stocks of the region are managed cooperatively. The Forum Fisheries Agency (FFA) assists member countries to manage tuna fishing operations by foreign and domestic fleets within their EEZs. The Office of the Parties to the Nauru Agreement (PNA) allocates purse-seine fishing effort across the EEZs of its member countries through the "vessel day scheme". The broader approach needed to co-ordinate tuna catches within EEZs with those made on the High Seas is managed by the Western and Central Pacific Fisheries Commission (WCPFC). These management arrangements are based on regular stock assessments for each species of tuna by the Oceanic Fisheries Programme of the Pacific Community (SPC). Another organisation is South Pacific Regional Fisheries Management Organisation (SPRFMO) whose membership is largely outside the Forum members, with the exception of Australia, Cook Islands, New Zealand and Vanuatu. The tuna fisheries of the region principally target four main tuna species: skipjack, yellowfin, bigeye and albacore tuna. However, the fisheries also catch a range of other species that are either of commercial value (by-catch) or are discarded. There are also incidents of the capture of species of ecological and/or social significance, many of which are protected, threatened or vulnerable.

Annual total catch of the four main tuna species has increased steadily since the 1980s as the purse seine fleet expanded, with some stabilisation since 2009. However, the provisional total tuna catch for 2019 was estimated to be the highest on record at 2,961,059 tonnes, representing 81% of the total Pacific Ocean catch (3,656,813 tonnes) and 55% of the global tuna catch (the provisional estimate for 2019 being 5,403,368 tonnes)[117].

The share taken by FFA fleets (including flagged and chartered vessels) has increased significantly in recent years, with the value share rising from 31% in 2013 to 49% in 2018 to exceed the 2020 target. In 2018 the proportions of the value of the catch taken by FFA longline and purse seine fleets were 56% and 47% respectively. If the recent trend continues the value of the catch taken by FFA fleets will exceed that of foreign fleets for the first time in 2019. It is relevant to note that in recent years the number of island country flagged vessels

[117] (Tuna Fisheries Assessment Report, no. 19 / Pacific Community) ISSN: 1562-5206

has increased. This change has been driven by the potential opportunities for beneficial access relationships generally, and more specifically, reduced prices for fishing access compared to the Vessel Day Scheme, and other flexibilities such as exemptions from FAD bans, and as an enabling agent for the construction of new vessels for foreign states that otherwise have High Seas effort and capacity limits on fleet size.

Total direct employment in the fishing industry in FFA island members public and private sectors provided around 22,500 jobs in 2017. In Australia, it amounted to 5,155 people in 2016. The Roadmap anticipated an increase of 18,000 jobs from the 2013 total, with 9,000 new jobs created in the first 5 years. Current trends indicate that these targets remain achievable. Importantly, the Roadmap also focuses on ways to increase the spread of employment across FFA Members, noting that it is very concentrated at present around the processing industry in Melanesia. There has been some growth in crew employment and new initiatives will seek to build on this trend.

Economic returns to Forum island members[118] are measured through two components: government revenues from license and access fees, and the contribution of the harvest sector to GDP. The Roadmap 5-year goal is to increase each factor by 25% from 2015 levels. In 2014 foreign fishing access generated US$349,335,572 across PICTs particularly those countries that authorize foreign fishing (mostly countries that are Parties to the Nauru Agreement). Under the current trend, the 25% increase is likely to be achieved by the end of 2020. However, this growth has been achieved from purse seine vessels operating under the Vessel Day Scheme and this has slowed in recent years. It is also unclear as of yet how the COVID-19 pandemic has influenced this element.

The stagnant and low level of returns from the longline fishery indicates the challenges faced in achieving the economic potential of this sector. Preliminary estimates indicate that in 2018 the contribution of the harvest sector to GDP of Forum island members reached record highs with increase in the value of the catch[119]. These figures do not take into account island countries who are not FFA members and who have developed national longlines fleets.

[118] https://www.wcpfc.int/node/46580
[119] TUVALU: Fisheries revenue from access fees accounts for 60% of revenue collected by the Government (AU$30-40 million per year) and about 40% of the national budget including aid. There are more than 70 Fisheries Observers employed in the sector as well as 10-15 crew on Australian fishing vessels.

Overall, it seems that most of the objectives of the Roadmap are on track. In some countries, 100% of crew are nationals and operated on locally owned fleets that are locally built. This model enables the provision of jobs for nationals, as well as the ability to consume fresh high-quality tuna at affordable prices for the consumers. But this all domestic led model is not without challenges, the most significant of which being the costs. French Polynesia was able to transition to this model in the 1990s thanks to generous support from the EU and the French State. The sector almost collapsed in the early 2000s and has successfully bounced back thanks to continued strong financial support from the French Polynesian government. The COVID-19 crisis, which took a significant toll on the export of sashimi-grade tuna further impacted the industry.

Challenges

The offshore fisheries sector, in particular tuna fisheries, is faced with many challenges. IUU fishing impacts the sustainability of the sector, it represents a volume of 306,440 tonnes, or about USD600 million[120]. It is not only an economic issue but also a security one as IUU is often linked with other types of illicit activities, such as arms smuggling, drugs, and human trafficking. Tackling IUU fishing remains a regional priority as reiterated by Leaders at their last Forum.

A decision at the WTO on disciplines eliminating subsidies for IUU fishing and prohibiting certain forms of fisheries subsidies that contribute to overcapacity and overfishing, with special and differential treatment for developing and least-developed countries is overdue and expected by the end of 2020. At the 21 July meeting of the Negotiating Group on Rules, heads of WTO delegations said they were ready to start a new phase of discussions on fisheries subsidies after the summer break and to work towards getting an agreement by end-2020. Members will use, as a starting point, the draft consolidated document circulated by the Chair of the Negotiating Group.

One of the critical challenges to the sectors relates to maritime security. The health and security of observers on board of fishing vessels in the region has been of serious concern which has spurred efforts to push for

[120] FFA/SPC, 2020. Tuna scorecard

more regulations for their safety and improved work conditions. WCPFC first enacted a Conservation and Management Measures in 2017 that set out certain obligations and requirements with respect to observer safety. FFA has included provisions addressing the safety of observers in its Harmonized Minimum Terms and Conditions for Access by Fishing Vessels. The recent Forum Fisheries Committee meeting (FFC114) decided to further explore the improvement of observer safety in the wake of COVID-19, develop safety protocols at sea and in port, as well as minimum standards for observer insurance and support by FFA to its members to investigate observer safety issues such as death or disappearance[121]. With the COVID-19 pandemic, their health and safety were at the core of decisions by FFA and WCPFC to temporarily suspend the observer programme, though, the region is working toward reinstating the program soon.

Drugs and arms smuggling have become issues due to the vast ocean space which is at best difficult to police.

Furthermore, climate change will contribute to additional pressures on fish stock availability. The projections show an eastern shift in the biomass of skipjack and yellowfin tuna over time, which should be considered in light of projections and historical fishing pressure data which see fishing pressure as the dominant future driver of tuna population status until the mid-century. For instance, estimates show significant economic loses for Papua New Guinea in the long term due to the impact of climate variations and oceanographic conditions. The model estimated that by 2050, the Papua New Guinea catch will decline by 37%, revenue decline by 0.9% and decrease in value by USD47.7 million. During the same period, countries to the east – Kiribati and Tuvalu, will not be significantly affected[122].

The projected changes in abundance and redistribution of these tuna associated with climate change could have significant implications for the economic development of the region and the management of tuna resources at basin scale. Larger proportions of the catch of each species is increasingly expected to be made in international waters, where monitoring, surveillance

[121] MRAG, 2016. Towards the Quantification of Illegal, Unreported and Unregulated (IUU) Fishing in the Pacific Islands Region. FFA
[122] FFA TRADE AND INDUSTRY NEWS. Vol.13: Issue 3 May - June 2020. https://www.ffa.int/node/2449

and enforcement has been weak. Calls for the use of e-monitoring technology grow louder in the WCPFC and other RFMOs with the unprecedented situation generated by COVID-19. Discussions so far on this issue indicate that while many WCPFC members recognise the benefits of e-monitoring, its development in principle and practical operation on a regional basis will take time due to the need for the development of e-monitoring standards, specifications and procedures, as well as the cost and non-commercial availability of units.

There are increased pressures due to marine pollution from land and sea sources. They impact species' habitats, breeding areas, the food chain on which fish depend, and the fish themselves. These pressures decrease their ability to cope with the adverse impacts of climate change such as increasing average temperature, deoxygenation, and so on. Furthermore, with the multiplication of studies finding traces of plastics in fish, the value of the resource could be further decreased[123]. In this regard it should be noted there are high-tech initiative(s) to create scalable sashimi-quality laboratory-grown tuna[124].

Despite being one of the best managed tuna stocks in the world, the offshore fisheries sector is a major contributor to pressures on the ocean and its ecosystems, and its species[125]. Bycatch is an important issue in particular as regards sharks whose populations are declining fast, in particular silky sharks and white-tipped oceanic whitetip sharks. Also referenced in previous sections as bycatch includes seabirds and turtles. A lot of improvement is taking place and efforts are being made at the regional level through the WCPFC. Effort is also being made by other regional organisations to support continued progress; for example in addition to the many ongoing training opportunities provided by FFA and SPC, SPREP will fund, through the By-Catch and Integrated Ecosystem Management Initiative (KRA 5 of the 2018 Pacific-European Union Marine Partnership Programme (PEUMP), the training of 30 new entrants and 30 existing crew and 15 observers in Fiji for longline crews in the bycatch training module offered by the Fiji National University's Maritime Academy, in collaboration with WWF, the Ministry of Fisheries and the Fiji Fishing Industry Association (FFIA). Also the PEUMP Bycatch and Integrated Ecosystem Management project implemented by SPREP aimed to mimimise bycatch of endangered species in inshore and offshore waters.

[123] Senina et al (2018)
[124] Pacific Regional Action Plan: Marine Debris: p.6. ; United Nations (2015), First Global Integrated Marine Assessment, Chap. 6
[125] https://finlessfoods.com/

Sharks play a critical role in the ecosystem and their decline is preoccupying for the balance of the entire food chain. The United Nations Food and Agriculture Organization (FAO) has developed an International Plan of Action for the Conservation and Management of Sharks (IPOASHARKS). One of its objectives is to minimize unwanted bycatch of sharks. At the regional a joint initiative of the FFA, SPREP, SPC and WCPFC, has developed a regional plan of action for sharks. WCPCF has also adopted shark conservation and management measures and is considering additional measures. Fishing operations pollute: including from greenhouse gases emissions from aging fleets, underwater noise from ships, and marine debris from discarded or lost fishing gear, such as nets or Fishing Aggregating Devices. These issues are slowly being addressed in relevant regional organizations, but the time is ticking for expeditious progress especially if we are to adequately improve the resilience of our ocean and its resources, as well as that of the fisheries sector.

Marine debris take several forms (plastic pollution with plastic bags, straws, disposable utensils, or cigarette butts, etc.). For fishing, however, it is mostly plastic pollution and ghost gear in particular. Ghost gear are abandoned, lost or otherwise discarded equipment lost at sea (voluntarily or not). They can include pieces of nets, fishing lines, etc. They represent a growing problem that international and regional and sectoral organizations are trying to address. A particular example of ghost gear is the case of fishing aggregating devices (FADs). FADs used by industrial fisheries can improve tuna catch rates especially for purse seine vessels. This non-selective fishing method can have a negative impact on resources, especially when poorly managed and abandoned. They contribute to increasing bycatches, such as small bigeye tuna and other species. It is important to better regulate these practices. Such efforts could include: (i) considering increased use of seasonal closures around FADs; (ii) mitigation via FAD designs that reduce the likelihood of shark and turtle entanglement as currently required; (iii) a move towards biodegradable FAD construction; and (iv) FAD-less industrial fishing.

Impacts of COVID-19 on offshore fisheries

COVID-19 has and will continue to impact the tuna fisheries of Forum island members in a number of ways. First, this crisis could lead to a significant drop in their GDP in particular in countries that depend heavily on fishing income. Furthermore, the temporary suspension of the fisheries observers programme, could have significant impacts on the flow of information as well as monitoring. FFA and SPC have been using an integrated suite of tools in the Monitoring, Control and Surveillance Framework, such as vessel log-sheets, vessel monitoring system and transshipment reporting to collect data and sustain adequate results in an effort to continue providing adequate monitoring and surveillance services. However, the region is working towards reinstatement of observers as soon as possible.

Other impacts could be economic due to a reduction of fishing efforts or supply. Skipjack prices in Bangkok had been stable around USD1,500 a metric tonne but dipped down to around USD1,400 per metric tonne in late April following signs of some softening in other markets because of strong supply and some slowing processing capacity[126].

[126] State of Conservation in Oceania : regional report. Apia, Samoa : SPREP, 2016, p.29

Opportunities

The FFA, assisted by SPC, created and operationalized a data sharing agreement to improve regional maritime security. Under the agreement, the Vessel Monitoring System (VMS), which is widely used to track fishing fleets and vessels across the Pacific, now includes authoritative EEZ data. Pacific Island governments worked with the SPC to delimit, negotiate, and declare their maritime boundaries and subsequently provided this information to the FFA to update the VMS. The agreement will improve maritime security throughout the region by enhancing the monitoring, control, and surveillance of IUU fishing. However, delimitation of remaining boundaries and fixing them in perpetuity is critical to maintaining national control over these resources within national jurisdictions.

Fish market in Honiara, Solomon Islands.

Photo Credit: Pacific Islands Forum Secretariat (PIFS)

The PNA success story[127]: by Dr Transform Aqorau

"....The story of the PNA has been a remarkable one, especially the success of the Vessel Day Scheme (VDS) and how its significant economic returns have made such a large impact on the development of Pacific communities. (...) For a long time, the Pacific Islands have been viewed as lacking in resources, dependent on other countries and restricted by the sea. (...) We are not a region lacking in resources. I said, we needed to have a different mindset and take a more positive approach towards ourselves, that we are in fact the custodians of the largest tuna stocks in the world, and we manage and have responsibility over the largest ocean space in the world. We therefore have a special responsibility and duty, not only to ourselves but also to the international community, to ensure that we prevent the overexploitation of the region's tuna stocks. For businesses, the health of the tuna stocks is a matter of profit margins, but for some of the PNA members, it is a matter of survival. The salaries of health workers, teachers and civil servants depend on the revenue generated from the sale of days from the VDS. The impact of the revenues from the VDS is more obvious in the smaller PNA member countries because the funds are channeled through areas that are tangible and visible to the public. (...) One of the lessons I have learnt is that PIF Members are not always going to succeed in all the endeavours they attempt. For Pacific Islanders, there needs to be a 'common currency' surrounding regional projects, so the various countries are able to work together cooperatively. Specifically, this is a willingness to

[127] FFA Trade and Industry News – March/April 2020

pursue something when it does not appear to encroach on matters that members feel should be done by them individually, and not collectively. If this aspect is missing, then failure is to be expected. (...) Through PNA initiatives, the members have instituted innovative conservation and management measures, including: » imposing FAD closures — which have resulted in reducing the purse seine catch of bigeye tuna which is the species that has been threatened by overexploitation; » introducing area closures such as the prohibition on fishing on pockets of the High Seas, which reduces the area over which purse seine vessels fish, thus minimising the pressure on bigeye tuna; » introducing mesh size regulations which ensures that smaller-sized fish are not taken, allowing them to grow older and bigger; » catch retention, which creates an incentive for vessels to avoid catching smaller-sized tuna because it is uneconomical for them, this ensuring that they are more economical about their decisions when they make a set; » prohibiting setting on whale sharks to protect an endangered species that tends to aggregate tuna and therefore attract vessels to set around them; » requiring 100% observers on all purse seiners to collect data and also to ensure that purse seine vessels do not set on FADs during the closure and do not fish on the High Seas; and » pushing through the adoption of limited reference points for all tuna stocks and target reference points for skipjack tuna thereby ensuring a robust fisheries management framework for tuna stocks to prevent their overexploitation....".

Coastal Fisheries

Coastal fisheries are at the heart of Pacific islanders' livelihoods. Between 50-90% of the animal-sourced protein consumed in the region comes from fish, mostly from coastal fisheries, with an average of 16.5 kg per person per year. However, over-exploitation of coastal fisheries, including other seafood for example crustaceans *(crabs: qari, mana, lairo in Fiji; uga coconut crab in Niue)* for subsistence, artisanal and commercial purposes, poses threats to their sustainability and the health and livelihood of local communities[128].

A recent national marine ecosystem service valuation estimated that coastal fisheries provided the following (MACBIO Project):

- Fiji USD65.14 million
- Kiribati USD40 million
- Solomon Islands USD69.2 million
- Tonga USD7.54 million
- Vanuatu USD10.1 million

Climate change and ocean acidification already have and will continue to have adverse impact the region, in particular coastal ecosystems such as coral reefs. Overfished and unbalanced ecosystems will be less resilient to these global changes. As the population of many PICTs is growing, coastal fisheries resources are declining, therefore resulting in an increasing gap between the amounts of fish required for food security and sustainable harvests from coastal fisheries. In addition, the removal of herbivorous fish (the main targeted coastal fish species), which graze on algae that compete with corals and thereby ensure habitat suitability for coral growth, will limit recovery from bleaching events and cyclones and may contribute to long-term decline in coral cover.

[128] Aqorau, Transform, 2019. Fishing for Success: Lessons in Pacific Regionalism. Ed. Kathryn Skorkiewicz. ANU; Excerpts from conclusion

Typically, national government fisheries agencies give a low priority to estimating the coastal fisheries. While there is a strong recognition of the role played by coastal fisheries for food security and nutrition, there has been little investment in statistics or management across the region[129] despite repetitive calls to focus more on them[130]. The paucity of information on coastal fisheries production is a problem in most Pacific Islands Forum Countries. If a fisheries agency cannot afford some type of snapshot fisheries survey, consideration should be given to looking into other opportunities such as integrating with household income and expenditure surveys, agriculture surveys or a national census.

Although traditional forms of fisheries management are practiced in the majority of communities in the region, community-based fisheries management as a form of co-management with national agencies or other external partners remains uncommon. In areas where viable community-based fisheries management (CBFM) systems are in place, there are only small pockets of effective coastal fisheries management. This patchy approach to CBFM is not enough to address wider national problems of coastal fisheries resource decline, therefore ways must be found to build on successes and expand them to meaningful proportions of coastal environments. Other concerns expressed regard the participation and influence of non-government organisations who have influence over decision making, which may be seen as taking decisions at the expense of local communities[131].

[129] SPC, Scaling-up community-based fisheries management, information paper 6, 3rd SPC Regional Technical Meeting on Coastal Fisheries
[130] Gillett, R. D. Fisheries in the Economies of Pacific Island Countries and Territories. SPC, 2016
[131] Cristelle Pratt and Hugh Govan, 2009. Policy Analysis: Framework for the Pacific Oceanscape: A catalyst for implementation of ocean policy

Impacts of COVID-19 on coastal fisheries

The COVID-19 pandemic has exacerbated the decline in coastal fisheries due to disruptions brought on shipping, increase in food costs, increase unemployment, de-urbanisation of large numbers of people, disruption in the movement of people, including fisheries officers. This has put further strains on the management of coastal resources, as well as compliance and enforcement.

These issues and the cumulative impacts from COVID-19 are another stark reminder of the critical importance to urgently address the conservation and management of coastal resources. Inclusive management measures can build on the traditional knowledge of local communities to complement scientific information. In addition, the promotion and enhancement of the role of women in resource management measures and fishing methods also supports the effective implementation of inclusive management. Several countries such as Australia, New Zealand, Papua New Guinea, Vanuatu, Solomon Islands American Samoa, Cook Islands, Marshall Islands, Niue, Samoa, Solomon Islands, Tokelau, Tuvalu, and Kiribati have promoted policies that recognise the management of coastal resources by local communities with the support from government agencies, NGOs, and CSOs.

Aquaculture/Mariculture

In 2014, aquaculture production in the region was estimated at 4,217 metric tonnes and 9,122,169 pieces, worth just over USD116 million. New Caledonia and French Polynesia were responsible for more than 93% of the value of all aquaculture production in the region. In only six Pacific Islands Forum Countries was the value of aquaculture production in 2014 greater than 5% of the value of coastal fisheries[132].

There are several types of aquaculture projects in place and in the making. Aquaculture projects in the region include shrimps, giant clams, and some small-scale fish aquaculture. In 2018 both Vanuatu and Papua New Guinea exported 20 metric tonnes of shrimps to Australia[133]. The pearl industry, however, remains one of the most lucrative in the region and represented about USD70 million in exports (pre-COVID-19). While dominated by French Polynesia, the pearl industry has developed in a number of other countries, including Cook Islands, Fiji, and some islands in Micronesia.

Aquaculture is often regarded as a solace for food security and economic development. This is not without environmental impacts. Whether as increase pressure on wild caught feeds, increased nutrient pollution resulting in the formation of dead zones, genetically modified fish contaminating wild species, or other types of pollution, all aquaculture operations, including the pearl industry, need to be carefully planned to limit negative impacts.

Furthermore, climate change and ocean acidification are also negatively impacting this sector. For the pearl industry, for instance, Pinctada margaritifera are sensitive to temperature and pH levels. A decrease in pH slows the growth of the oyster's shell and alters its internal surface. While this does not necessarily directly threaten the survival of the oysters, the warming of the water restricts their metabolism and slows their growth, which in turn could endanger the long-term survival of the species. In addition, warming can also impact the availability of food sources for the oysters and can contribute to an increase in pathogen levels that can harm the oysters[134].

[132] Te Ohu Kaimoana - Aotearoa/New Zealand submission to OPOC, May 2020
[133] Gillett, R. D. Fisheries in the Economies of Pacific Island Countries and Territories. SPC, 2016
[134] SPC 2018 results report p33

Impacts of COVID-19 on aquaculture/ mariculture

With regards to the impacts of COVID-19 on the aquaculture sector, some of the immediate potential issues regarding the supply of feed, which can result in a decline in the production from this sector and potentially exacerbating any potential humanitarian crises in the region, with respect to access to food supplies.

For the pearl industry in particular, as PIF Members have closed their borders around the time of the lunar new year, many Chinees pearl farm workers, on leave in mainland China for these festivities, were unable to come back in the region on the farms that employed them as pearl oyster graters and technicians. As a result, production of pearls decreased. In addition, loss of tourism activities due to border shutdowns and inability to export pearls and had led to significant drops in sales of pearls marking 2020 a very dark year for the Black Pearl Industry.

Tourism

Globally, approximately half of all tourists travel to coastal areas. Coastal tourism and recreation contribute to economic growth by creating job opportunities and providing an important source of income and foreign exchange earnings. The South Pacific Tourism Organisation (SPTO) reports over 3 million visitors travelled to the region in 2018, with Australia and New Zealand representing the top two providers of tourists for Cook Islands, Niue, Samoa, Solomon Islands, Vanuatu, and Fiji[135]. This figure was forecasted to increase by 3% annually, but the COVID-19 pandemic has in effect halted this progress. Tourism can account for more than 25% of the national GDP and up to 80% in some countries like Cook Islands. It represents 46% of Palau's GDP and 86% of its exports.

Tourism provided French Polynesia with about USD550 million in 2019 (nautical and cruise sectors included). In New Zealand, in the year ended March 2019 tourism generated an estimated direct contribution to GDP of $16.2 billion, or 5.8 percent of GDP. 229,566 people were directly employed in tourism[136]. In Australia, tourism represented 3.1% of real GDP in 2018-2019 and provided direct employment for one in 19 Australians. It was estimated to provide more to the Australian economy than agriculture, forestry and fishing, utilities and information, media and communications[137]. The total contribution of travel and tourism to GDP can be three times greater than its direct contribution as it supports an ecosystem of small and medium businesses. For non-tourism dependent countries, such as Kiribati, tourism can also be an important revenue source[138].

In economic terms cruise ships along with superyachts have seen a significant growth in the region in recent years. This came to a halt with many Pacific Islands Forum Countries having their borders closed to cruise ships with much real caution of when this aspect of the tourism sector will recommence. Some, for example Fiji through its Blue Lane Initiative, are attempting to safely reopen their borders to superyachts.

[135] FRENCH POLYNESIA & ADEME, PLAN CLIMAT-ENERGIE DE LA POLYNESIE FRANÇAISE 13 (2012) http://www.polynesie-francaise.ademe.fr/sites/default/files/files/mediatheque/maquette_pce_2015-bdef_dble_page.pdf [https://perma.cc/BNK2-AQGQ]

[136] See FORWARD (2020). Pacific Tourism: COVID 19 Impact & Recovery: Sector Status Report: Phase 1B. SPTO and MFAT.

[137] New Zealand's contribution to OPOC questionnaire, www.mbie.govt.nz

[138] Australia National Tourism Satellite Account, Key indicators for 2018-2019: https://www.tra.gov.au/economic-analysis/economic-value/national-tourism-satellite-account/national-tourism-satellite-account

The tourism industry in the Blue Pacific continent, apart from ability to travel internationally, depends strongly on healthy ecosystems and environment. Pressures and continued degradation can jeopardize that pristine postcard value. Environmental sustainability is an increasingly important factor in tourists' decisions on where to travel. Ecotourism as a fraction of total tourism has been growing by over 10% annually. Ready access to unique environmental features is a major draw as illustrated by coral reefs attracting 350 million people and driving over USD30 billion each year in tourism revenue globally.

Pacific ecosystems, species and heritage offer unique tourism value. Pacific underwater cultural heritage is largely underdeveloped for tourism. It offers much potential with over 4,000 heritage sites across the region, many accessible to snorkelers and divers[139].

However, tourism infrastructure and practices have varied environmental impacts. Tourists alter the environments they visit through their travel behaviors, energy consumption, requirements for tourist facilities, and even the sunscreen they wear, which can be toxic to marine species, in particular coral reefs. Creating a culture of sustainable tourism that is led by "island values" and the reality of long-term dependence on ocean and coastal environments can generate value for Pacific branded tourism. The change in behaviors spurred by COVID-19, in particular the adoption of precaution behaviors (wear masks, wash hands, maintain a physical distance) demonstrate that such change in behavior is possible. Some countries, such as Palau, have launched innovative ways to limit tourists' adverse impacts such as the Palau Pledge, imposing permits for certain sensitive sites, or establishing conservation and sustainable use measures, such as marine protected areas[140].

Tourism relies also on government and partners' support. For instance, the French Polynesia 2015-2020 Tourism Development Strategy was supported by the European Union. The French Polynesian community has massively supported the sector, to the tune of 10% of its budget, in aid for training, investment, modernization, and dedicated public facilities. The aid is supplemented by a mechanism of national tax credits directly managed by the French State for the tourism sector in French Polynesia[141].

[139] For instance, tourism represented 5.4% of Kiribati GDP, or AUD 15M (Source: Kiribati contribution to OPOC questionnaire)
[140] UNESCO, 2010. Underwater Cultural Heritage in Oceania.
[141] 2019 State of the Environment Report, Republic of Palau. National Environmental Protection Council (NEPC), Government of Palau: Koror, Palau. 100 pages p17-19

Impacts of COVID-19 on tourism

For highly tourism dependent countries COVID-19 has been particularly harsh on economies who otherwise were relatively sparred on the health front, in particular Cook Islands and French Polynesia[142].

With borders shutdown across the region, revenues generated by tourism have all but come to a halt. In Vanuatu for instance, 70% of tourism workers lost their jobs, and major regional airlines had to let go of significant portion of employees. Cook Islands has suffered a 60% drop in GDP, and Fiji announced increasing debt to GDP from 48.9% prior to the COVID-19 crisis to 60.9%. Many islands in the region are now COVID-19 free (many never got a single case). While some are still reluctant to open their borders, others have taken the option to reopen with more or less safeguards.

Australia and New Zealand envisaged creating a Trans-Tasman travel bubble between the two countries, but in light of new spikes in contamination, both had to rethink this option. New Zealand, Niue and Cook Islands are in discussions for creating a travel bubble among themselves.

The tourism industry in the region is going to take a long time to recover, with some estimates suggesting at least 2 years. In the medium to long term, the regional tourism industry is likely to support the 2020 UNWTO One Planet Vision for the Responsible Recovery of the Tourism Sector[143]. It calls for a responsible recovery of the tourism sector from the COVID-19 crisis founded on sustainability, to build back better, and which can underpin the resilience of the tourism sector. This forced reset is also a formidable opportunity to develop and implement recovery plans that contribute to the achievements of our collective sustainability commitments, including those of the FPO, the SDGs, and the Paris Agreement.

[143] See FORWARD (2020). Pacific Tourism: COVID 19 Impact & Recovery: Sector Status Report: Phase 1B. SPTO and MFAT.

Coastal and Nearshore Extraction

Removal of sand, gravel and rock from the coastal and nearshore areas of islands has been occurring in the region for millennia. Beach sand in Tonga has cultural value to decorate grave sites to the extent that beach sand mining has now depleted beaches along the southeast coast of Tongatapu. The need for sand, gravel and rock (generally referred to as aggregate) results today in major mining activity in all PIF Members.

The principal use of the aggregate is to support infrastructure development in the form of concrete (reinforced, precast or not), cement blocks or as fill for roads and coastal reclamation. Perhaps the best recent example in the region is on Funafuti Atoll in Tuvalu. Through this project, MFAT funded the filling of the borrow pits component only, while the Government of Tuvalu then secured funding to undertake land reclamation at Vaiaku. At the same time separate activity involving substantial reclaimed area "Victoria Park" was established at the Government Centre in Vaiaku. The environmental impacts and monitoring before, during and after the project were essential to the success of the project. As a result, the land area was increased by 8%, there was a marked improvement in visual and smell amenity, waste management and animal husbandry.

Around the region, the quality and durability of aggregate varies greatly and with it the price. It is a high volume, low price commodity. Where quality basalt volcanic rock quarries on land (for example Rarotonga in the Cook Islands and Chuck in the Federated States of Micronesia) are not readily available, then extraction of poor-quality coral reef rock from beaches, reef flats and shallow water/lagoon areas is inevitable. There is no alternate (except importation) for the atoll islands in Kiribati, Marshall Islands and Tuvalu. Kiribati with lack of sufficient land resources established an offshore dredging company that harvest on lagoon shoals and mudflats to compensate severe coastal mining. This approach is currently obliged to strict dredging methods and environmental monitoring responsibilities to ensure less impacts is ensued[144].

[144] One Planet Sustainable Tourism Programme (2020) - One Planet Vision for a Responsible Recovery of the Tourism Sector

In Fiji a recent comprehensive study of the aggregate industry determined its market value between FJD200 - FJD350 million annually. By contrast Government statistics showed the value at around FJD$50 million and of course the subsequent royalty payout to landowners very limited compares with the estimated market value.

Commercial extraction of other materials from the coastal and nearshore areas is widespread throughout the region. Until recently in Fiji, coral sand was dredged from the backreef area in Suva Lagoon, to feed one of the few cement factories in the region. Magnetite iron sands occur in coastal areas close to the Ba, and Sigatoka river mouth/delta areas in Fiji. The former is now being mined and exported. In New Zealand iron sands have been mined for nearly 50 years in the coastal area along the west coast of the North Island south of the Waikato River. The Glenbrook Steel Mill depends on this resource. In Australia the mining of coastal sands for rutile, ilmenite and zircon is a major mining activity, for example along selected areas of the Queensland coast.

Environmental (including Social) Impact Assessment (EIAs) leading to Environmental Management and Monitoring Plans (EMMPs) and their implementation and enforcement are essential for all coastal mining activities. National capacity is often not sufficient.

Deep Sea Mining

The economic potential for mineral deposits on the deep seabed in the region has been known for decades. In 1974 a few Pacific Islands Forum Countries (Fiji, Papua New Guinea, Samoa, Solomon Islands and Tonga) along with New Zealand secured a regional project supported by the UN for the Coordination of Offshore Prospecting in the South Pacific (CCOP/SOPAC) which was over the years to become SOPAC. SOPAC was integrated into SPC following a Leaders decision in 2007. A Deepsea Minerals Project supported by the EU at the time of integration of SOPAC into the SPC did not secure a second phase of funding and closed in 2016. Regional coordination of deep-sea minerals worked since that time has all but ceased. Amongst the outputs from the Project were: a Regional Regulatory Framework and a Regional Environment Framework together with a review of deep-sea minerals in the region.

As demonstrated below, now more than ever, PIF Members may need a regional focal point addressing the issues linked to deep sea minerals which is secure, adequately staffed and well-funded. It is critical such an initiative recognizes the difference between, and the different capacity needs of exploration (identifying prospective areas and marine scientific research) and exploitation (commercial extraction).

There is no mining activity in deep sea areas (greater than 200m water depth) in the region at this time.

Until 2019 Papua New Guinea had for nearly 20 years been progressing to be the first in the region (and the first in the world) as it had issued exploration licenses and ultimately a mining license to Nautilus Minerals to exploit sulphide deposits enriched in gold, silver and base metals from an area of less than one square kilometre on the floor of the Manus Basin at around 1500m water depth. Likewise, a company in New Zealand was progressing new exploration for phosphate at water depths up to 400m on the Chatham Rise but this activity in 2019 did not meet the necessary environmental license approvals.

In conjunction with the 14 island countries coordinated by SOPAC the Metal Mining Agency of Japan carried out deep-sea mineral exploration for 20 years culminating in 2005. Deposits of manganese nodules, massive sulphides and cobalt enriched manganese crust were discovered across the deep-sea floor of the region which has resulted in further work to this date in some EEZs for example Tonga.

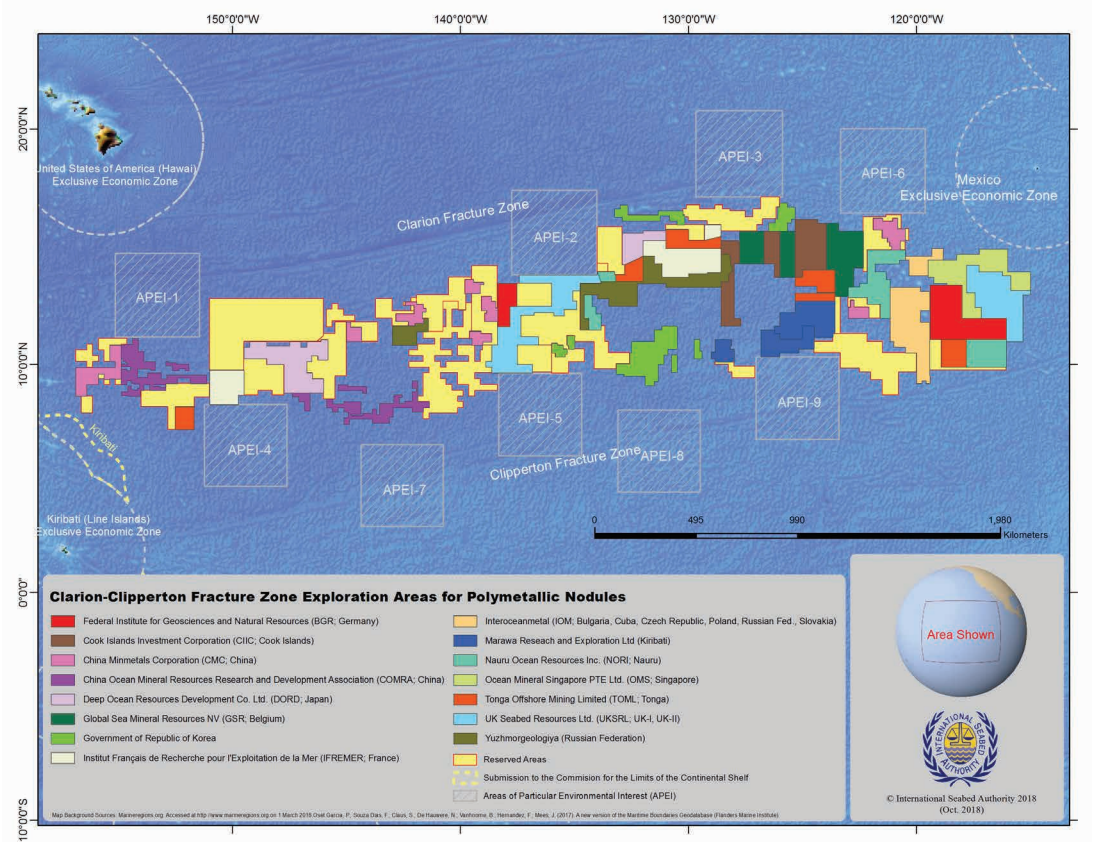
By far the most abundant and potentially economic are the nodule deposits of the Cook Islands EEZ. Three years ago, a tender process for exploration licenses was issued by the Cook Islands Seabed Mineral Authority. This process was planned to be re-mobilized in 2020.

In the seabed outside Countries' jurisdiction, "The Area" and its resources are regulated as part of UNCLOS by the International Seabed Authority (ISA), who is also tasked with ensuring that all humankind benefit in an equitable

manner from the exploitation of these resources. Furthermore, the ISA has the responsibility to ensure effective protection for the marine environment from harmful effects which may arise from activities in the Area[145]. ISA has been operating for 26 years since its establishment under Part 11 of UNCLOS. The development of Regulations for Exploration has been a high priority. The most explored area of the Pacific Ocean is the Clarion Clipperton Zone (CCZ) for polymetallic nodules containing manganese, nickel, copper and cobalt. The CCZ comprise some 4.5 million square kilometers of the Area extending eastwards from and almost contiguous with the EEZ boundary of the Line Islands, Kiribati. Currently there are 14 exploration contracts in the CCZ, of which 4 are sponsored by PIF Members; Cook Island, Kiribati, Nauru and Tonga.

Figure 12:

Clarion Clipperton Zone. Note the proximity to the Kiribati EEZ boundary around the Line Islands in the southwest.



(Source: https://www.isa.org.jm/index.php/map/clarion-clipperton-fracture-zone)

[145]UNCLOS, a.145

In recent years interest in "The Area" north and adjacent to the EEZs of the Federated States of Micronesia and the Marshall Islands have been identified with potential for cobalt-rich-manganese crusts and manganese nodules. Currently there are 5 contracts underway. In recent years, the ISA has increasingly focused its work on the development and completion of Regulations for Exploitation.

Like in many other parts of the world, the prospect of deep sea mining is a contentious issue in our region confronting on the one hand advocates of the precautionary approach and protection of the fragile deep sea environment, and on the other hand, advocates for alternative sources of economic development[146].

PIF Members are aware of this issue and have now enacted national legislations applicable to their EEZs. The four, Cook Island, Kiribati, Nauru and Tonga as sponsoring states in the CCZ have also developed legislations to link with that of the ISA.

The demand for metals worldwide has been growing exponentially. The mineral resources of the seabed and subsoil are seen by some as a potential source to meet the growing demand. Others believe otherwise for example that technological innovation could curve the huge appetite for these minerals[147].

Whether exercising their sovereign rights to explore and exploit resources of their own EEZ (including extended continental shelf as the case may be) or their rights as sponsoring states in "The Area", some PIF Members have started work to collect necessary data and information to determine whether and how deep-sea mining is to go ahead. For these countries, the exploration phase is also an opportunity to support marine scientific research to assist decision-making and the development of comprehensive social and environmental safeguards and measures including by improving understanding of the implications of mining activities on other important economic sectors such as fisheries and other living marine resources and uses[148].

[146] https://kiribati-data.sprep.org/system/files/eia-estat-dredging-project.pdf
[147] UNCLOS, a.145
[148] See 2019 POA outcomes for a summary of the debates.

While exploration is an important tool to decrease uncertainty, the transition to the exploitation phase is a cause of concern for some Countries and stakeholders both in the region and globally. From a financial perspective, the long period, the upfront capital cost of any mining project, the variability in prices of some components, as well as the move to shift to circular metal economy[149] have put in question the feasibility and financial hopes generated by deep sea mining.

Environmental and social issues to ensure protection from harmful effects of exploitation are critical. The development of the standards (mandatory) and guidelines (recommendatory) of the ISA Exploitation Guidelines in their content and their prescriptive modes of implementation, demonstrate the highest levels of concern on all perceived environment and social issues. At the regional level. The Regional Regulatory Framework and the Regional Environmental Framework developed by the Deepsea Minerals Project highlights these concerns.

The application of the Precautionary Approach/Principle and a science-based approach to decision making for deep seabed mineral activities in both national jurisdictions and the Area is paramount. Some ascertain that the exploration phase operationalizes the precautionary approach. Others, on the other hand, prefer to take a break until potential irreversible environment hazards are fully assessed.

Exploration is considered by many as very close to marine scientific research. As we enter the Decade of Ocean Science, exploration of the deep-sea for its contained potential mineral resources with particular interests to many should continue. In that context, some countries, including some in the region (for example Fiji and Papua New Guinea), have called for a 10-year moratorium on deep seabed mining which has been opposed by others. A moratorium (a temporary delay or suspension) is not a ban on the activity. Rather it is giving more time to better understand how much impact (if any) would be acceptable. Past and present human hubris induced damages should have taught us the important lesson of patience and prudence.

[149] See for instance Morris, James. "Tesla's Shift To Cobalt-Free Batteries Is Its Most Important Move Yet". Forbes. 11 July 2020. https://www.forbes.com/sites/jamesmorris/2020/07/11/teslas-shift-to-cobalt-free-batteries-is-its-most-important-move-yet/#4116d66446b4. Consulted on 12 July 2020

Renewable energy

Ocean or marine renewable energy include wave energy, tidal stream, tidal range, ocean thermal energy conversion (OTEC) and salinity gradient technology[150]. Some also include offshore wind energy although the IRENA considers it as part of wind energy technology.

OTEC is a process that can produce electricity by using the temperature difference between the deep cold ocean water and warm tropical surface waters. The Salinity gradient technology created power from the difference in salt concentration between two fluids. Tidal and wave energy converted energy through the force of tides and waves flows.

Despite its huge potential, ocean renewable energy remains an immature technology that is not yet well deployed. Globally, marine renewable energy technologies generated over 530 MW, with only 1 MW in the region, a tiny fraction of the region's mere 26 GW of renewable energy[151]. For the region these figures highlight a paradox: ocean power, in particular wave power, is considered to be only a third of the variability seen in wind power. It can also be forecasted three times further ahead than wind and it is not subjected to day light unlike solar photovoltaic (PV)[152].

Ocean renewable energy could be a realistic medium- to long-term energy option for many islands and coastal areas with the potential to utilize a locally available resource, reduce pressure for space on land and optimize the value of other marine activities (biotechnology and aquaculture). In addition, ocean renewable energy can help in balancing the intermittency of land-based renewable energy technologies in grid-connected energy systems, as well as address the current and future power needs of remote and off-grid communities[153].

Investment in renewable energy is also in line with efforts to mitigate climate change. The 2018 IPCC 1.5°C report states that 70-85% of all electricity must be from renewable sources by 2050 to remain within the 1.5°C warming ceiling. Therefore, investing and deploying these technologies would be in line

[150] 2019 POA outcomes report
[151] This includes, for instance, the decision by Tesla to target low cobalt or cobalt free batteries for their electric vehicles https://www.reuters.com/article/us-autos-tesla-batteries-exclusive-idUSKBN22Q1WC
[152] International Renewable Energy Agency IRENA
[153] Data obtained on the IRENA

with the Leaders vision.
Nevertheless much is still unknown as regards to all possible impacts of ocean renewable energy technologies, some studies have identified issues of concerns, such as environmental impacts, including on iconic species, as well conflicts with other activities.

Furthermore, these technologies, including offshore wind turbines, currently require significant amounts of materials, including rare earth elements, used in the generators. It is estimated that each MW of installed capacity needs 42kg of neodymium and 3,000kg of copper[154]. The development of these renewable technologies will rapidly increase demand for many metals, including lithium, cobalt, copper, silver, zinc, nickel and manganese, rare earth elements (REE) and others. Achieving economies of scale in recycling, reuse of rare earths elements is difficult because of the limited quantity of elements contained, the long lifespan of some products using these elements, and metal separation issues requiring complex and energy-intensive processes. This is obviously a discussion in the context of deep seabed mining.

Only handful of PIF Members have attempted to harvest this power.

Australia is generating over 1,000 MW, mostly wave and tidal power. Interest in wind and other clean energy projects deployed offshore is expected to grow, as technology improves, and costs reduce. The development of offshore clean energy industries has the potential for significant new employment, and billions of dollars of investment, in Australia's coastal economies. The Australian Government is developing a regulatory framework to enable the exploration, construction, operation and decommissioning of offshore wind and other clean energy technologies and associated infrastructure such as transmission, in Commonwealth waters (beyond three nautical miles), including Australia's EEZ. Consistent with the Australian approach to balance competing interests while pursuing the most economically efficient use of the offshore area and its resources, the proposed regulatory framework will

[154] Herner, M et al (2018), Perspectives on a way forward for ocean renewable energy in Australia; Vo 127. Renewable

require comprehensive and detailed consultation throughout the regulatory process (from site identification through to decommissioning) for each development.

New Zealand has also conducted feasibility projects but has not developed them and is currently generating only 0.2 MW of ocean energy. There have also been some studies regarding the potential of offshore wind in New Zealand waters – the Venture Taranaki report.

Kiribati is currently partnering with the Korea Research Institute of Ships and Ocean Engineering (KRISO) for a 1 MW ocean thermal energy conversion (OTEC) facility, which is estimated to potentially contribute a quarter of Kiribati energy needs. The USD20 million project is funded by the Korean Government.

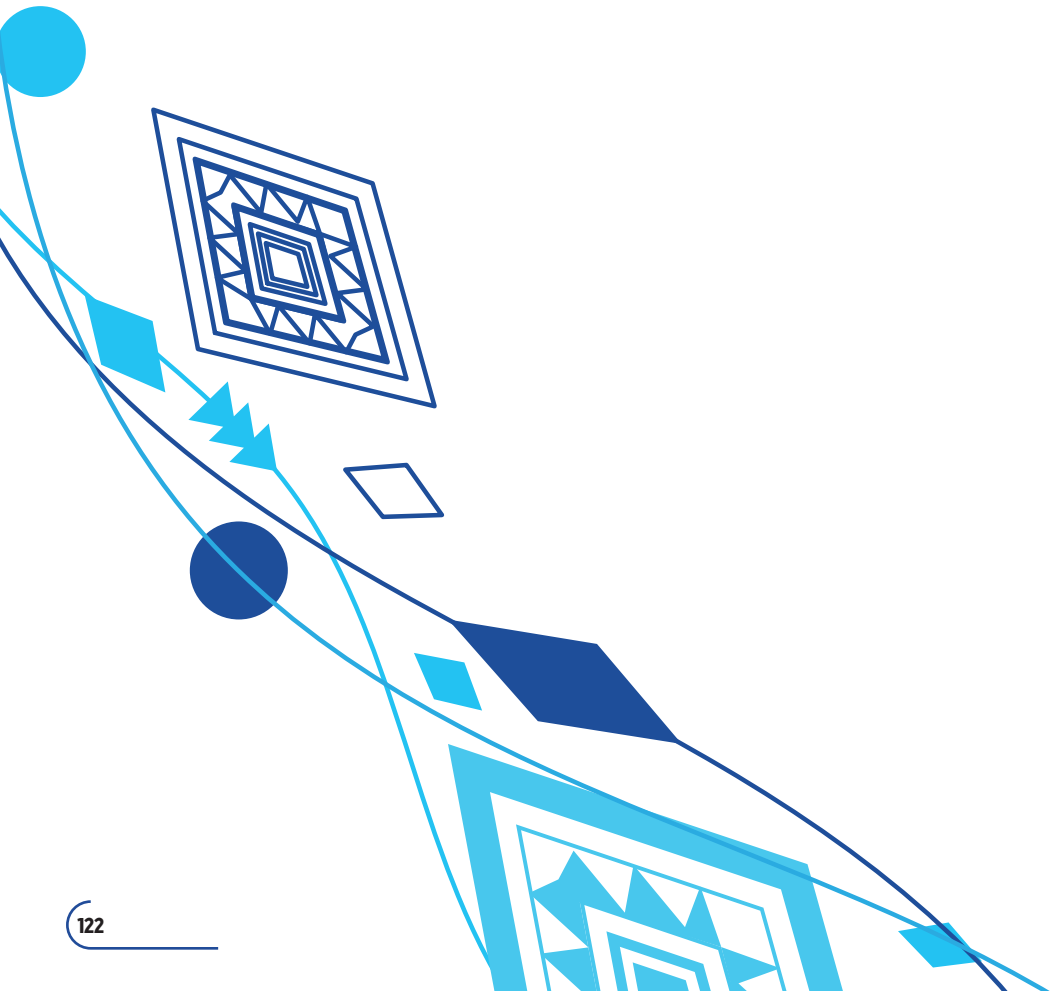
In the **Federated States of Micronesia,** in the early 2010s, the state of Kosrae was planning to install a 1.5 MW wave power capacity to its grid using wave surfer technology from Ocean Energy Industries. Studies had also identified ocean energy, in particular OTEC, as promising although recognizing the costs of the technology were not compatible with the small-scale needs.

In the **Republic of Marshall Islands**: OTEC was proposed as a technology that could contribute to decarbonization efforts and also make it an energy exporter. Feasibility studies for a proposed pilot project showed promise but lack of adequate demand and absence of adequate financial capital have impeded progress.

Feasibility and pilot projects were also conducted in **French Polynesia** for OTEC, offshore wind and wave. None have progressed. However, French Polynesia has been successfully running for over a decade a related technology: sea water air conditioning (SWAC). This is not quite renewable energy technology in so far as it does not generate energy, but substitutes energy generated for air conditioning. It is currently running in two hotels, one in Bora Bora and one in Tetiaroa, representing 3.5 GWh of power, and will also soon be used in the main hospital in Pirae, Tahiti.

Progress in the deployment of marine energy technology remains slow. The technology is still not mature and there is little experience to learn from implementation, including in terms of assessing possible impacts. The immaturity of the technology makes it also less attractive than other renewable energy technologies in so far as it is either not well adapted to the physical constraints of islands, not effective enough in producing energy at low cost, and/or very costly to invest in and implement.

The oceanic nature of the region combined with the diverse scales and topographies of our islands and coasts represent a unique edge in the successful deployment of ocean renewable energy technologies. The region is a formidable ground to develop technologies for diverse scales and contexts to meet the energy demands in a compounded effort to mitigate climate change and further reduce ocean degradation. However, it requires adequate policy and regulatory environment, investing in building and developing the capacity of our people, with robust public and private partnerships and sustainable funding.



Submarine Cables

Information and communication technologies (ICTs) are important tools for contributing towards sustainable development of our region. They ensure that connectivity within our region and with the rest of the world is maintained, if not enhanced. In light of their critical role for our region and our people, Leaders agreed ICTs ought to feature prominently in the 2050 strategy[155].

There are two aspects of ICTs that warrant attention, one is submarine cables and the other satellites. Both these technologies have advanced remarkably in the past 20-30 years and contributed significantly to the speed of communication and sharing of information both within and beyond the region.

Satellite image coverage of the region is near complete with accuracy/ resolution in many instances around 100-200mm. Global Positioning Systems (GPS) and Geographic Information Systems (GIS) are tools which did not exist 30 years ago. The region has benefitted enormously and stands to benefit much more in the years ahead as they will underpin spatially accurate monitoring and evaluation of activities and information sharing.

The ocean floor is crossed by a complex network of submarine cables. Fiber optic cables, in particular, are economic veins that enable our countries to benefit from high speed internet data. During the COVID-19 induced lock downs, for instance, internet-enabled meetings helped advance our regional priorities. However, the many a zoom, skype, or teams meeting and webinar further highlighted the gaps and inequities in ICT coverage within our region.

These networks of cables and the technologies contribute to the sustainable development of our region in many ways. Geographic isolation, sparse population distribution, and lack of funding have all meant that telecommunication services, particularly broadband internet access, have been historically expensive, in particular in the PIF Members. With greater

[155] Greenhill, L, JG Day, A Hughes and MS Stanley (2016), Marine Renewable Energy. Commonwealth Blue Economy Series, No. 4. Commonwealth Secretariat, London. P10

cooperation between business, the global community and local government enabling investment in infrastructure, such as submarine cables and satellite ground stations, fast and affordable access to the internet is now increasing. Fisheries for example could benefit from enhanced application of data collection and monitoring technologies[156].

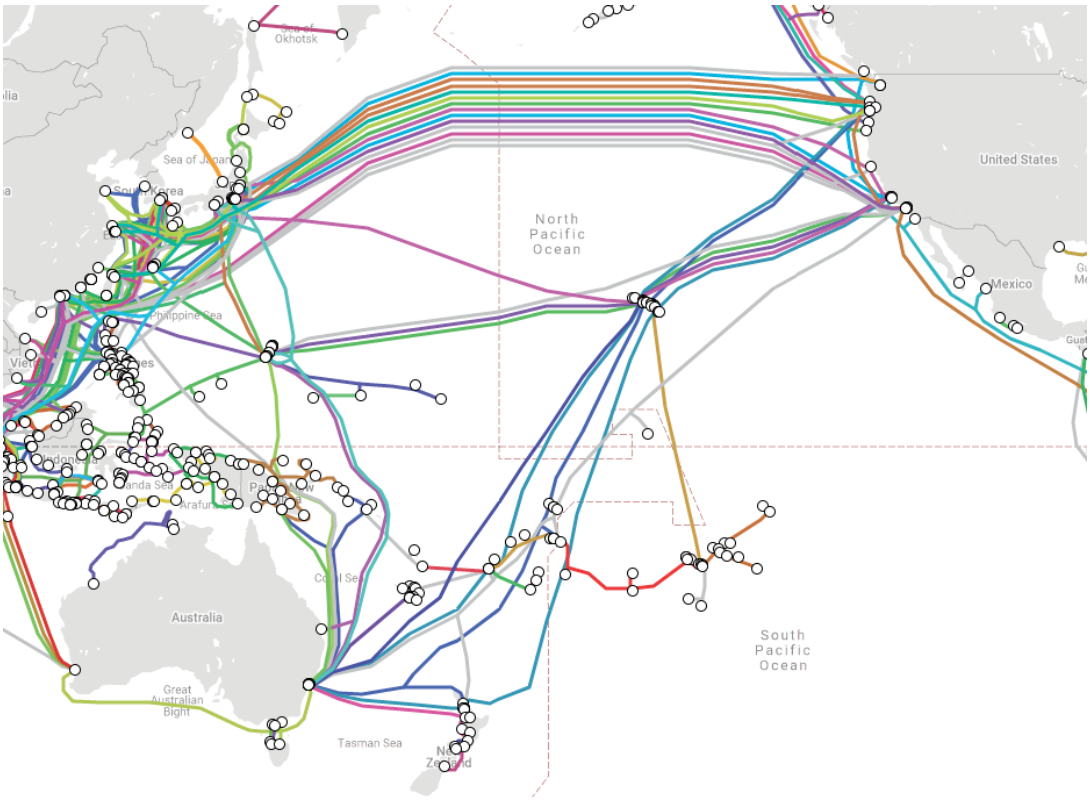
At the same time, while submarine cables are an important asset, they can cause spatial conflicts with other ocean users, particularly the fishing industry, in particular during cable laying and repairing operations. The activity to lay the cables (and eventually to repair them) is conducted either on land, in the territorial sea of a country, in its EEZ, or on the High Seas. However, dropping anchors, marine construction and dredging, scientific and industrial drilling, or coastal mining can damage the cable. The maps of all submarine cables (ICT and power alike) are publicly available including to avoid conflicts of use or threats to the physical integrity of these cables. The publication of such maps can also enable cyber-security and intentional physical attacks, which cause a direct threat to the security of a country's entire internet network.

The main anthropomorphic causes of cables break recorded to date seem to be attributed to anchors (for example in shallow water off Nuku'alofa in Tonga in early 2019), and marine construction and dredging. Little has been assessed as regards cyber-security attacks[157].

There has not been a single documented instance of a submarine cable break due to anthropomorphic causes in maritime areas beyond national jurisdiction. The current overlap between submarine cables and mining areas under contract by the ISA is limited to two, including the Honotua Cable, which crosses a polymetallic nodules contract area awarded to China Minerals Inc in the Clarion Clipperton Zone. The Honotua Cable links Hawaii with islands in French Polynesia[158].

[156] Haugan, P.M., L.A. Levin, D. Amon, M. Hemer, H. Lily and F.G Nielsen. 2019. What role of Ocean-Based Renewable Energy and Deep Seabed Minerals in a Sustainable Future? Washington, DC: World Resources Institute. www.oceanpanel.org/blue-papers/ocean-energy-and-mineral-sources.
[157] See para 9 of 50th PIF Leaders' communiqué
[158] Smith, K. 2014. Implementation of electronic monitoring and reporting in the WCPFC: Assessing possible impacts on employment in Small Island Developing States. Discussion Document. WCPFC

Figure 13:
Submarine cables network in the Pacific Ocean.



(Source : https://www.submarinecablemap.com/)

While relatively minimal, laying of cables can result in environmental impacts. Various techniques have been used to minimise disturbance in particularly sensitive areas. In Australia, cables crossing seagrass beds were placed in narrow slit trenches (400mm wide), which were later replanted with seagrass removed from the route prior to installation. Mangroves are reported to have recovered within two to seven months, and physical disturbance of sandy coasts subject to high-energy wave and tide action is reported to be recovered within days or weeks. Further disturbance will occur if cable failure occurs.

Evaluating the impact on marine animals and plants of this disturbance is not easy, since the area affected, though long, is narrow. In general, the verdict is that the seabed around a buried cable will have returned to its normal situation within at most four years. In waters over 1,000-1,500m deep (where burial is unusual), no significant disturbance of the marine environment has been noted, although any repairs will disturb the plants and animals that may grow on the cable. Such growth is common on exposed cables in shallow calm

water but is limited in water depths greater than 2000m, where biodiversity and macrofaunal abundance are much reduced. Some noise disturbance may be caused by the process of laying cables, but this is not significantly more than would be caused by ordinary shipping[159].

Science, Technology: Research and Development

Understanding the ocean and its processes is critical to formulate adequate policies, frameworks, and measures, and implement projects, activities, and other programmes to effectively conserve, sustainably use and manage its ecosystems and resources.

The role of science and technology in furthering sustainable development has long been recognized regionally as well as internationally. Its role in achieving conservation and sustainable management of the ocean and its resources is also well established and recognized, including in the context of the implementation of the SDGs[160]. Yet, the Pacific Ocean is considered by many researchers as the least investigated, researched and understood ocean, despite increased international interests.[161]

The potential is immense. The development of biotechnologies capitalizing on the ocean genome have the potential to unlock innovative approaches to conservation, anticancer and pandemic treatments, and industrial enzymes[162]. Yet, the capacity to undertake such genomic research remains unequitable worldwide, and in the region as well. This is also true of all ocean related research and development. For most of the Forum island members, marine scientific research is conducted by international teams. This raises the concern on the sharing of benefits and results of the research to the host country. In some countries, for instance, samples are taken out "without a trace of where they are from, where they are going or what they will be used for[163]." This is particularly relevant for countries who have not ratified the Nagoya Protocol. However, even for those that have, and despite support by SPREP in advancing national legislation, there has been little progress in implementation of access and benefit sharing mechanisms on the use of genetic resources in the region[164]. The absence of any framework on access and benefit sharing for the utilization of marine genetic resources in areas beyond national jurisdiction and

[159] ISA technical study 24 p.70-71
[160] ISA technical study 24 p.70-71
[161] United Nations, 2016. First Global Integrated Marine Assessment, chapter 19.
[162] See for instance A/74/70, UNSG report on Oceans and the law of the sea of 25 March 2019; see also UNESCO IOC's Global Ocean Science Report, 2017 (available at: https://unesdoc.unesco.org/ark:/48223/pf0000250428_eng)
[163] A/74/70, UNSG

the freedom of scientific research under UNCLOS also means that additional samples, data and information on regional genetic materials are deposited in ex situ collections, depositories, or in the form of digital sequence data and information. At best these samples can help progress international scientific information. At worst, they can contribute to further gain by outside players at the expense of the country of origin.

Ocean scientific research capacity has a lot of room to grow in our region. Australia is leading in terms of ocean scientists per capita, publications, as well as investment in research and development[165]. Australia spends around AUD9.5 billion per year on science and innovation investments including an estimated AUD450 million annually on marine science[166]. New Zealand spends approximately USD1.6 billion per year on science and innovation investments and a significant amount of this budget has recently been dedicated to marine science and technology. For example, under a multi-year programme (the Marine Environment Platform – part of the Strategic Science Investment Fund awarded to NIWA) in New Zealand is investing over USD80 Million into research which aims to deliver benefits such as increased economic returns from marine resources while maintaining marine ecosystem integrity and biodiversity[167]. Most of the island countries, however, are trailing behind with those with presence of academic and research institutions, including regional institutions such as USP, having better scores than others[168].

Furthermore, only Australia and New Zealand have National Oceanographic Data Centres or Associate Data Units[169]. Regional data and information Centres or portals have recently been developed to address these gaps. The IOC initiative Ocean Hub is showing promising collaboration between regional organizations. Further discussions on how to include other relevant agencies and stakeholders could be beneficial. The OPOC, as mandated by Leaders, collated all Pacific Ocean Initiatives including on portals/data centers in their website. Refer to Annex 9 for OPOC Pacific Ocean Initiatives portal info, along with a compendium of all regional and global ocean information and data portals.

[164] Blasiak, R., R. Wynberg, K. Grorud-Colvert, S. Thambisetty, et al. 2020. The Ocean Genome: Conservation and the Fair, Equitable and Sustainable Use of Marine Genetic Resources. Washington, DC: World Resources Institute. Available online at www.oceanpanel.org/blue-papers/ocean-genome-conservation-and-fair-equitable-and-sustianable-use-marine-genetic
[165] Kiribati contribution to the OPOC questionnaire.
[166] Bagley, M. et al/ 2020. Fact-finding Study on How Domestic Measures Address Benefit-sharing Arising from Commercial and Non-commercial Use of Digital Sequence Information on Genetic Resources and Address the Use of Digital Sequence Information on Genetic Resources for Research and Development. CBD/DSI/AHTEG/2020/1/5
[167] IOC, 2017. Global Ocean Science Report
[168] Australia National Marine Science Plan 2015
[169] New Zealand, 2019. Voluntary National Review.

Table 5:
Pacific SIDS ocean science and capacity snapshot.

2	One Oceanographer employed at the national level in a PIF Member (Solomon Islands) and the other one (Fijian) Senior Lecturer at USP
1	Oceanographic research vessel in the region (Fiji)
0	Pacific Island authors contributed to the 2019 IPCC Special Report on Oceans and Cryosphere
0	Pacific Island authors contributed to the 1st (2016) or 2nd (2020) World Ocean Assessment
5%	Global ocean floor mapped
Unknown	How much of Pacific Ocean floor mapped is unknown. However mapping related activities spread across different initiatives with fragmented datasets e.g. i) ocean floor mapping as part of NIWA[170], NOAA[171] support to Pacific Islands' conservation (PIPA), ii) expeditions as part of Tuna tagging[172] & other commercial fishing iii) channels, wharves, hydrographic and EIA studies iv) Commonwealth Marine Economies Program (CMEP)[173] with Pacific
10	National Ocean Policies (Australia, Cook Is, Fiji (in Draft), New Zealand, Papua New Guinea, Republic of Marshall Islands, Samoa, Solomon Islands, Tonga (in Draft), Vanuatu
4	Marine Genetic Resources laboratory facilities (Fiji, Samoa, Cook Islands, Papua New Guinea)
Unknown	Number of bio-prospecting missions/projects currently underway
73%	% of Pacific Maritime Boundaries completed and deposited with UNCLOS

(Source: SPC; from SPC presentation at BBNJ PIF negotiators meeting in February 2020).

Re-capturing the collective potential of shared stewardship of the Pacific Ocean based on an explicit recognition of our shared ocean identity, ocean geography and ocean resources[174] implies addressing the many challenges facing the ocean, its ecosystems, and resources, as well as maximizing the immense opportunities. This requires access to ocean scientific information and knowledge to deliver relevant and context-appropriate solutions, through technology and capacity. Otherwise, the region will remain mere spectators of the frenetic blue innovation and growth.

[170] No comparative data and information for the entire Blue Pacific membership was available at the time of the report. Estimate from the IOC Global Ocean Science Report.
[171] IOC, 2017.Global Ocean Science Report
[172] https://niwa.co.nz/coasts-and-oceans/research-projects/building-a-complete-map-of-the-worlds-ocean-floor-seabed-2030
[173] https://oceanexplorer.noaa.gov/okeanos/explorations/ex1703/background/pipa/welcome.html
[174] https://tagging.spc.int/

UNCLOS provides for the transfer of marine technology[175]. Yet, implementation in these areas has been limited with an evident disparity between developed and developing States. Partnerships and capacity building programmes exist and are provided by partner countries, regional organisations, international organisations, and other stakeholders alike (Annex: 3). While such projects have benefited recipients, their dependence on short term funding and lack of a long term and collective strategy has not helped the region in filling the data, information and knowledge gaps.

Furthermore, there has been little investment at the regional or national levels on innovation[176]. Innovation must be encouraged to design solutions for global, regional, and local challenges. Innovation is not necessarily synonymous with complex and expensive technologies. Innovation could also be in the processes used. Innovation could also be looking to the past to enhance the present and future technologies. Traditional techniques and skills could be further explored, with the prior and informed consent of the relevant holders of such traditional techniques. (for example, Marshall Islands navigation skills). Innovation can come from biomimetics (the mimicking of natural processes or characteristics).

The main impediment to developing research and innovation relates to funding. Building and developing the capacity requires adequate and sustained funding. Regional cooperation is critical to address the gaps. Regional organizations must also cooperate and coordinate among each other, based on their mandates, so as to not compete, duplicate or leave gaps. Forum island members can cooperate, together as well as with regional organizations. The development of regional capacity for research, development, and innovation must involve national governments and their national stakeholders, in particular the private sector. The development of public private partnerships framed around common sets of values should be encouraged, so must partnerships with international partners.

[175]https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/769201/Commonwealth_Marine_Economies_Programme_-_Fiji_Country_review.pdf
[176] Statement by Prime Minister of Samoa, Tuilaepa Sailele Malielegaoi. UN Oceans Conference, 5th June 2017, New York

With resources secured, identifying the needs, strengths, and gaps is important. Elaborating needs assessments at the regional and national level will help identify where to invest resources in capacity building and development, and what types of technology will be most appropriate.

Increased regional collaboration in this domain could shift the scale in pulling resources. There must be a political willingness, at the highest level, to invest in our people and in innovation. Leading the region to a secure and prosperous future will require a skilled workforce and decisions based on the best available scientific information for the benefit of the region and its people.

The UN Decade of Ocean Science[177]

The UNGA proclaimed the UN Decade on Ocean Sciences to be held from 2021 to 2030. This Decade will provide a common framework to ensure that ocean science can fully support countries' actions to sustainably manage the Oceans and more particularly to achieve the 2030 Agenda for Sustainable Development. It represents a valuable opportunity to improve research investment and activities in the region. During the Planning Phase between 2018 and 2020, the IOC prepared and coordinated the development of an Implementation Plan for the Decade to contain a science plan, a capacity development plan, a resource mobilization plan, and a communications and engagement plan.

In the region, SPC has taken on the coordination role for the preparations and planning of the UN Decade in the region. As such, they have organized a preparatory workshop in July 2019 to identify priorities for the region against the global priorities. apart from capacity building, the Pacific consultations on the UN Decade on Ocean Science held in July 2019 identified the recognition of traditional knowledge as a complement to science, and the need for this to be an area that the region should promote to build capacity, awareness, and utility of other knowledge systems. The UN Decade of Ocean Science serves as an opportunity to build the narrative of traditional knowledge within the region and understanding its uses alongside modern science. However, caution was raised that many countries do not have safeguards to protect traditional

[177] UNCLOS, part XIV

knowledge and owners' interests. The need for engaging with traditional knowledge holders was highlighted to ensure that decisions pertaining to the consideration of traditional knowledge does not undermine the interest of these owners.

Furthermore, the 2019 meeting of the POA identified the UN Decade of Ocean Science as a good opportunity, amongst others, to increase understanding and address issues related to invasive species; climate mitigation in transport; environmental impact of shipping; sustainable tourism around whales and invasive species[178].

The Decade will be officially launched in May 2021 in Berlin. It is guided by the vision "the science we need for the ocean we want". Its mission is to "catalyse transformative ocean science solutions for sustainable development, connecting people and our ocean". Seven outcomes describe the "ocean we want" at the end of the Ocean Decade (see schematic below). These outcomes are mutually supportive of global policy frameworks, including the SDGs, UNFCCC, CBD, BBNJ, Sendai, and SAMOA Pathway.

[178] See for instance the 2018 Pacific Community results report, including Foreword from Dr Colin Tukuitonga, former Pacific Community Director-Genera: "Many of our programmes are not funded in ways that encourage and support innovation from proof of concept to scale. However, we have had some support from the Government of New Zealand through the Incubator Fund to kick-start pilot projects. We have also trialled an internal innovation fund, using our core funding, to support exploration of several great ideas. New challenges require new thinking and it is important for SPC's vitality as a development organisation that innovation is supported and funded."

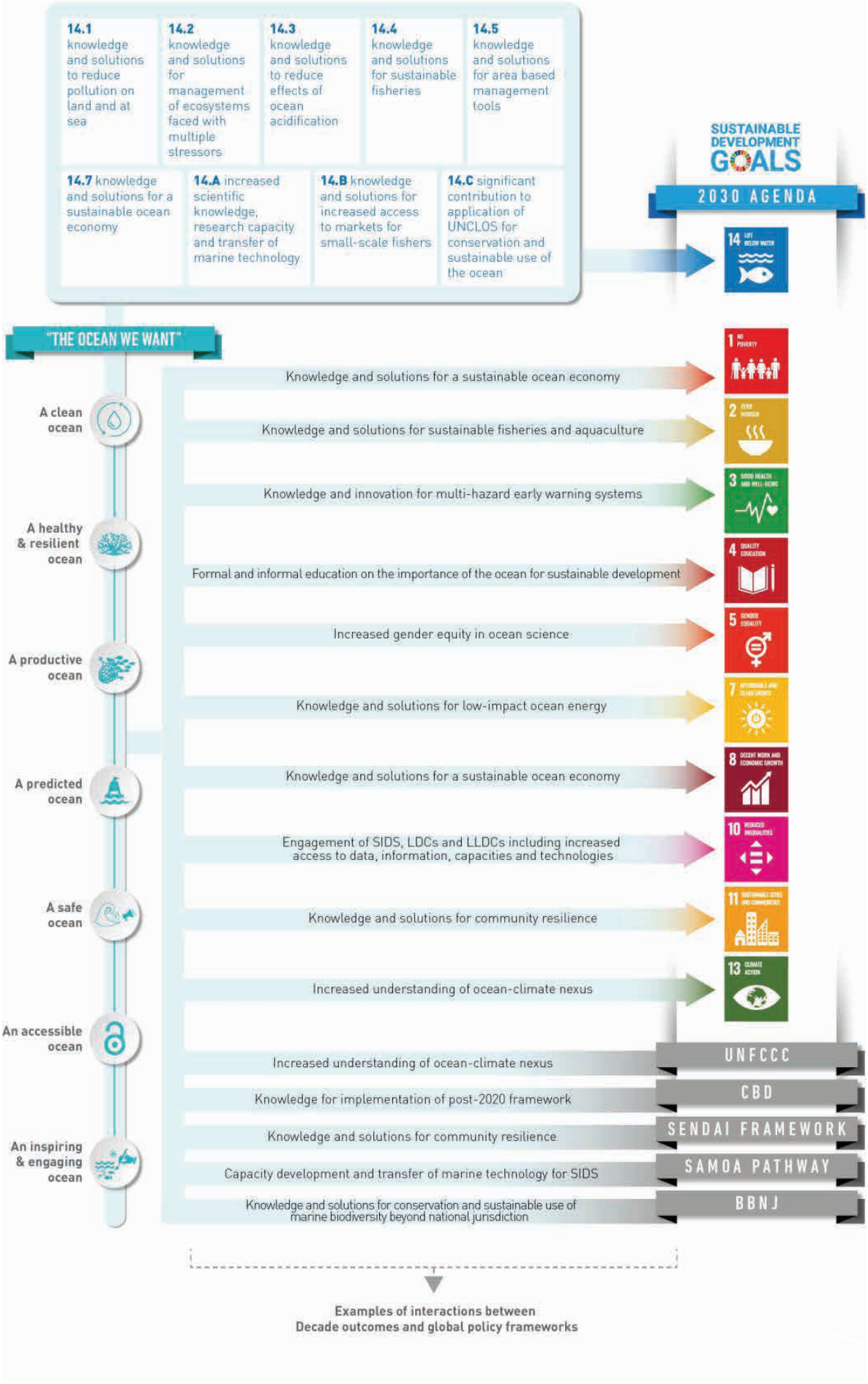

14.1 knowledge and solutions to reduce pollution on land and at sea
14.2 knowledge and solutions for management of ecosystems faced with multiple stressors
14.3 knowledge and solutions to reduce effects of ocean acidification
14.4 knowledge and solutions for sustainable fisheries
14.5 knowledge and solutions for area based management tools
14.7 knowledge and solutions for a sustainable ocean economy
14.A increased scientific knowledge, research capacity and transfer of marine technology
14.B knowledge and solutions for increased access to markets for small-scale fishers
14.C significant contribution to application of UNCLOS for conservation and sustainable use of the ocean
SUSTAINABLE DEVELOPMENT GOALS
2030 AGENDA
"THE OCEAN WE WANT"
A clean ocean
A healthy & resilient ocean
A productive ocean
A predicted ocean
A safe ocean
An accessible ocean
An inspiring & engaging ocean
Knowledge and solutions for a sustainable ocean economy
Knowledge and solutions for sustainable fisheries and aquaculture
Knowledge and innovation for multi-hazard early warning systems
Formal and informal education on the importance of the ocean for sustainable development
Increased gender equity in ocean science
Knowledge and solutions for low-impact ocean energy
Knowledge and solutions for a sustainable ocean economy
Engagement of SIDS, LDCs and LLDCs including increased access to data, information, capacities and technologies
Knowledge and solutions for community resilience
Increased understanding of ocean-climate nexus
Increased understanding of ocean-climate nexus
Knowledge for implementation of post-2020 framework
Knowledge and solutions for community resilience
Capacity development and transfer of marine technology for SIDS
Knowledge and solutions for conservation and sustainable use of marine biodiversity beyond national jurisdiction
UNFCCC
CBD
SENDAI FRAMEWORK
SAMOA PATHWAY
BBNJ
Examples of interactions between Decade outcomes and global policy frameworks

Photo Credit: Pacific Islands Forum Secretariat (PIFS)

Part 3: Ocean Governance and Commitments

3.1 Mapping of Hierarchies and Regional Ocean Policies

Institutional hierarchy and key players in the Pacific Ocean governance framework

The architecture of ocean governance in the region is well established and has gone through several consultations and reforms. This was attributed to vested interests in the ocean resources by peoples of the Pacific Island Countries and Territories, as well as the commitments of Forum Leaders and other key players.

The Pacific Islands Forum is the highest regional institution in the Pacific which meet annually to develop collective responses to regional issues, including regional ocean priorities. All decisions made by Forum Leaders are considered as highest-level policies/decisions. The delivery on Forum Leaders' oceans decisions is carried out by the Pacific Islands Forum Officials Committee (FOC). This is an executive committee that is composed of one representative of each member of the Forum. The FOC has the authority to give general policy directions to the Secretary General, who is also the Pacific Islands Ocean Commissioner and to make reports and recommendations to the Forum on any responses to ocean issues.

The Council of the Regional Organizations of the Pacific (CROP) was established by the Forum in 1988 (formerly SPOCC, South Pacific Organisations Coordinating Committee) to improve cooperation, coordination and collaboration between regional intergovernmental organizations. CROP organisations also report directly to their Governing Councils (whom the majority of them have membership in almost all regional organisations). The Marine Sector Working Group is the coordination vehicle for CROP Heads on marine and ocean issues. The key CROP Agencies in the Marine Sector Working Group have respective mandates and responsibilities on ocean affairs (refer to Annex 3 for CROP organisations' mandates and roles on ocean). The Secretary General of the Pacific Island Forum who is ad interim Pacific Ocean Commissioner, chairs the CROP and coordinate work program through their annual CROP Work Agenda. Figure 14 (non-exhaustive) attempted to sketch this complex regional architecture. Section 4.2 on engagement at a regional level also outline details on relationships.

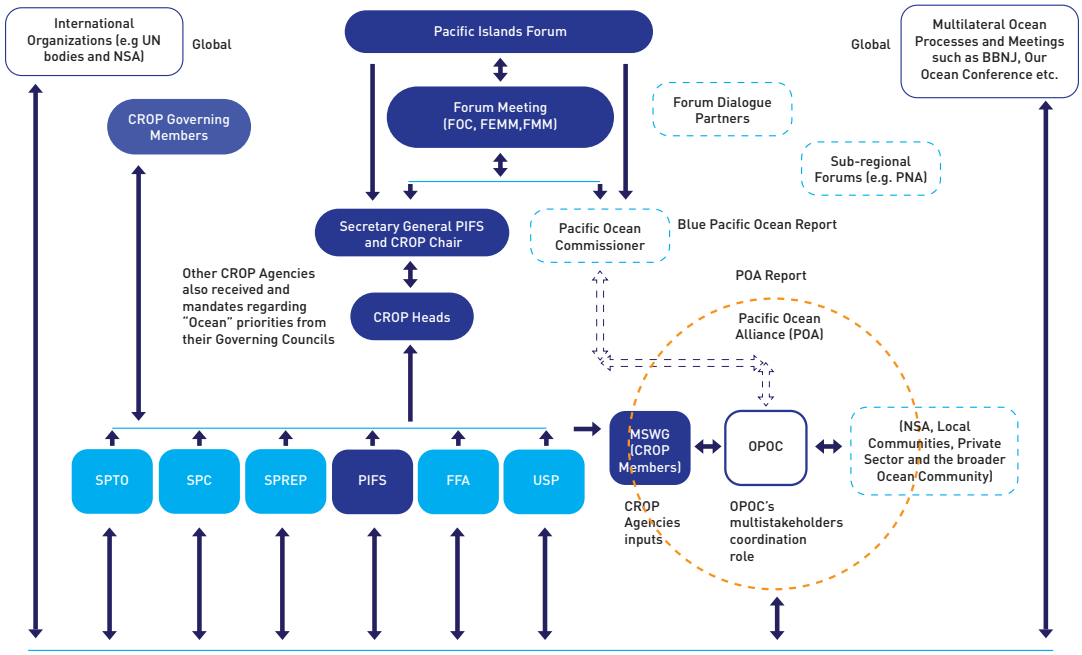
There are also sub-regional arrangements on fisheries such as Parties to the Nauru Agreement as well as the dialogue partners who are also part of the overall ocean governance.

Additionally, the Pacific Ocean Commissioner, the dedicated Office of Ocean Commissioner (OPOC), and the Pacific Ocean Alliance (POA) were established to further improve ocean governance through connecting all ocean players, coordinating the implementation of integrated ocean management and cross-sectoral ocean discussions, and provide high-level attention to ocean priorities and processes in the Pacific.

Photo Credit: Pacific Islands Forum Secretariat (PIFS)

Figure 14:

Institutional arrangement of the key actors playing role on planning and decision making on ocean issues in the Pacific region.



In essence, the above figure captures the status quo in term of the hierarchy and inter-linkages among the different actors who are involved in establishing ocean mandates, decisions, set the agenda including the processes of implementing those various ocean priorities in the region.

The Forum Leaders and the different regional organisations have progressively established ocean policies that govern the different priorities of our region. There are also global commitments that are directly related to ocean priorities and these become the parallel source of inspiration for implementing these ocean policies and actions.

The PIF Members have acceded to or ratified many multilateral agreements and therefore are very well positioned in terms of their representation and influence in these key multilateral processes. There are also regional agreements that have demonstrated their solidarity on specific issues (e.g. Rarotonga Treaty on Nuclear Zone) whilst other regional agreements are still yet to be tested. Refer to Annex 4 for listing of Countries and their membership in multilateral agreements and other ocean related instruments.

Ocean policies and their inter-relationships with other key regional policies

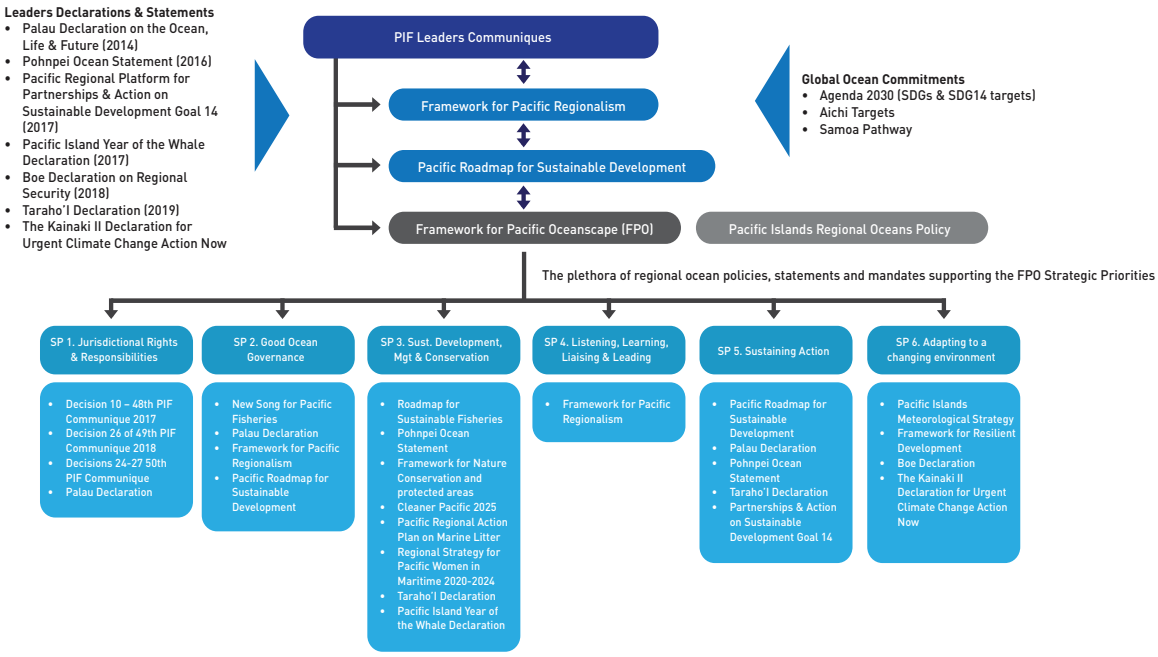
In the regional context, the inter-play of key regional ocean policies is imperative for cohesion and a coordinated regional approach.

The policy relationship hierarchy for ocean priorities is usually aligned to the Leaders' mandates issued annually through their Communiques and political Declarations/Statements. The policy frameworks such as the Framework for Pacific Regionalism (FPR), the Blue Pacific narrative and the overall Pacific Sustainable Development Roadmap; provide high-level guidance in terms of regional agenda setting and regionalism priorities. The Framework for Pacific Oceanscape (FPO – represents the ocean sector priorities) should align and complement those overarching regionalism policies. Since most PIF Members are affiliated with some global agreements and declarations, those global and regional instruments become the political inspirations, catalysts and entry points for the implementation of regional ocean priorities.

Figure 15 below demonstrates the key regional policies discussed and their relationships. The clear pattern is the complexity in implementing the tiered horizontally and vertically complex and competing policies. The alignment of FPO Strategic Priority Actions indicates that weak linkages to FPO Strategic Priority 4 on Listening, Learning, Liaising & Leading. Evidently this is an area that requires a deep understanding of what it means for regionalism, practicing the Pacific Way, and further operationalising the Blue Pacific narrative and how it should be further progressed.

Figure 15:

The hierarchy and linkages of key regional ocean policies, political declarations and global commitments



Compendium of key ocean policies at play (Annex 5)

Annex 5 presents the listing of ocean policies in the region grouped in four categories: (i) Leaders and High-Level Regional Ocean Declarations; (ii) Overarching Regional Ocean Policies; (iii) Sectoral Regional Ocean Policies and; (iv) Specific Leaders Mandates for Ocean Priority. These policies are featured also in the policy relationship hierarchy chart above. The region has punched beyond its weight in terms of regional ocean policies.

Ocean themetic area/issue	Regional Ocean Policy/Specific Mandate	Actors Involved
Marine pollution	1. Decision 9 - Forty-eight Pacific Islands Forum Communique, 2. Cleaner Pacific 2025, 3. Pacific Regional Action Plan on Marine Litter	SPREP, SPC, OPOC, USP WWF
Manage, protection, conserving and restoring marine and coastal ecosystems	1. 2C & 3A Framework for Pacific Oceanscape, 2. Palau Declaration on ''The Ocean, Life and Future'' 2014 3. Framework for Nature Conservation and Protected Areas in the Pacific Islands Region 2014-2020 4. New Song for Pacific Fisheries 2015	SPREP, IUCN, PIFS, OPOC, SPC, FFA, USP

Ocean acidification	1. Decision 4 & 6 - Pohnpei Ocean Statement: A Course to Sustainability	SPREP, USP
Sustainable fisheries	1. Regional Roadmap for sustainable Fisheries 2015 2. New Song for Pacific Fisheries 2015 3. Standing priority item of annual Pacific Island Forum Leaders meeting	FFA, SPC, PIFS, CI, LMMA, WCS, USP
Ocean-based economies	1. 3A, 5A-5C Framework for Pacific Oceanscape, 2. Regional Framework for Deep-Sea Minerals Exploration and Exploitation 2. Regional Strategy for Pacific Women in Maritime 3. Tarahoi'I Declaration	OPOC, FFA, CI, SPC, USP, SPREP
Scientific knowledge, research and marine technology	1. 4A Framework for Pacific Oceanscape, 2. Decision 4 - Pohnpei Ocean Statement: A Course to Sustainability	USP, SPC
Implementation of UNCLOS	1. Decision 1A - Framework for Pacific Oceanscape	PIFS, SPC, FFA
Leveraging inter-linkages between SDG14 & other Goals of 2030 Agenda	1. Decision 14 of 48th Pacific Islands Forum Communique 2017, 2. The Pacific Roadmap for Sustainable Development	PIFS, SPC, SPREP, FFA, UNDP,
Sustainable Maritime Transport	1. Regional Strategy for Pacific Women in Maritime (2020-2024)	SPC
Maritime Boundaries, Impacts of SLR	1. Decision 1A & 1B – Framework for Pacific Oceanscape, 2. Decision 10 – 48th Pacific Islands Forum Communique 2017, 3. Decision 26 of 49th Pacific Islands Forum Communique 2018, 4. Decisions 24-27 50th Pacific Islands Forum Communique	SPC, OPOC, PIFS, FFA, GRID-ARENAL, Australia AG, Commonwealth
Manage high sea resources BBNJ	1. 3C – Framework for Pacific Oceanscape, 2. Decision 13 of Palau Declaration on ''The Ocean, Life and Future'' 2014, 3. Decision 10 of Pohnpei Ocean Statement: A Course to Sustainability 4.. Decision 28 of 49th Pacific Islands Forum Communique 2018	OPOC, PIFS, FFA, USP, SPC, SPREP
Marine Spatial Planning/Integrated Ocean management	1. 3A, 3B – Framework for Pacific Oceanscape	SPREP, IUCN, GIZ
Ocean-Climate nexus	1. Decision 19(viii) of Kainaki II Declaration for Urgent Climate Action Now	PIFS, SPREP, OPOC, SPC, USP
Community marine managed areas	1. 3A, 4B – Framework for Pacific Oceanscape, 2. Framework for Nature Conservation and Protected Areas in the Pacific Islands Region 2014 -2020	SPREP, IUCN, LMMA, CI, WCS, WWF, USP
Marine & Coastal Tourism	1. Decision 11 of 42nd Pacific Islands Forum Leaders Communique	SPTO, SPREP, USP
Oceans Accounts and Values	None	GIZ, IUCN, UNESCAP, SPREP, OPOC, FFA

Marine Renewable Energy	None	SPC, SPREP, USP
Ocean Geopolitics	1. Framework for Regionalism 2. Decision 5-7 of 50th Pacific Islands Forum Leaders Communique to develop 2050 Strategy for the Blue Pacific Continent	USP, SPC
Global Ocean Observation	1. Decision 9 - Forty-eight Pacific Islands Forum Communique, 2. Cleaner Pacific 2025, 3. Pacific Regional Action Plan on Marine Litter	SPREP, SPC, OPOC, USP WWF
Manage, protection, conserving and restoring marine and coastal ecosystems	1. 2C & 3A Framework for Pacific Oceanscape, 2. Palau Declaration on ''The Ocean, Life and Future'' 2014 3. Framework for Nature Conservation and Protected Areas in the Pacific Islands Region 2014-2020 4. New Song for Pacific Fisheries 2015	SPREP, IUCN, PIFS, OPOC, SPC, FFA, USP
Blue Carbon	1. Regional Roadmap for sustainable Fisheries 2015 2. New Song for Pacific Fisheries 2015 3. Standing priority item of annual Pacific Island Forum Leaders meeting	FFA, SPC, PIFS, CI, LMMA, WCS, USP
Ocean Geopolitics	1. 3A, 5A-5C Framework for Pacific Oceanscape, 2. Regional Framework for Deep-Sea Minerals Exploration and Exploitation 2. Regional Strategy for Pacific Women in Maritime 3. Tarahoi'I Declaration	OPOC, FFA, CI, SPC, USP, SPREP
Ocean ICT	1. 4A Framework for Pacific Oceanscape, 2. Decision 4 - Pohnpei Ocean Statement: A Course to Sustainability	USP, SPC

The ocean themes captured in the blue box above were the 8 proposed clusters for thematic dialogues of the upcoming 2nd UN Ocean Conference. The list began from marine pollution up to leveraging inter-linkages between SDG14 and other Goals.

The rest of the ocean themes in the green boxes refer to new and emerging areas which are primarily advocated by OPOC and other ocean stakeholders in the region. These are the BBNJ, Ocean Accounts, Geopolitics, Maritime Transport, Integrated Ocean Management – some of which are not framed or governed by any policy.

The inter-play of the ocean policies and the role of institutions progressing them are crucial considerations in the ocean governance framework.

Lessons from a Research on the analysis of regional ocean policy inter-linkages

Policies do not exist in isolation but are part of a policy nexus which includes a range of levels from the over-arching high-level policies to specific sectoral policies.

The research that analysed the interlinkages of Pacific regional ocean policies[179] concluded that there is a robust core to regional ocean-related policy in the Pacific formed around the triumvirate of The Blue Pacific, FPO and the Palau Declaration. However, there are opportunities for further fusing of a broader suite of regional narratives into the ocean, especially regionalism (sensu FPR) and resilience (sensu FRDP).

The present regional policy-nexus for the ocean remains robust, however with considerable inertia behind the ocean agenda and the growing dialogue on blue economy, there may be a need for updating components of the policy narrative in future years.

Within the ocean policy space there are presently possibilities for rational review, which could include policy retirement, embedding of expanding sectors to reduce fragmentation and increased coherence of ocean with key regional development themes. Refer to Annex 8 for more information on this analysis.

[179] This analysis was carried out under the Global Challenges Research Fund - One Ocean Hub, by Pierre Mazzega (CNRS, University Jean Jaurès, France), Claire Lajaunie (INSERM, University Aix-Marseille, France), Jeremy Hills (USP) & Payal Maharaj (USP).

3.2 Status of Implementing Ocean Policies

With a high plethora of ocean policies and very dynamic system of reporting, the status of progress is reported through: (i) analysis of ocean initiatives; (ii) analysis of the 2017 UNOC Countries-Lead Voluntary Commitments; (iii) SDG14 targets Progress Wheels and; (iv) FPO Report Card 2020.

It then highlights key milestones/achievements in terms of conserving/ managing our Blue Pacific Ocean and strategically positioning the Pacific on Ocean finance mechanisms.

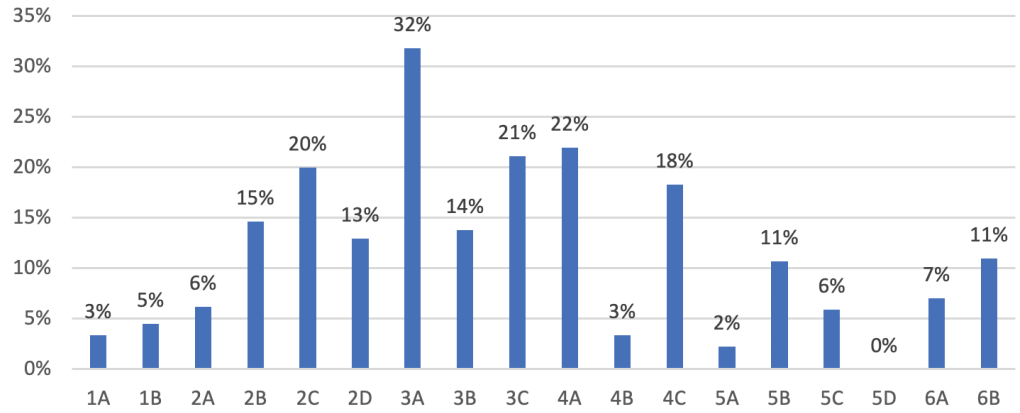
Ocean initiatives and commitments

In addition to taking stock of what has been done to interrogate the progress, the Palau Declaration endorsed by Leaders in 2014 also called for support, to maintain a comprehensive register of ocean initiatives to assist with accelerating actions and individual country report.

The ocean space is getting crowded and contested with development partners and others now aligning their investments with the ocean priorities in general, in addition to the important fisheries sector. In a recent analysis done by OPOC there are about 600 ocean initiatives that were placed against key strategic ocean priorities. The findings in this summary graph below does not necessarily infer a linear indication of progress (of ocean policy implementation) or the status of the ocean. There are uncertainties with the effectiveness of project deliveries, their impacts and outcomes which cannot be factored in. However, this summary should provide some insights in terms of the; (i) flow of investments; (ii) areas of interest for initiatives and; (iii) indication of ocean actors congregation around each ocean priority. Nonetheless, this summary provides guidance on the capacity gaps that need to be addressed and/or ocean priorities for future programming.

Figure 16:

Distribution of the volume of ocean initiatives in the region against the priorities of the FPO.



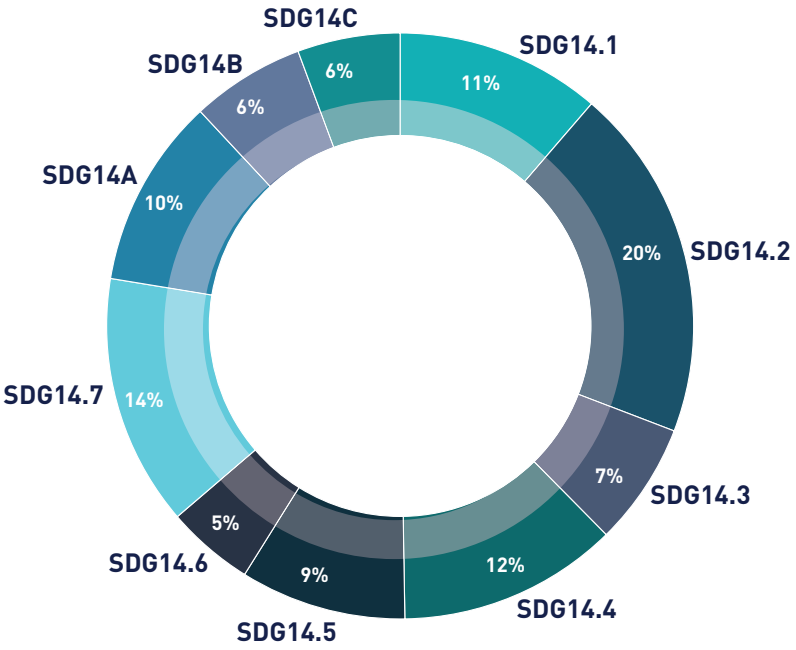
1A	PICS formalise maritime boundaries and secure rights over their resources
1B	Regional effort to fix baselines and maritime boundaries to ensure the impact of Climate change change and sea level rise does not result in reduced jurisdiction of PICTs
2A	Leaders mandate a strengthening of the regional institutional framework for ocean governance and policy coordination
2B	Foster partnerships to integrate and implement ocean priorities in the pacific plan and other relevant regional and international instruments
2C	PICTs incorporate sustainable use and development of coastal and ocean policies in national development policy and planning
2D	PICTs design and/or consolidate clear coordinated institutional mechanism for integrated ocean and coastal management
3A	PICTs implement integrated coastal resource management arrangements drawing on the strengths and traditions of community, district, provincial and national levels of government to achieve sustainable island life
3B	PICTs explore and build on marine spatial planning mechanisms for improved EEZ management to achieve economic development and environmental objectives
3C	Regional intergovernmental bodies explore and build on approaches to conserve and manage high seas resources and deep-sea ecosystems for the common good
4A	Facilitate processes that utilize existing knowledge and results in needs driven information acquisition and targeted capacity building for achieving policy and management objectives
4B	Influence international and regional ocean priorities, decisions and processes through reclaiming the pacific way and establishing a high-level representation on oceans
4C	Connecting people and places for sharing, learning and action

5A	PICTs to ensure cost-effectiveness of management approaches as a priority step towards sustainability of financing
5B	PICTs incorporate consideration of the economic development benefits of sustainable management of coastal and marine resources in decisions affecting national development
5C	Explore and test financing mechanisms to support implementation of ocean priorities at regional and national level
5D	Enhance donor harmonization and aid effectiveness to support implementation of ocean priorities at regional and national level
6A	Identify a centralized mechanism to assess emerging issues, manage risks and explore opportunities
6B	Ensure environmental and Climate change adaptation and mitigation are appropriately incorporated into sustainable development, conservation and governance actions

There are not many initiatives on strategic action priority 5D; which is on donor harmonization and coordinated implementation. Irregular alignment of ocean initiatives to FPO implies that its overall vision may not, to date, have been achieved.

Figure 17:

Distribution of the volume of ocean initiatives in the region against the SDG14 Goals.



SDG14 Targets

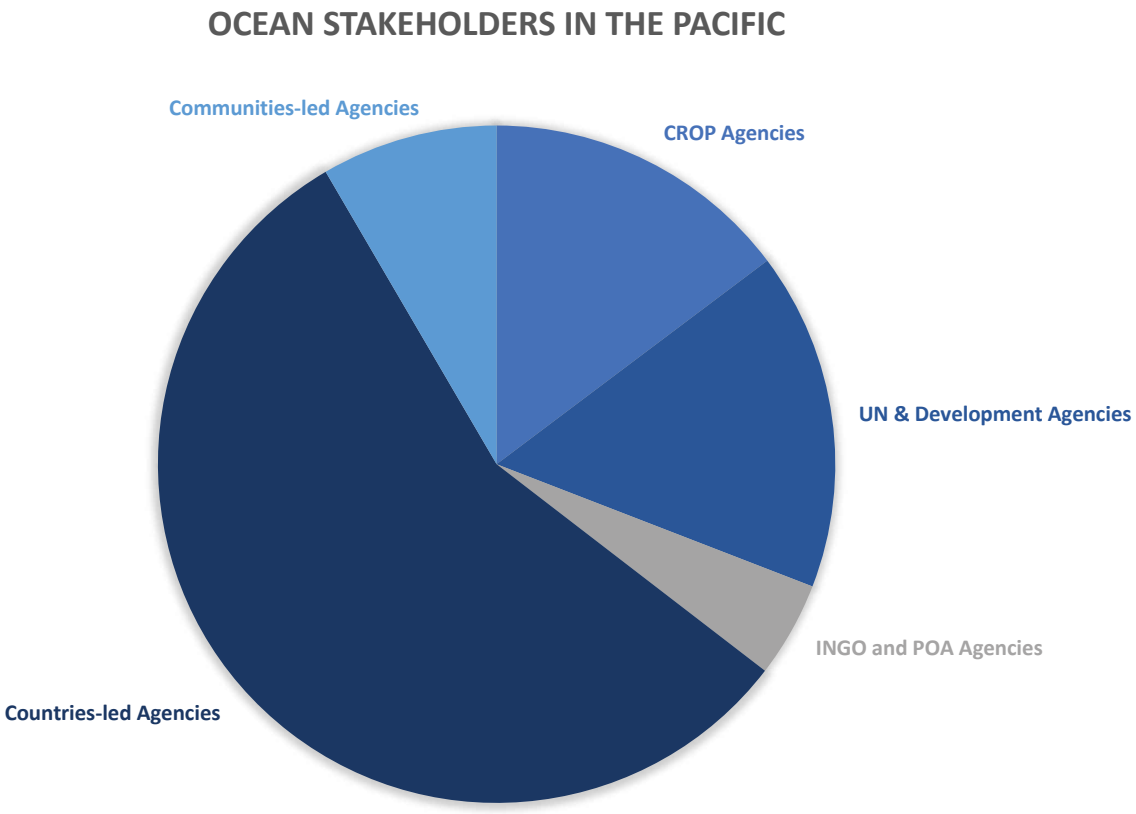
SDG14.1	By 2025, prevent and significantly reduce marine pollution of all kinds, particularly from land-based activities, including marine debris and nutrient pollution
Indicator 14.1.1	Index of coastal eutrophication and floating plastic debris density
SDG14.2	By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration, to achieve healthy and productive oceans
Indicator 14.2.1	Proportion of national exclusive economic zones managed using ecosystem-based approaches
SDG14.3	Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels
Indicator 14.3.1	Average marine acidity (pH) measured at agreed suite of representative sampling stations
SDG14.4	By 2020, effectively regulate harvesting, and end overfishing, illegal, unreported and unregulated (IUU) fishing and destructive fishing practices and implement science-based management plans, to restore fish stocks in the shortest time feasible at least to levels that can produce maximum sustainable yield as determined by their biological characteristics
Indicator 14.4.1	Proportion of fish stocks within biologically sustainable levels
SDG14.5	By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on best available scientific information
Indicator 14.5.1	Coverage of protected areas in relation to marine areas
SDG14.6	By 2020, prohibit certain forms of fisheries Subsidies which contribute to overcapacity and overfishing, and eliminate Subsidies that contribute to IUU fishing, and refrain from introducing new such Subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the WTO fisheries Subsidies negotiation
Indicator 14.6.1	Progress by countries in the degree of implementation of international instruments aiming to combat illegal, unreported and unregulated fishing
SDG14.7	By 2030 increase the economic benefits to SIDS and LDCs from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism
Indicator 14.7.1	Sustainable fisheries as a proportion of GDP in Pacific Islands and Territories
SDG14.A	Increase scientific knowledge, develop research capacities and transfer marine technology taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries, in particular SIDS and LDCs
Indicator 14.A.1	Proportion of total research budget allocated to research in the field of marine technology

SDG14.B Indicator 14.B.1	Provide access of small-scale artisanal fishers to marine resources and markets Progress by countries in the degree of application of a legal/ regulatory/policy/institutional framework which recognizes small-scale artisanal fisheries
SDG14.C	Ensure the full implementation of international law, as reflected in UNCLOS for states parties to it, including, where applicable, existing regional and international regimes for the conservation and sustainable use of oceans and their resources by their parties

Ocean initiatives are skewed towards implementation of SDG14.2 which is sustainable management approaches for a healthy and productive ocean. The rest of SDG14 targets are equally important and so there must be balance and strategic guidance in terms of guiding and programming future initiatives.

Figure 18:

Proportion of different types of stakeholders involved in the implementation of ocean initiatives. Refer to OPOC Regional Ocean Initiatives Portal different stakeholders - https://regional.opocbluepacific.net/



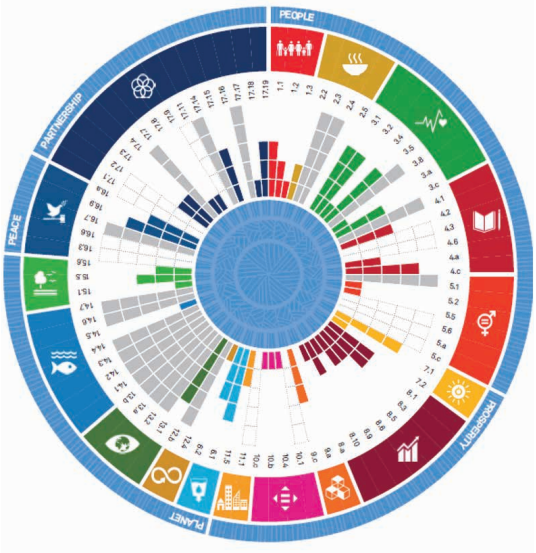
2017 UNOC PIF Member-led Voluntary Commitments and their progress overview

A total of 105 Voluntary Commitments led by PIF Members, and out of these; **2%** have No Data meaning progress is not yet known, **71%** are listed as underway and still progressing, while **27%** have been successfully completed. The voluntary commitments progress for the PIF Members indicate a satisfactory performance (large proportion of registered commitments were on-going initiatives) although a very low rate of delivery. Refer to Annex 2 for the overview of the progress of these Voluntary Commitments.

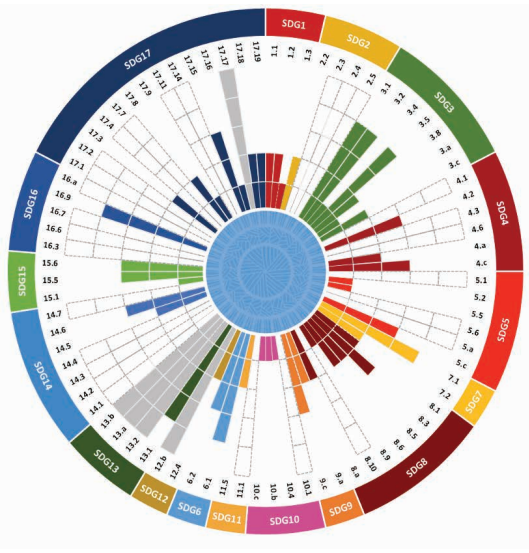
SDG 14 Progress Wheels

There were few key changes for SDG14 targets denoted from the Wheels below. The first is the inclusion of progress on SDG14.6 – IUU target and secondly the increase in the progress bar for SDG14.5 from 20% (some progress) to 40% (average progress). Note also the removal of "tier 3" in a few SDG14 targets as compared to the 2018 Wheels.

2018



2020



Bar type	Value
	Tier 3, or pending
	None, or insufficient data
	No progress
	Minimal progress
	Some progress
	Average progress
	Good progress
	Fully achieved

Since the methodology employed for the measurement of this SDG Wheel is purely statistics, the number of indicators with insufficient or pending data has clearly shown the chronic lack of statistic data for SDG14 target indicators in Forum island members, as well as capacity to process required data for regular reporting.

More organisations and sectors are aligning information to this methodology, so it is anticipated that the other SDG14 targets will be improved and better reported in the next "Wheels".

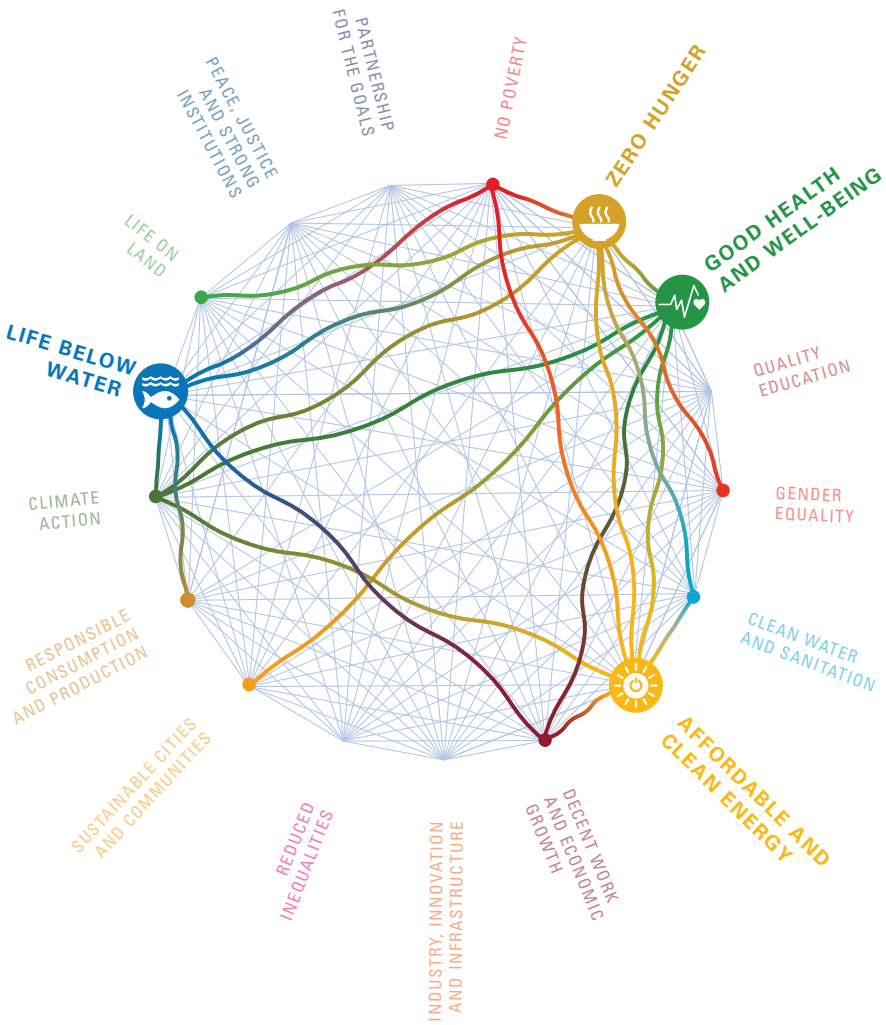
Nevertheless, this SDG Wheel approach has extremely helpful to visualize progress of implementation of SDG14 targets. This reporting mechanism is embedded as part of the Pacific Roadmap for Sustainable Development.

Overall, the progress is poor to date, and the region is not on track with SDG14 targets and commitments.

SDG 14 Interactions with other SDGs

Worth highlighting is the notion that SDG 14 is connected to other SDGs and vice versa. "No healthy planet without a healthy ocean" a quote by UNSG Special Envoy for Ocean Ambassador Peter Thomson underpins the need to look at the connectivity SDG14 and other SDGs. The other SDGs with strong interactions with SDG14 as per the figure below include, SDG 8 – Decent Work and Economic Growth, SDG 12 – Responsible Consumption and Production, SDG 13 – Climate Action. This indicate that the success of SDG 14 goals and targets is perpetually linked to other SDGs and their targets.

Figure 19:
SDG 14 interactions



Source: https://council.science/publications/a-guide-to-sdg-interactions-from-science-to-implementation/

FPO Progress Card for 2016 and 2020 (Annex 6 & 7)

This section provides a status of implementing the Framework for Pacific Oceanscape with indicators driven from existing regional work on oceans in the region. There are more indicators established and used for 2020 compared with 2016. Therefore, a new baseline can be used for future monitoring and evaluation of FPO progress and implementation. The flexibility of this FPO report card indicates good progress on ocean work in the region.

Take Home Message

The overall status of implementing ocean priorities, collectively across the region is at best a "moderate positive progress". This means that PIF Members have performed and are still undertaking those priorities at a relatively slow pace. It is apparent that a particular narrative of such as "Pacific Way" or "Blue Pacific" or "Blue Continent" has neither inspired the overall progress nor achieved full implementation. There is clear evidence of disjointed and uncoordinated ocean initiatives, particularly on documenting progress.

This qualitative review indicates the region has a strong and working system of creating policies, space for political discussions, agreements, and settlements. It also demonstrates a significant amount of ocean policies, ocean initiatives and ocean actors at play in the space.

However, the review also demonstrates that questions such as: What has been achieved as a region, collective, in response to Leaders' policies and decisions? How best to document the overall progress? Where do the different efforts and initiatives get reported? These questions are still not very clear and highly fragmented.

There are key gaps identified such as the role of robust data in informing policies and reporting, powerful narratives, re-thinking regional and national ocean initiatives to align well with accountabilities. Furthermore, positioning the region for emerging economic developments on issues such as renewable energy, marine biotechnology, deep-sea mining, integrated ocean management and security issues.

There is a need to integrate efforts, systematically document status and progress to inform a coordinated and strategic policy response. Such as a well publicised, readily accessible, central and integrated reporting mechanism must be well embraced by PIF Members, working for all sectors, and owned and supported by all stakeholders.

3.3 Contributions to Ocean Conservation and Management

While great progress has been made, at least on paper, many challenges remain and the room for improvement is vast. Our collective difficulty to implement a well-coordinated and well-integrated approach to ocean space, inadequate high seas regulations, and issues relating to implementation and enforcement, all contribute to the difficulty in effectively addressing direct pressures on the ocean.

With the observed degradation of the ocean and its ecosystems and species, Blue Pacific Members seem to have responded to this ever-louder call for increased protection, conservation and management: Forty percent (40%) of areas in the region are now under some form of protection or management exceeding the Aichi Target 11 and SDG 14.5 which aim at 10% of marine protected areas by 2020. It is worth however, taking a closer look at these measures and assess whether they are operating effectively.

To respond to the various threats and pressures facing the ocean, which decrease the ability of species and ecosystems to bounce back from the effects of climate change or ocean acidification, and hamper their ability to adequately provide valuable services, the science is clear: pressures have to be at least limited, at best, avoided.

That implies ensuring both provisions and implementation of robust protection measures in some areas and implementing specific measures to lessen and/or prevent pressures and continue benefiting from ocean bounties in the rest.

This is also a strategy that has long been implemented across our region for centuries, where our ancestors well understood that to continue benefiting from the bounties of the ocean, they required being cared for.

Traditional Management Systems (other effective area-based conservation mechanisms OECM)

"The inseparable link between our, ocean, seas and island peoples has been illustrated by their values, traditional practices and spiritual connections. The invaluable methods and principles passed down from our forebearers are key to a sustainable future for our ocean[180]." As custodians of some of the world's richest biodiversity and marine resources, Pacific islanders have crafted complex relationships with ecosystems to sustain this natural endowment through generations. They have done so through mastering complex sets of skills and knowledge developed from centuries of ocean navigation, coastal management, and ocean-based economy. This traditional knowledge and the associated cultural practices still play a strong part in resource management and conservation in the region.

There is a growing recognition of the importance to include and take into account traditional knowledge when designating, establishing, and monitoring area-based management and conservation measures, including marine protected areas. Calls at the regional[181] and international levels[182] are growing louder to institutionalize traditional knowledge as a complement to best available scientific information. Our homes across the region all have specific examples of customary marine tenure systems or ecosystem-based approach rooted in specific cultural practices and norms.

[180] POA report
[181] This analysis was carried out under the Global Challenges Research Fund - One Ocean Hub, by Pierre Mazzega (CNRS, University Jean Jaurès, France), Claire Lajaunie (INSERM, University Aix-Marseille, France), Jeremy Hills (USP) & Payal Maharaj (USP)
[182] Pohnpei Ocean Declaration, September 2016, Pacific Island Forum leaders Summit

From *vanua* in Fiji, *puava* in the Solomon Islands, or *tabinau* in Yap, *rahui* in New Zealand or Tahiti, *bul* in Palau or *tabu/tapu* in Vanuatu, Kiribati, Fiji, or Tahiti, there are various methods employed by the many local communities to more or less protect and/or sustainably manage marine resources. Most of them are focused on nearshore or coastal resources, although there are instance of offshore examples, such as Tokelau's *inati* system target pelagic migratory fish such as tuna. Furthermore, many such dynamic management systems and methods imply temporary or rotating closure of areas[183].

New Zealand: New Zealand has currently 44 no-take marine reserves and another 1.26 million km2 under a variety of protection measures[184]. In Aotearoa, there are area-based tools that are used to manage customary non-commercial fishing. These can be broad or specific. For example, *rohe moana* are areas within which a *kaitiaki* is appointed to issue customary authorisation to go fishing. The *maitaitai* are additional controls on fishing – generally in much smaller areas than *rohe moana*. Commercial fishing is excluded from these areas unless agreed/reinstated by those who manage the *mataitai*. Another area-based management tool is a *taiapure*, which allows *tangata whenua* and members of the community to manage a designated area[185].

Australia: Within the Great Barrier Reef, Traditional Use of Marine Resources Agreements describe how traditional owner groups work in partnership with the Australian and Queensland governments to manage traditional use activities on their sea areas. An agreement may describe how traditional owner groups wish to manage their take of natural resources (including protected species), their role in compliance, their role in monitoring the condition of plants and animals, and human activities. There are currently nine such Agreements and one Indigenous Land Use Agreement in place. Combined, these agreements cover approximately 25 per cent of the Great Barrier Reef coastline.

[183] See of instance the POA meeting summary in October 2020; the SPC ocean science decade workshop; or Taraho'i Declaration from the Group of Pacific Islands Parliaments, September 2019

[184] PIF and PSIDS delegations during the BBNJ IGC process have called for the recognition of this complementarity through basing decisions and implementations of the BBNJ instrument on the best available scientific information and relevant traditional knowledge of indigenous peoples and local communities

[185] Mulalap et al, (2020)

Since 2000, the **Locally Managed Marine Areas (LMMA) Network**[186] has promoted an inclusive traditional management method with strong involvement and empowerment of local communities. The Network spans the people and cultures of Southeast Asia, Melanesia, Micronesia, Polynesia and the Americas. Its mission is to advance the practice of community-based marine resource management and conservation by providing a forum for practitioners (communities, traditional leaders, individuals, organizations, and researchers) to share experiences and information. There are more than 12,000 square kilometres covered by LMMA in 15 PIF Members. LMMAs employ a wide range of area-based management measures, include tabu/tapu, temporary or permanent seasonal/rotational harvest schedules, and reserves/refuges for certain species such as turtles and trochus shells[187].

The **Festival of Pacific Arts and Culture (FESTPAC)**[188] is the world's largest celebration of indigenous Pacific Islanders, drawing artists, cultural practitioners, scholars and officials from Members of the Pacific Community (SPC). It is held every four years in a different Pacific Island Nation and has been an important perpetuation of Pacific arts and cultures. The goals of the Festival were developed in 1975 and have remained the driving force:

1. Preserving and revival of traditional arts and cultures of the Pacific
2. Exploring new forms of cultural activities suited to the needs of the Pacific
3. Creating greater awareness of the cultural richness of the Pacific throughout the world
4. Fostering a greater sense of unity throughout the Pacific to promote excellence in arts, and
5. Promoting the development and use of ethic languages

[186] New Zealand contribution to OPOC questionnaire
[187] Te Ohu Kaimoana - Aotearoa/New Zealand, submission to OPOC, May 2020 and https://maps.mpi.govt.nz/templates/MPIViewer/?appid=96f54e1918554ebbaf17f965f0d961e1
[188] lmmanetwork.org

Protection and management of the ocean, its ecosystems and resources

The region has a wealth of varied management and conservation measures implemented nationally, each responding to specific objectives. In recent years, island countries have responded to the call to increase marine conservation by declaring vast areas of their EEZ under some form of conservation and management. The comparison between these different choices can be difficult as they are context specific. In addition, the difficulty arising from lack of means to effectively monitor and measure the effectiveness of their measures, including enforcement capacities as well as ability to adapt to changing circumstances, are some of the challenges faced by administrators in the region.

When analysing and comparing how much of an area is managed, it is also important to understand the objective(s) sought. The designation and establishment of area-based management and protection measures vary in shape, form, denomination, and objectives. Some are conservation focused and can include strict measures. They range from no-take zones and reserves to areas where some activities are allowed. Some are sustainable use focused and managed by sectoral agencies, such as fisheries zone-based management – managed by fisheries agencies (regional, sub-regional and national). In relation to fisheries, the whole of our ocean is covered by a management regime which is subject to the requirement to manage fish stocks sustainably, and to avoid, remedy or mitigate any adverse effects of fishing on the aquatic environment. Within this regime, certain restrictions are put in place, for example to protect seamounts and benthic areas from the effects of bottom trawling, and to reduce bycatch[189].

Other areas are also managed by local coastal communities, such as the locally managed marine areas network (refer to box below).

Many countries across the region have established some form of governance of their EEZ supported by area-based management tools. There is currently no universally (or regionally) agreed definition of what constitutes an area-based management (ABM) tool, nor an agreed definition for Marine Protected

Area (MPA) and Other effective area-based conservation mechanisms (OCEM). Area-based management includes planning, followed by management and implementation, which are continuous processes that require constant review and adaptation. Conservation measures are important and effective tools if they are well planned and effectively implemented. However, should their development and implementation be ill-conceived, they also run the risk of being less than useful.

According to SPREP (PIPAP), currently marine protected areas in the region cover 4,636,046 square kilometres or about 15% of total area of EEZs[190]. Some 56 sites are reported to have management plans which comprise various types of measures, with some allowing for multi-use while others are no-take reserves.

As for managed areas, there are 163 sites across 6 Countries covering approximately 10,960 square kilometres, about 0.12% of the total EEZs of the region concerned. Out of these 163 sites, only 5 sites are reported to have management plans[191]. Some of these 163 sites are also included as part of the LMMA (see above). In Australia, 58 Australian Marine Parks in Commonwealth waters, covering a combined area of 2,762,724 km2, are managed under statutory management plans. New Zealand's territorial sea and entire EEZ are managed by various pieces of legislation, for example, the EEZ Act[192].

[190] this covers sites in all 21 PICTs officially designated and captured in the World Database on Protected Areas (WDPA) as 'marine protected areas' those that are entirely designated as 'marine', and terrestrial protected areas that include a coastal/marine component. Pitcairn is included in this analysis. Timor Leste is excluded; PICT EEZ data used (SPREP, 2004). Does not include recent MPA declarations for Niue (Moana Mahu) and French Polynesia (Te Tainui Atea)

[191] this analysis covers those PICTs that have marine areas officially designated as Locally Managed Marine Areas (LMMAs), Marine Managed Areas (MMAs) and Special Management Areas (SMAs) captured in the WDPA. Therefore, covers Fiji, Papua New Guinea, Solomon Islands, Tonga and Tuvalu. It also covers the 'Locally Managed Protected Area' designations for New Caledonia, 80% of which are marine in nature. The existence of management plans for many of these sites are listed as 'not reported' on the WDPA indicating that PICTs have not reported whether a management plan or equivalent conservation planning mechanism exists (or not) for these sites

[192] New Zealand contribution to OPOC questionnaire

For the Blue Pacific Continent specifically, MPA and managed areas (in a general sense) are as follows:

- The Australian, state and territory governments have established marine parks around the country, covering 3.3 million square kilometres or 36%
- Cook Islands: 1,981,949.23 km² / 1,972,842.36 km² (100.00%) Protected (PIPAP)
- French Polynesia: 206.94 km² (4,795,468.10 km² managed); there are 300km2 of regulated fishing zones that include lagoon/coastal areas[193]
- Kiribati: 408,796.55 km² / 3,459,130.41 km2: only a portion is committed to conserve and preserve to ensure breeding space/areas for marine species. 22% in Gilbert Group are protected areas (with 9 community-based environment and natural resources co-management arrangements in place. In the Line Islands: coverage of protected areas is approximately 50% (managed under Wildlife Conservation Ordinance) but no management plans in place. However, there is a Southern Line Islands Management Plan (SLIMPA) covering 12 nautical miles around 5 islands being finalized by the PIPA Management Committee. Other recognized protected areas: Cook Islet Closed Area Bird Reserve (22km2), Motu Tabu Islet Closed Area (0.04km2), Motu Upua Closed Area (0.19km2), Ngaontetaake Islet Closed Area (0.26km2), Northwest Point Closed Area (0.13km2), Malden Island Wildlife Sanctuary (39.3km2), Starbuck Wildlife Sanctuary (Area of 162km2), Volstock Island Wildlife Sanctuary (0.24km2), and PIPA[194]
- Niue: 127,000 km² / 390,000km² (40%) Protected
- Samoa: 190.54 km² / 132,305.60 km²
- Fiji: 11,959.01 km² / 1,293,034.72 km² (0.92%) Protected
- Tonga: 390.04 km² / 668,054.61 km² (0.06%) Protected

[193] Include data from the French Polynesian government report to the French Polynesian Assembly in advance of the 2020 budget orientation debate, October 2019
[194] Information from Kiribati contribution to OPOC's questionnaire

- Tuvalu: 213.86 km² / 731,900.03 km² (0.03%) Protected, and 100% of the EEZ is subject to fisheries management measures under the Tuvalu Tuna Fisheries Management and Development Plan. For inshore areas, 169.81 km2 (0.02% of the EEZ but at least 30% of coastal areas) of Locally Managed Marine Areas (LMMAs) which are eight in total with their management plans
- Marshall Islands: 5,388.40 km² / 2,004,587.26 km² (0.27%) Protected
- Nauru: 0.00 km² / 0.00 km² (%)
- New Zealand: By 2014, 44 marine reserves had been created around the New Zealand coastline, covering 1,726,007 hectares (EEZ: 4,083,744 square kilometres). 100% of EEZ and territorial sea is managed
- Federated States of Micronesia: 2,135 km² / 3,011,916.98 km² (nearshore; 14.7% of 14,517 km² of FSM coral reefs are protected)
- Palau: 608,173.28 km² / 608,152.49 km² (100.00%, with 80% as no-take) Protected
- Papua New Guinea: 3,343.51 km² / 2,407,381.82 km² (0.14%) Protected
- Solomon Islands: 1,879.38 km² / 1,609,756.55 km² (0.12%) Protected
- Vanuatu: 47.51 km² / 622,073.22 km² (0.01%) Protected
- New Caledonia: 1,320,501.09 km² / 1,371,803.15 km² (96.26%) Protected
- American Samoa: 35,457.58 km² / 406,816.03 km² (8.72%)
- Tokelau: 9.51 km² / 321,242.52 km²
- Wallis and Futuna: 0.00 km² / 259,805.44 km²

Few examples of Large Scale Marine Protected Areas from Blue Pacific

Australia Great Barrier Reef Marine Part (GBRMP)[195] established in 1975 cover an area of 344,400 km2 . It includes both shallow estuarine areas and deep oceanic waters and extends into the airspace above and into the earth beneath the seabed. It is multi-purpose marine park that supports a range of commercial activities and welcomes millions of tourists each year. As per its core purpose of establishment to protect the Great Barrier Reef from damaging activities, the reef itself supports 64,000 jobs and contributes to the AUD6.4 Billion annually to the Australian economy.

Kiribati: The Phoenix Islands Protected Area (PIPA) covers an area of over 408,250 square kilometres (less than 20 square kilometres of land), PIPA protects the ocean from biodiversity loss and biodiversity threats by banning all commercial extractive activities. With this practice of conservation biology, the people of Kiribati have promised to maintain PIPA to serve as both a refuge for ocean and terrestrial wildlife as well as a laboratory to study biodiversity threats and the ocean's environmental health. Named a UNESCO World Heritage Site in 2010, PIPA is the largest and deepest oceanic World Heritage Site in the world. It consists of eight oceanic coral atolls, two submerged reefs and fourteen identified seamounts. Its isolation and low population species and is a breeding area for marine and seabird species.

The Palau Sanctuary[196]**:** In 2015, Palau enacted the Republic of Palau Public Law (RPPL) 09-49 to protect 500,238 square kilometers of its ocean by 2020, representing 80% of its EEZ area and has committed to maintain this area undisturbed and to be considered a sentinel of the impacts of climate change on coral reef health. It is named the Palau National Marine Sanctuary (PNMS). On June 12, 2019, amendments to the PNMS Act were passed in RPPL 10-157. The Act bans fishing and other resource extraction in the Sanctuary (80%). It also creates a Domestic Fishing Zone (remaining 20% of the EEZ), which includes a Commercial Fishing Zone and an Artisanal Zone. No commercial fishing can take place in this zone, which is under state jurisdiction. The PNMS Act aims to incentivize a reduction in reef fishing efforts through strategic development of a domestic pelagic fishery. The responsibility for implementation of the Act

rests with Minister of Natural Resources, Environment and Tourism (MNRET), the Palau International Coral Reef Center (PICRC), and the Ministry of Justice. The PNMS came into full effect on 1 January 2020. It is administered by the PICRC.

Cook Islands Marae Moana: Marae Moana is a multiple-use marine park which extends over the entire EEZ of the Cook Islands, and area of 1.9 million square kilometres. It is currently the largest commitment by a single country for integrated management and conservation from ridge to reef and from reef to ocean. Marae Moana was legally designated on 12 July 2017 by the Marae Moana Act 2017. It has the primary purpose of protection and conserving the "ecological, biodiversity and heritage values of the Cook Islands marine environment". Marae Moana was first announced at the formal opening of the 42nd Leaders Forum meeting in 2012 when the Prime Minister committed to establishing what was then known as the "Cook Islands Marine Park", with the full support of the government, traditional leaders and local communities". Marae Moana is to provide the "necessary framework to promote sustainable development by balancing economic growth interests such as tourism, fishing and deep-sea mining, with conserving core biodiversity and natural assets, in the ocean, reefs and islands".

New Caledonia Coral Sea Nature Park: By governmental decree of 23 April 2014, the New Caledonia government created the Natural Park of the Coral Sea which comprises the New Caledonia EEZ and the territorial and internal waters of the "remote islands". Since August 2018, it added a little under high level protection about 15,000 square kilometers of coral reefs which are under provincial jurisdiction. All fishing in these new reserve areas is banned, including for self-consumption, and access is restricted. The Natural Park, first announced by President of the Government of New Caledonia at the 2012 Forum meeting taking place in the Cook Islands, was created to protect the ecological integrity of the marine environment. To do so, the governmental decree establishes a management committee composed of four balanced pillars (institutional, customary, socio-professional and representatives of civil society). The committee was tasked with developing the management plan for the park after extensive consultations with various local and regional stakeholders. This management plan outlines the expected

outcomes and takes into account provincial regulations and customary rules. Its implementation is based on cooperation with provinces, municipalities, managing committees from UNESCO World Heritage, customary structures as well as with any organization interacting with a protected area. The management plan also recognized the critical importance of ensuring a coherent monitoring of the protected areas.

New Caledonia's Coral Sea Natural Park is part of the "Coral Sea", a vast maritime area defined, from the hydrographic viewpoint, as being bounded to the west by Australia, to the north by Papua New Guinea and the Solomon Islands and to the east by Vanuatu and New Caledonia. As a result, cooperation agreements regarding the management were signed with Australia in 2010 to coordinate the efforts regarding the management of the Coral Sea; with the Cook Islands, in 2013, to twin the two countries' protected marine areas and facilitate the sharing of expertise to improve management; and a memorandum of attention with Vanuatu and the Solomon Islands for concerted management of their marine areas.

Niue Moana Mahu National Marine Protected Area: The Niue Cabinet passed the Niue Moana Mahu Marine Protected Area Regulations 2020 in April 2020, formalizing and giving legal effect to the protection of 40% of the EEZ of Niue, or 127,000 square kilometers. The Large Scale Marine Protected Area (LSMPA) includes a Special Management Area (SMA) around and including Beveridge Reef named the "Beveridge Reef Nukutulueatama Special Management Area". The passing of the regulations is the culmination of several years of work which began with an approach to Oceans 5 in 2015 through the Ministry of Natural Resources (MNR) and Department of Agriculture, Forestry and Fisheries (DAFF) to support Niue in the development of a sustainable and integrated approach to ocean conservation and management. This was subsequently followed by the establishment of a local NGO Tofia Niue and the Public-Private partnership between the Government of Niue and Tofia Niue, represented by the Niue Ocean Wide Project and funded by Oceans 5 in mid-2016. The main donors and partners of the Niue Government in this undertaking are Oceans 5 and National Geographic Pristine Seas, together with the Niue Ridge to Reef (Niue R2R) Project with funding from UNDP and the Global Environment Fund UNDP/GEF.

French Polynesia's Marine Educational Areas: The concept of "marine educational area" originated from an initiative by children of the Vaitahu Elementary School (Tahuata Island, Marquesas, French Polynesia) following a meeting with scientists engaged in a campaign in the archipelago. The project was supported by the Motu Haka (a cultural Marquesan organization), the "community of communes" of the Marquesas (federation of municipalities), the French Marine Protected Areas Agency, and the French Polynesian government. A "marine educational area (MEA)" is a small coastal area managed by primary school students guided by principles defined in a charter. Each school committing to an MEA and abiding by it receives a label. Through this project, these students learn values of eco-citizenship and respect of the marine environment. The managing class of students is working with the municipalities and other stakeholders in implementing this education project. Today, there are close to 30 schools engaged in this programme, which was presented at the UNOC 1 in 2017.

The Micronesia Challenge (MC): is a sub-regional initiative launched in 2006 by the governments of Palau, the Federated States of Micronesia and the Marshall Islands to effectively conserve 30% of nearshore marine resources, and 20% of terrestrial resources across Micronesia by 2020.

The case of the High Seas (refer also subsection on Maritime Boundaries)

UNCLOS is responsible for regulating all activities beyond national jurisdiction whether on the High Seas or on the seabed (The Area). The body responsible for The Area is the International Seabed Authority (ISA).

The UN Fish Stocks Agreement has largely addressed the transboundary issues associated with tuna fish. There is no body responsible for the conservation and sustainable use of biodiversity of areas beyond national jurisdictions. That is the anticipated role of the outcome of the Biodiversity Beyond National Jurisdiction (BBNJ) negotiations process under the aegis of the United Nations General Assembly.

An overarching framework is imperative. Some States do not consider regional organisations legitimate in the establishment and management of area-based management in areas beyond national jurisdiction. A new international legally binding instrument that facilitates area-based management in ABNJ would allow for the management of conflicting uses, protection of sensitive areas, and the establishment of high seas cross-sectoral protection and management measures. It would also enable environmental impact assessments and strategic impact assessments so as to preempt impacts from proposed activities, including new types of activities. This is what the BBNJ process aims to achieve and why it is so critical. Addressing the various impacts plaguing the ocean require a suit of strong conservation tools.

The Blue Pacific Continent in the BBNJ process: Areas beyond national jurisdictions are currently under no global framework for the conservation and sustainable use of marine biodiversity. As a result, and because of the accelerating degradation of the ocean and its resources, the international community has been discussing the development of a legally binding text to address some of the key challenges facing biodiversity of areas beyond national jurisdiction. After more than a decade of discussions, the UN General Assembly decided to convene an intergovernmental conference to develop a legally binding international instrument on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction (the BBNJ process). Four 10-day conference sessions were scheduled to take place by 2020. Due to COVID-19, this deadline has been pushed to 2021. This conference discusses the development of legal provisions for marine genetic resources, including benefit-sharing from their utilization, area-based management tools, including marine protected areas, environmental impact assessments, and capacity building and transfer of marine technology.

The BBNJ negotiations are important for PIF Members because what happens beyond national jurisdiction can have impact(s) on areas in national jurisdiction. This is why regional delegations have been very active in the negotiations. Two of the four facilitators of the IGC are women from our very own region.

PIF Members may not always see eye to eye in the negotiations. Some interests even diverge. However, regional delegations have advocated for common priorities, including the recognition of the role of traditional knowledge and its holders as a complement to best available scientific information; the importance of recognizing the role and interests of coastal states in the implementation of the instrument and the importance of regional institutions to safeguard these interests including

in terms of decision-making; and the need to fully take into account the special circumstances of Small Island Developing States (SIDS).
This process has tested the newly created OPOC and its role as coordinator on ocean issues. Over the course of five years, since the launch of the BBNJ Preparatory Process in 2016, OPOC has coordinated experts from CROP agencies and the POA to provide technical support to the Pacific SIDS (the recognized political group of Forum island members in the UN) in the preparations of and during the Prep-Com and IGC negotiation sessions.

In addition, OPOC organized and coordinated preparations and implementation of two PIFS negotiators meetings in 2019 and 2020. These two meetings aimed to progress on areas of convergence between Forum member delegations (PSIDS on the one hand, and Australia and New Zealand on the other), as well as engage in frank discussions on issues of divergence. This has enabled some progress. Much more is still needed.

What the BBNJ process tells us is that the region is indeed composed of countries and stakeholders with different and at times divergent interests and priorities. All are different, some more than others. The recognition that the Pacific Ocean is critical for our sustainable development, nationally and collectively is what unites us. We must continue discussing amongst all stakeholders to find the best outcome for the Blue Continent and its people.

Part 4: Committing to a Redefined Blue Pacific Way Forward

The previous sections demonstrated that the ambitious commitments the region has made nationally, regionally, and internationally have not been adequate to reverse the degradation trends facing the ocean and its ecosystems.

Lack of coordination nationally, regionally, and internationally has resulted in gaps in implementation, duplication of work, and damaging competition. Improving the health of the ocean and maximizing on the collective opportunity to benefit from its resources requires first that we acknowledge that we are all responsible for where we are now, and most importantly where we want to go.

Whether we build a region of peace, harmony, security, social inclusion, and prosperity will depend in part on our collective ability to meeting the ocean challenges. To do so, we must redefine our relationship with the ocean and recognize that all of us have a role to play. Most importantly, deciding where we want to be as a Blue Pacific Continent in the future will determine what we need to do in the short, medium, and long terms.

4.1 Redefining Our Relationship with the Ocean

Part 3 of this report demonstrates that PIF Members have at their disposal a wealth of policy frameworks and instruments on ocean priorities. Leaders and their partners have made numerous commitments and pledges, set a wide range of priorities and goals. Taken together, these commitments and framework could solve the plight we are faced with. Yet, we are not making good on them. Our ocean custodianship identity lives only through a paper-trail of declarations. Coherence, coordination, and cooperation must guide our regional action, in particular when it comes to the management of our activities in the ocean and the use of its resources.

The Blue Pacific Ocean is our endowment fund which we inherited from our ancestors and which we will pass on to future generations. As its custodians, we are required to look over it and care for it. To continue to benefit from it, we need to invest in it and nurture it through wise and sustainable management. Like an endowment fund, a part of it ought to be left aside to grow and reap benefits year after year, decade after decade. Such measured management will enable us to address the most pressing challenges we are faced with. It starts with finding the right equilibrium between conservation and development (or sustainable management and use).

Leaders have already provided a guiding vision "for a region of peace, harmony, security, social inclusion and prosperity. A region where Pacific people can lead free, healthy, and productive lives". However, a siloed and sectoral approach will not unlock sustainable growth.

A holistic and inclusive approach will; based on transparency, best available scientific information, relevant traditional knowledge of IPLC, ecosystem approach, and rooted in inter-generational equity and precaution.
The 2019 POA meeting discussed the need to balance conservation and development (sustainable management and use). It was stressed that the two should not be disassociated when pursuing integrated ocean management objectives. The most appropriate management tools and measures should be used to manage, use and conserve the whole marine space.

Photo Credit: Pacific Islands Forum Secretariat (PIFS)

In light of the multiplication of activities and pressures observed and further projected, as well as to make good on the Leaders' vision for a secure region, POA participants called for 100% management of the Ocean, both within and beyond national jurisdictions[197]. A second call by international and regional scientists to conserve at least 30% of the ocean to maintain its health, productivity, and resilience, as well as that of its ecosystems, is also growing louder. For some in the region, these two calls are complementary[198]. If we are to adequately reverse the trend facing our Blue Pacific Ocean, we must advance these calls jointly.

Integrated Ocean Management

Integrated management is not a new concept. Integrated coastal management was a priority 10 years ago, as captured in the FPO. It has not been adequately implemented. Today, we must imperatively implement ocean-wide integrated management. Ridge-to-reef programmes are excellent initiatives and must be complemented by an EEZ component at the national level. However, the connected nature of the ocean means that no matter how strong measures implemented within national jurisdiction are, how well they are implemented and abided by, what happens beyond the EEZ (and the extended continental shelf where relevant) of a Country can impact on progress. Optimally, a Blue Pacific Continent management plan will enable to adequately address the stresses and opportunities for actions as identified above.

What integrated ocean management implies also is that all relevant sectors of our sustainable development mainstream ocean considerations. Every decision made nationally and regionally must be guided with the assurance that we do not undermine the health, productivity, and resilience of the ocean. Such decisions must also include considerations of current and projected climate change and ocean acidification.

[197] This call echoes the one from the High Level Panel for Sustainable Ocean Economy: oceanpanel.org
[198] See POA summary report from October 2019. Nationally, Fiji, for instance, called for this target in its National Ocean Policy

The **Pacific Ridge to Reef Programme** is a multi-focal area programme guiding coordinated investment of USD90 million in GEF grant funding across its focal areas of biodiversity conservation, land degradation, climate change adaptation and mitigation, sustainable land management, sustainable forest management, and international waters in Pacific Small Island Developing States (PacificSIDS). It is a multi-agency initiative involving the United Nations Development Programme (UNDP), the United Nations Food and Agriculture Organization (FAO), and the United Nations Environment Programme (UNEP) as GEF implementing agencies. Executed regionally by SPC through the Pacific Regional Ridge to Reef International Waters Project (Pacific Regional R2R IW), the operations of the R2R Programme support areas of science-based planning, human capital development, policy and strategic planning, results-based management, and knowledge sharing. The R2R IW national pilot projects are designed to strengthen R2R integration by establishing synergies between sector agencies and the GEF National R2R STAR Projects, governments and communities, civil society and the private sector. The Project Coordinating Unit, hosted by the SPC Geoscience Division based in Fiji, is tasked with the provision of technical, operational, reporting and monitoring support as requested by the participating PSIDS.

PROTEGE: The Pacific Territories Regional Project for Sustainable Ecosystem Management comes under the 11th regional European Development Fund. This four-year agreement was signed in October 2019 between the European Union and the Pacific Community. The project will operate in Wallis and Futuna, New Caledonia, French Polynesia and Pitcairn.

It aims to build sustainable development and climate-resilient economies in overseas countries and territories (OCTs) by focusing on biodiversity and renewable resources with two main objectives: strengthening key primary sectors' sustainability, climate change adaptation and autonomy; and enhancing ecosystem-service security by protecting water resources and biodiversity.

It operates through an EU 36 million budget with a team composed of 10 staff from SPC and one from SPREP.

PROTEGE has four themes: fisheries and aquaculture, agricultu0re and forestry, water, and invasive species.

For fisheries and aquaculture (budget: EU 6.64 million), the expected outcomes are:

1. Aquaculture techniques and production development methods suited to island economies are trialed and implemented at pilot scales and then transferred to the rest of the Pacific Islands region (OCTs and ACP countries);
2. Aquaculture activities are sustainably integrated into the natural setting by documenting and minimising any negative interactions;
3. Participatory management and integrated planning (at the local, territorial and regional level) of the resources used are continued and strengthened;
4. Optimal use is made of fisheries and aquaculture products.

Marine Spatial Planning: Trade-offs and Coordination Amongst Competing Interests

To improve coordination of activities, a wide variety of tools are available. Marine Spatial Planning (MSP) is a relatively new planning process and, or system that guides and informs decision-making for multiple uses – that is, for economic growth while maintaining ecosystem function and biodiversity integrity of coastal and ocean areas including through the designation of areas to be protected (with various protection measures based on the objectives and characteristics). The conservation and management of the ocean and its ecosystems, as well as the sustainable use of its resources, require and must respond to adequate planning and objectives. Indeed, the consideration of connectivity between ecosystems and habitats is important when making decisions relating to conservation, management, and sustainable use. Also

important is the consideration of cumulative impacts either from one type of activities, the aggregation of several activities, as well as the accumulation of impacts of activities and global processes, in particular climate change, ocean acidification, and marine pollution.

Some PIF Members have started to elaborate MSPs in their EEZ, including Australia (through their bioregion process), Cook Islands (Marae Moana), Kiribati (only in their Phoenix Islands Protected Area), Niue (through their Niue Moana Mahu – Large Scale Marine Protected Area) and New Zealand (MSP through Hauraki Gulf), Fiji, Samoa, Tonga, Solomon Islands and Vanuatu through MACBIO while Palau, Federated States of Micronesia, Marshall Islands supported through the Micronesian Challenge. These MSP initiatives include five ongoing developments and support with IUCN Oceania Regional Office plus Cook Islands Marae Moana though the R2R project. The Kingdom of Tonga, for instance, has committed through this MSP process to protect 30% of its EEZ and resolve conflict. Annex 10 provide a listing of Pacific Islands and Territories, and their status of marine spatial planning.

These efforts are in line with action 3B of the FPO that PIF Members explore and build on marine spatial planning mechanisms for improved EEZ management to achieve economic development and environmental objectives.

Region wide MSP, as a tool to design and implement ocean integrated management, would help to further improve national efforts and allow for tangible Blue Pacific Continent decision making. It must extend beyond national jurisdiction and include the High Seas if we are to fully implement a strategy for a secure Blue Pacific Continent. In this regard the future BBNJ instrument is a formidable opportunity for our region to take full control of the Blue Pacific Continent.

Dynamic and Adaptive Management

Ocean management and conservation must be grounded in the best available scientific information and relevant traditional knowledge of IPLCs. Ocean systems are dynamic. Species migrate, feed, and reproduce. Currents shift. Tides and seasons alternate. Static management systems fail to take these into account. They also fail to incorporate climate change and other global processes' ever accentuating impacts. Understanding these patterns and reflecting them in dynamic management systems will help improve their effectiveness. Science and traditional knowledge allow for such understandings.

Whilst creating a network of effectively and equitably managed, ecologically representative and well-connected systems of protected areas is important, these must be integrated into the wider picture, where all uses are considered, and outcomes are managed for the sustainable development, management and conservation of resources. The breadth of available management options needs to be considered, including but not limited to: (i) no activity; (ii) reduced/adapted activity; and, (iii) the cessation of specified activities. Temporal or rotating zoning and measures could also be further explored. Most importantly, any decision and any measure must be strongly grounded in the best available scientific information and relevant traditional knowledge of IPLC.

Many traditional systems of management or conservation are temporal in scope: they adapt to keystone species' reproductive or migration cycles or to seasonal changes in general. Further consideration of how such seasonal or movable zoning be implemented in larger scales or further offshores, including in areas beyond national jurisdiction could perhaps help improving conservation and management measures. While this has been conducted at local level, the challenge to implement them in the open ocean is real, but not insurmountable[199].

Effective implementation requires regular monitoring conducted in an open and transparent manner. It also requires robust surveillance and enforcement means which, in the context of the Blue Pacific, must be rooted in regional cooperation. These require means in the form of innovative forms of financing and technology.

[199] See for instance G. Ortuno Crespo, J. Mossop, D. Dunn, K. Gjerde, E. Hazen, G. Reygondeau, R. Warner, D. Tittensor & P. Halpin, 'Beyond static spatial management: Scientific and legal considerations for dynamic management in the high seas' (2020) Marine Policy

Tools for Mitigating and Avoiding Impacts

Environmental Impact Assessments (EIA) seek to identify and manage the impacts of activities on the environment. They are essential tools to uphold countries' obligations under international law, including UNCLOS, to not harm the marine environment, as well as to promote the precautionary approach/ principle. The FPO calls for prior environmental assessments to prevent harmful impacts from new and emerging activities, and leaders further reiterated their support for effective environmental impact assessments in the 2014 Palau Declaration. SPREP prepared EIA guidelines for the Pacific, which were endorsed by Member countries in September 2015, to guide national governments EIA legislation. These guidelines have also been used by Forum delegations to prepare for the BBNJ negotiation process. EIA can be used to coordinate between all stakeholders for specific projects. EIA is legislated by most PIF Members.

Strategic Impact Assessment (SEA) is a tool for assessing policies, plans and programmes. SEA is an upstream process that can be used for determining suitability of plans and programmes and determining if activities trigger EIA thresholds. It is a process of prior examination or appraisal of policies, plans, and programmes and/or multiple development projects in a given geographic area, which consider how potential uses might impact upon ecological, social, economic and cultural values and other (current and) potential uses so as to produce general environmental management policies or design guidelines for the development of classes or types of activities or for the designation of ABMTs, including MPAs[200]. SEA could be used as an administrative tool. SPREP has recently drafted guidelines for Strategic Environmental Assessment upon request from the SPREP member countries and territories. However, to date there is little legislation for its use in the region.

These tools implemented nationally and regionally are important to prevent impacts on the ocean health that can further decrease its resilience to climate change and ocean acidification and halter its productivity. They can also help in improving ocean management in a more coherent and collaborative manner, including through the consideration of cumulative impacts of activities and global changes.

[200] This definition was proposed by SPREP through OPOC to Pacific delegations in their preparations for BBNJ IGC

There are a whole suite of instruments and tools available to the Blue Pacific to increase coherence of ocean governance through integrated ocean management. The use of marine spatial planning, supported by strategic environmental assessments and environmental assessments, can better facilitate the consideration and orchestration of multi-use of the ocean space. Rooted in transparency, cooperation, accountability, inclusiveness, precautionary approach/principle, the best available scientific information and relevant TK of IPLC, ecological and cultural connectivity, adaptive management, and equity, tools to implement integrated management can help avoid conflicts of interests. This will ensure that we maintain the health, productivity and resilience of our ocean and its valuable resources.

4.2 Re-defining Our Relationships Among Ourselves

Effective management and conservation of our ocean requires contribution by all users and those who benefit from the ocean. Akin to a vessel's crew, it is the collective ownership of the quest, the sum of skills and knowledge orchestrated in mutual support that is paramount to a safe journey. A strong crew will know how to respond to unknown obstacles and hardships by capitalizing on each individual's strengths and work in a coherent unison. In a canoe, individuals with their own set of skills and mandates all work towards the same goal. They realize that to reach the shore safely, they depend on each another. To achieve our 2050 Vision as well as achieve a healthy, productive and resilience ocean, we must all work in a collaborative and inclusive manner.

National Political Institutions

Governments

National governments are the more obvious partners in regional ocean governance. At home, in the region, and internationally, they set priorities, develop and implement policies. The design of a government, in particular how ocean matters are assigned, to which minister, and at what level of the protocol, is usually a strong indication of how sensitive the issue is for the country. Furthermore, through the elaboration and implementation of their policies, governments design budgets, which are then voted on by their national parliament. They propose legislation and regulations that pertain to ocean matters. They are also responsible for enforcing these regulations and legislations. Moreover, national governments engage with the regional and the international community in meetings, conferences, and through their permanent representations in such organizations. They, thus, have a power to influence how policies and law are designed and implemented at the regional and international levels.

Some Countries have dedicated ministries of the sea, ocean, marine resources or marine affairs that concentrate all ocean affairs under one umbrella. This is effective when the minister with such portfolio is situated at a higher level of protocol. It also makes it easier for improved coherence in policies and measures. However, such models may not resolve the issue of siloed approach, including how to mainstream ocean considerations in other sectoral programmes such as agriculture, industry, or energy.

On the other hand, there are Countries that have split ocean affairs into various portfolios. Often, fisheries is separated from ocean conservation or management issues which may be left to either the environmental ministry or foreign affairs ministry. Research and development, if they exist, may also be hosted in different ministries, so would tourism, transport, etc. Such split in portfolios while allowing to focus on areas of priorities among the vast ocean opportunities and challenges can run the risk of operating in silos and undermine integrated strategic positioning on ocean matters at the national, regional, and international levels. That is, of course, if there is no common understanding of how to mainstream ocean concerns in national policies and actions.

In addition, there are also practice of some Countries where they opted to place ocean affairs under the direct purview of the head of government and/or state. This signifies a strong indication of the priority that ocean related affairs have for that government and it can enable mainstreaming of ocean affairs in general into the whole of government action and policy.

Some countries have one single designated ocean focal point. Others have several with specific focus, for example one on fisheries, one on UN ocean processes, one on shipping. Having a single focal point on ocean affairs who can identify the relevant actors to consult and collaborate with at the national level can ensure adequate integration. For small administrations, however, it can quickly become burdensome if only one person is designated. The designation, however, of several focal points for different areas of interest for ocean governance (for instance, fisheries, conservation measures, pollution) runs also the risk to maintain the silo approach. This may be overcome with implementation of an ocean affairs committee who can serve as a focal group.

Parliaments

Parliaments of the region have also embraced the Pacific way of ocean stewardship and regionalism. Intra-regional parliamentarian meetings and cooperation are multiplying. For instance, recently in September 2019, the former Polynesian Islands Parliament group extended to become the group of Pacific Islands Parliaments. Their first meeting focused on the sustainable

Blue Economy and resulted in the Taraho'i Declaration, a collective set of commitments supporting many of the Forum priorities.

Through their legislative and budgetary functions, their role as representatives of their citizens, and their control of governmental actions, Parliaments are important actors and partners in the developing, implementing, monitoring and reviewing ocean governance related actions at the national levels. They are also important partners in the implementation of international commitments, including international legally binding agreements.

National Ocean Offices in PIF Members

Whether there is a dedicated ministry or a dedicated focal point, governments have to work on ocean related policies, legislation and regulations.

To do so, a few countries in the region have established a dedicated Ocean Office. For Vanuatu, for instance, the ocean affairs office seats under Foreign Affairs and was launched in July 2019. For Papua New Guinea, the National Ocean Office sits under the Prime Minister. Others have preferred to establish processes and multi-ministerial efforts (committees?) to elaborate their national policies.

Examples of National Ocean offices in PIF Members

In 2015 the **Solomon Islands** Government hosted an inaugural National Oceans Summit that recognised the critical importance of the goods and services provided by coastal and marine ecosystems in the Solomon Islands. As a result, a process was put in place for developing a more broad-based approach to oceans governance. This 'Ocean12' process has identified a set of priorities for Integrated Oceans Governance which are to form the basis for a National Oceans Policy.

In 2016 in **Vanuatu**, the Vanuatu National Ocean Policy was established which aims to ensure that the management of the marine environment and its resources will achieve the desired objectives, programmes and measures across all the agencies and for all people in Vanuatu that have a role in ocean management. The ocean policy embeds the culture of the ocean into ocean management and merges across different uses, users and ocean managers. The policy is framed around the structure of the Nakamal (The Nakamal is an institution for traditional custom governing systems for Vanuatu) as follows: (i) the foundation is an ecosystem-based approach to management as envisaged and implemented by forefathers using traditional marine resource management systems; (ii) upon the foundation are three pillars, the multi-dimensional value of the ocean, the integration across uses, across boundaries, across sectors, across governance structures and resilient ocean culture; (iii) the beam across the Nakamal is the overarching institutional arrangements; and (iv) the thatched roof is emblematic of the sectoral and cross-sectoral policy actions that will protect the Nakamal.

In **Papua New Guinea**, the purpose of the 2020-2030 National Ocean Policy is to develop and establish an integrated ocean management system within Papua New Guinea's national jurisdiction and at the same time establish a framework for regional and international cooperation and collaboration in areas beyond national jurisdiction (ABNJ. The development of the National Ocean Policy strengthens the organization, development and establishment of the Papua New Guinea National Ocean Office and its working committees. It was developed through national consultations, the review and assessment of numerous reports, laws and literature. It is based on the principle of Integrated Ocean Management (IOM), which also extends beyond the country's jurisdiction.

Provinces and States: Some countries in the region are divided into states or provinces, each embedded with a set of specific mandates, with relevance for effective ocean governance. They add either another layer of complexity in the design and implementation of national priorities, or, on the contrary, can greatly facilitate implementation when action is coordinated and concerted.

Municipalities: Municipalities or local governments have direct knowledge, understanding, access, and trust of their communities for the benefit and interests of whom national policies are elaborated and implemented. When it comes to ocean related governance, management and conservation, the role of municipalities is critical in garnering support and empowering communities.

All in all, these different public institutions/stakeholders play important roles individually and collectively in the design and implementation of a coherent national ocean policy. Their collective actions, however, must also involve cooperation of other important stakeholders, at the national as well as regional levels.

Engagement at the Regional and International Stage

Regional Intergovernmental Organizations

CROP is mandated to improve cooperation, coordination, and collaboration across the various development sectors and actors in the region. CROP comprises the heads of the intergovernmental regional organisations in the region, is governed by the CROP Charter and chaired by the PIFS Secretary General. It functions as a coordination mechanism between the heads of the regional organisations, and as a high-level advisory body, to provide policy advice and may assist in facilitating policy formulation at national, regional and international level. CROP provides a forum to enable CROP heads to collectively review progress with their respective organisations' contributions on the Framework for Pacific Regionalism.

Regional organizations who are members of CROP implement priorities set by their respective governing councils, composed of countries' representatives, including heads of government and State. They work to provide support to member countries in progressing these priorities and programmes. That said, in practice, regional organizations mostly cater to their respective island membership which is not necessarily identical to that of the Pacific Island Forum. While this technical support is critical, the current work conducted by regional organisations, including monitoring and review programmes, does not provide for a unified picture on how the region is achieving (or not) regional and international objectives set by Leaders. Despite efforts in improving coherence and coordination, there is still much room for progress.

Cooperation at the technical level is also mandated to the CROP Marine Sector Working Group. However, effective coordination to implement complementary programmes and improve cooperation remains an issue. The fact that these organizations cover specific sectors and that, except for the PIFS, their annual meetings are attended mostly at the relevant sectoral ministry level, entails that the approach remains sectoral (siloed) and could, at times, seem contradictory to other commitments. There is strong agreement in the region, with Members and CROP alike, of the recent lag of the MSWG, which was partially remedied by the coordinating role of OPOC on some key ocean priorities, in particular BBNJ. This effective role resulted mostly from a constant and robust link

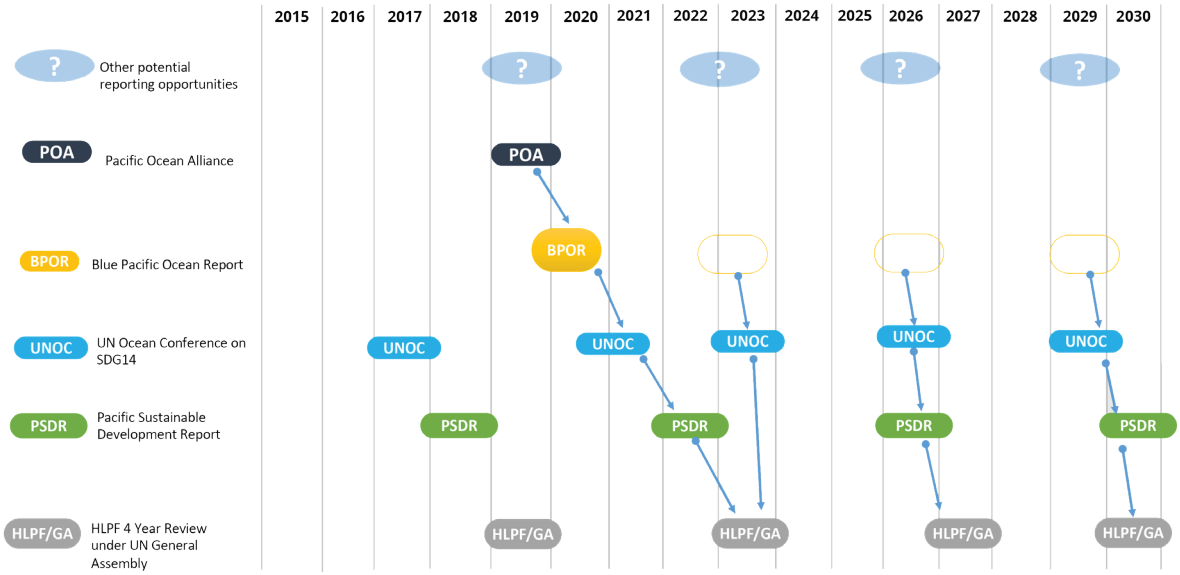
with informed Countries' delegations who were able to clearly manifest their needs aligned with their priorities and preferences. This was not the case with the MSWG as it was established as a CROP mechanism only. CROP Heads recently decided for a review of the ToR of the Marine Sector Working Group as well as a mapping of the work on oceans of the CROP organisations.

In summary, making the technical arms of CROP organisations work in a more coordinated manner (less siloed) to implement the priorities and policies set by the Leaders is critical. As a new decade is starting, it would be beneficial for the region to establish a clear, coherent, and mutually supportive process that links up the regional and global follow up and review processes of the 2030 Agenda of Sustainable Development and other ocean-related commitments. This would address the inconsistencies in reporting and further strengthen implementation of regional and international ocean commitments.

Figure 20:

Schematic of the mandated regional and global processes for reporting on ocean commitments and priorities.

The figure provides options for where the region could set up to clear regional processes to link up to these mandated processes.



International Partners

Efforts within the region alone will not be sufficient. The support of the international community is critical in particular in the context of ocean governance. It is our collective responsibility to engage with these partners and seek their support, know-how and due diligence in taking the necessary actions to ensure a sustainable future for the ocean within and beyond our region.

In addition to Forum Dialogue Partners, a wide range of partners ought to be brought around the conversation table. These include international organisations and financing modalities; international scientific teams; philanthropies; and the private sector. All must also commit to abiding to the regional sets of values and priorities in their genuine and durable partnerships with our countries and our people. The interests of our region and its peoples must be at the core of every single partnership. Respect for our values and priorities must be guiding principles. There should not be exceptions.

Having a dedicated high-level focal point and an official National Ocean Policy makes it easier for one Country to engage on the regional and international stage. It helps Diplomats, in particular those at the UN, to have a clear vision of a Country's ocean priorities and interests to develop positions in international negotiations. They can as a collective regional group know how to best interact with the international community.

The very nature of the ocean and the blue economy makes it a de facto high-level cross sectoral approach that requires constant interactions between various sectors. National preparations for engaging in the BBNJ process highlight this need for constant consultations among government sectors, as well as with other important stakeholders. All areas with relevance to the ocean should be subject to the same cross-sectoral national coordination and understanding.

Successes achieved by Forum Island Members at the international level have demonstrated the powerful strength of collective work. This is achieved if, and only if, they put their collective mind into it and work cooperatively to achieve it, and furthermore they are persistent and consistent in the messaging. SDG 14 would never have been an SDG except for a core group of Pacific Islanders (PSIDS) who decided at the earliest stage that Ocean was to feature prominently there as a standalone goal.

Non-State Actors

The private sector is a critical player in the sustainable blue growth economy. They provide formal employment, investment, social inclusion, and tax revenues. The private sector benefits from the resources of the ocean and has a role/ impact on how sustainable an economy derived from the ocean can be. Close collaboration between the private and public sectors can help unleash important funding and financing. It can also move the sustainable development forward and drive necessary innovation and investment.

Inclusion of the private sector is quite varied in the region. Most Forum island members have established chambers of commerce which are networks of businesses across sectors of the economy of each country. They can provide support to businesses (existing and new ones) and advise/lobby government and public authorities. While some chambers of commerce have thematic working groups, many do not and there is little specific focus on ocean-related themes.

In the French PIF Members of the region, an interesting model is the establishment of "maritime clusters", which are present in both New Caledonia and French Polynesia. These clusters aim to unite private stakeholders around maritime projects, and to promote the creation of economic activities for their members, identify maritime issues and projects, and foster dialogue with public institutions. Both clusters have organized around working groups covering diverse topics from energy, tourism, bioresources, infrastructure, eco-navigation. Their work has contributed to shaping ocean sustainable policies in their respective domestic settings. The New Caledonian and French Polynesian clusters are currently in discussions for an MoU to increase the synergies between the two territories.

In many PIF Members, however, the development of a robust private sector has met with many challenges, including access to financing, including credit, access to adequate infrastructures, or outdated laws. The Pacific Private Sector Development Initiative (PSDI) is a regional technical assistance programme undertaken in partnership with the government of Australia, the government of New Zealand, and the Asian Development Bank to support the development of a strong private sector in the region. It operates in 14 PIF Members.

A network of ocean private organisations (such as the Pacific Island Private Sector Organisation PIPSO and Australia Pacific Training Coalition (APTC) Annual Skills Summit[202]) could further strengthen innovation and development of a Blue Pacific growth and mutually support business and entrepreneurship in the region. Increased in investment in human resources capacity, research, development and innovation, as well as improved legal and fiscal settings could further help develop a thriving private sector able to respond to the specific challenges and opportunities of the Blue Pacific.

IPLCs, Traditional Knowledge and sets of Blue Pacific Values

The Indigenous Peoples Local Communities (IPLCs) have had a significant role in the conservation, management and sustainable use of the ocean and its resources. They hold invaluable knowledge developed through centuries. Their role in shaping and implementing policies and measures is critical to ensure that such policies and measures are effective in so far as they are owned by the very people who depend on the resources and areas for livelihoods. New Zealand, for instance, has developed a range of mechanisms to involve *Tangata Whenua* (indigenous New Zealanders) and ocean stakeholders in decision-making. For example, Mātaitai reserves are marine reserves developed and managed by *Tangata Whenua* that recognise and provide for their special relationship with their traditional fishing grounds. The *i-Taukei* office (Taukei Lands Trust Board TLTB) in Fiji also plays this role in engaging more with IPLC.[202]

[202] https://www.aptc.edu.au/events/pacific-skills-summit

There has been a growing call for the recognition of traditional knowledge as complement to science. Yet, despite these calls, the effective inclusion of traditional knowledge holders at the national and regional levels remain a challenge. Several reasons explain these issues: first, each community has developed its own system of knowledge. They are particularly relevant when designing and implementing measures relevant to that particular locality. At a national level, however, it can be difficult for government to identify representatives of relevant communities. Some countries in the region have established processes to improve the inclusion of IPLC at the national level.

Inclusion of traditional knowledge holders at the regional and global level is where the difficulty arises as there is, at this stage, little constituency. This issue has been raised in the context of the BBNJ negotiations. Identifying relevant groups or individuals is important to maximise inclusivity and the effectiveness of measures and decisions implemented, including at the regional and global levels. Much work is still needed in our region to ensure adequate representation and inclusion that goes beyond mere consultations. Options include working with existing networks of IPLCs and traditional knowledge experts, including from lists of experts participating in regional workshops on CBD and EBSAs matters, the work of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, or the United Nations Permanent Forum on Indigenous Issues. Experts and knowledge holders from these networks could also help in identifying other relevant individuals or groups from a certain country, or culture group, or region. Forum island members themselves could also provide support in identification of relevant IPLCs[203].

Gender Equality Considerations

Progress in achieving gender equality continue to be hampered in the region by social, cultural and economic barriers. These barriers include harmful social norms and exclusionary and discriminatory practices; gender equality not being systematically integrated into legal and policy frameworks and limited resources and capacity within governments to address gender inequality issues and to develop and implement gender responsive policies and programmes.[204]

[203] Mulalap, C.Y. et al. (2020)
[204] PIFS, 2020. First Pacific Biennial Sustainable Development Report, p.25, para 45.

The University of the South Pacific (USP) Marine Science Programme has seen 368 undergraduate students complete their studies in the last decade, 58% of which were women. At the postgraduate level we have seen 49 graduates, 55% of which were women[205].

It is estimated that women carry out almost 50 percent of fishing activities that are crucial to livelihoods across the region. This is much higher than the international average and yet women's contributions to the sector have been largely undocumented[206]. In Fiji, the long-established Women in Fisheries aims to facilitate networks and partnerships to enable opportunities for women to be informed about all aspects of sustainable fisheries. Similar programs are available in the region but much more progress is needed.

With regard to the maritime sector we have the Pacific Women in Maritime Association (PACWIMA). PACWIMA's mission is to enable the visibility of women in the maritime sector and connect, educate and inspire women and promote female maritime professional in the Pacific.

To increase the involvement of women in the maritime sector and in ocean affairs and science we need to create platforms and a forum to:

- Advocate gender equity.
- Promote education, training and career opportunities for women.
- Recognize the social responsibilities relating to women.
- Promote cooperation, friendship and understanding through the exchange of knowledge and the dissemination of information.

[205] From remarks delivered by Ambassador Margo Deiye of Nauru on 30 August 2020 at a "Women in Science" side event at the UNHQ

[206] https://www.spc.int/updates/news/2020/03/new-report-highlights-womens-invisible-roles-in-the-pacifics-fisheries-sector

Inclusivity: the role and place of other stakeholders:

Countries in the Blue Pacific have committed to inclusivity in regional and international ocean governance and management. This inclusivity takes different forms in the region, some being institutionalized while others are on an ad hoc basis.

New Caledonia and French Polynesia, for instance, have established economic, social, cultural and environmental councils whereby representatives of various stakeholders gather in a Parliament-like setting to provide inputs, comments, and recommendations to draft policies, legislations, regulations and other projects. While this process enables input official position and consultation from a wide range of stakeholders, the government and the Assembly are not bound to the views of the councils. However, they enable a formalized process of discussions and consultations, which can improve policy design.

The Pacific Ocean Alliance (POA)

The POA is a regional attempt at inclusivity in ocean governance. It has been established pursuant to action 2B of the FPO which is to "foster partnerships to integrate and implement ocean priorities in the Pacific Plan and other relevant regional and international instruments" and pursuant to action 2C which is to "incorporate sustainable use and development of coastal and ocean priorities in national development policy and planning". It was thus envisioned by Leaders as a mechanism facilitated by the Pacific Ocean Commissioner to provide effective ocean policy coordination and implementation, facilitate regional cooperation for the High Seas, as well as support for national ocean governance and policy processes when required. Furthermore, it was also envisaged to include the context for attention, support and streamlining to achieve national commitments to multilateral environment agreements, as well as to develop and foster regional cooperation[207].

The POA was launched in May 2015 and regroup as an open-ended constituency comprised of stakeholders from the region and beyond. In particular, these stakeholders include governments of the PIF Members, regional and international organizations, academic institutions, non-governmental and not for profit groups, private sector, among others who have interests, projects, programmes on ocean in the Blue Pacific.

The POA aims to complement existing networks of relationships between peers for informing decision making at the national, regional and global levels, across all ocean-related sectors. Coordinated by the OPOC, the POA has met several times since 2015. Most of its meetings focused on BBNJ, which were good opportunities to engage between Pacific negotiators and a wider range of regional stakeholders. Relevant experts from the POA have also been involved in the OPOC-coordinated regional team for regional delegations engaged in the BBNJ negotiations.

In October 2019, the POA met to focus on follow-up to the implementation of regional and international commitments, such as FPO, SDG 14, and the CBD Aichi targets. This meeting also , covered a wide range of ocean-related topics.

While Leaders' ambitions were high for the POA, after five years of operation, the POA has been at most an information-sharing and brain storming network of stakeholders with diverse range of ocean interests. Several sensitive topics were barely discussed due to sensitivities[208]. Inclusive discussions on issues of importance for the region, in particular on topics that could potentially have regional impacts, is critical. Inclusiveness and transparency are two important principles that were at the root of the establishment of the POA and must be upheld; so is learning from each other, which cannot be achieved without open discussions. Leaders have made commitments at the regional and global levels on inclusiveness in policy making and implementation, including through the adoption of the SAMOA Pathway and Agenda 2030 for Sustainable Development. Regional discussions among all stakeholders should not replace such discussions at the national level, and vice versa. The POA has thus a critical role to play.

This raises the question of the representativeness of the POA. Is the POA representative of the wide range of interests in the region, or is its current mode of operation and constitution giving voice to a happy few? All of the POA meetings have been held in Fiji, in a regional hub where many of the CROP organisations and many of the big international NGOs have representation. Government representatives island members are usually provided travel

[208] Recommendations from FPO policy analysis: "An appropriate mechanism should be established, with a broad membership, increased accountability and adequate resources to ensure a heightened awareness and advocacy of ocean issues and priorities and better coordination to improve resource mobilisation efforts for more effective implementation". Pratt, C. and Grovan, H. Our Sea of Islands Our Livelihoods Our Oceania Framework for a Pacific Oceanscape: a catalyst for implementation of ocean policy

support. For other stakeholders, their participation and travel to these meetings is at their own cost. As a result, information shared and topics discussed may be sub regionally skewed. The COVID-19 pandemic demonstrated the usefulness of online sessions, although challenging at times due to time differences as well as connectivity issues. Are these online types of fora for a possible panacea for increase inclusivity in ocean management?

Regardless, from the first five years of implementation of the POA, one can enquire whether this important tool that is the POA has been maximized. Has the POA made good on the ambition to provide effective ocean policy coordination and implementation, facilitate regional cooperation for the High Seas, as well as support for national ocean governance and policy processes when required? At the last meeting of the POA in October 2019, the recommendation was made to develop criteria/tests/methodology to determine the types of issues that would be relevant for the POA to consider. Recommendations provided included issues that: (i) meet the expectation of Leaders; (ii) align with the POA Charter; (iii) are of regional importance given their complex nature (multiple stakes, interests and/or are cross-cutting); (iv) are addressed through an international/multilateral body/process; (v) issues that allow for diverse groups to engage[208]. There was no clarity on who would decide on such criteria/tests/methodology. Neither is there any clarity on how decides what issues are discussed.

Ultimately, how the POA progresses will be determined by the role we want to give non-governmental and non-CROP stakeholders in the design and implementation of our regional ocean policies and programmes.

After 10 years of the FPO and 5 years of the POA, it might be high time for our region and its leaders to assess how to strengthen inclusivity, if indeed this is still an matter of interest and priority. It needs to be done in a meaningful manner. Agreements to disagree and find bridges or compromise are critical to advance such meaningful interactions and ensure that whatever decision is taken will be effective down the line because owned by all.

[209] POA 2019 outcome

Conclusion

The Blue Pacific Ocean is our endowment fund. However, it is both under severe threats and pressures, and its potential for the sustainable development of our region greatly under-tapped by the people the Blue Pacific. Despite a myriad of commitments at all levels, we have yet, as a region, to thrive as true custodians of this great ocean.

Maximizing on the potential benefits from our ocean and its resource will require that we orchestrate a good balance between conservation and sustainable use, anchored in inclusive and integrated management, and fueled by robust investment in our people and infrastructures.

The challenges and opportunities of the Blue Pacific can only be addressed by a Blue Pacific response, and it is time that we understand that as a collective, we have the capacity and capability to reclaim the true meaning of ocean custodianship.

The time is ripe to collectively transform our relationship with the Ocean and return to the Blue Pacific way, with focus on long-term respect for the Ocean and our communities. The covid-19 pandemic has shown that decisive and collective actions are paramount to fighting such global threats and that how model of development ought to also be questioned. The year 2021 opens to a decade of formidable opportunities to change our collective path. With the 2050 Blue Pacific Strategy being elaborated, the BBNJ negotiations drawing to a close, the CBD about to adopt a new framework and a new vision, the decade for successful implementation of the 2030 Agenda, and the start of the UN Decades on Ocean Science and on Ecosystems restoration.

We must focus on effective implementation of all commitments made and aim for adequate and significant actions and impact to ensure a healthy, safe, resilient, productive and thriving Ocean within a vibrant Blue Planet. Effective ocean governance must acknowledge and address the complexity of the ocean, including the complex relationship with humans. It requires ownership by a wide range of stakeholders who each have a role to play and do so in a coherent and coordinated manner, like any species in an ecosystem. This requires sharing a common vision and set of values and abiding to common rules of engagement.

It requires a Framework that is adaptive and flexible to respond to the many challenges facing the ocean; that is inclusive of various stakeholders through an integrated approach, and that sets clear trade-offs through informed, transparent and inclusive decisions.

The Blue Pacific Continent is a region of great challenges but also of great potential which can be tapped into and maximize by collective and coherence action. The 2050 Strategy for the Blue Pacific framed is a formidable opportunity for all of us to build this ambitious plan. It is time for us to decide how we want our Blue Pacific Custodianship to be.

Photo Credit: Pacific Islands Forum Secretariat (PIFS)

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Acronyms

ABNJ: Areas Beyond National Jurisdiction

AUD: Australia Dollar

BBNJ IGC: BBNJ Intergovernmental Conference

BBNJ ILBI: BBNJ Implementing Legally Binding Instrument

BBNJ: Biological Diversity of Areas Beyond National Jurisdiction

CCZ: Clarion-Clipperton Fracture Zone

CI: Conservation International

CITES: Convention on International Trade in Endangered Species of Wild Fauna and Flora

CMM: Conservation and Management Measure

CMS: Convention on the Conservation of Migratory Species of Wild Animals

COTS: Crown of Thorn Starfish

CR: Critically endangered

CROP: Council of Regional Organisations of the Pacific

CSO: Civil Society Organisation

DSM: Deep Seabed Mining

EBSA: Ecologically and Biologically Significant Areas

ECS: Extended Continent Shelf

EDF: European Development Fund

EEZ: Exclusive Economic Zone

EIA: Environmental Impact Assessment

EN: Endangered

FAD: Fishing Aggregating Devices

FAO: Food and Agriculture Organization of the United Nations

FFA: Forum Fisheries Agency

FFC: Forum Fisheries Committee meeting

FOC: Pacific Islands Forum Officials Committee

FPO : Framework for a Pacific Oceanscape

FPR: Framework for a Pacific Regionalism

GDP: Gross Domestic Product

GHG: Greenhouse gas emissions

HMTC: Harmonized Minimum Terms and Conditions for Access by Fishing Vessels

ICT: Information and Communication Technology

ILC: International Law Commission

IMO: International Maritime Organisation

INGO: International Non-Governmental Organisations

IPBES: Intergovernmental Science Policy Platform on Biodiversity and Ecosystem Services

IPCC: Intergovernmental Panel on Climate Change

IPLC: Indigenous People and Local Communities

IPOA: International Plan of Action

ISA: International Seabed Authority

IUCN: International Union for Conservation of Nature

IUU: Illegal, unreported and unregulated

LDCF: Least Developed Country Fund

LMMA: Locally Managed Marine Areas

MARPOL: International Convention for the Prevention of Pollution from Ships

MC: Micronesia Challenge

MCS: Monitoring, Control and Surveillance

MoU: Memorandum of Understanding

MPA: Marine Protected Area

MSP: Marine Spatial Planning

MSW: Municipal Solid Waste

MSWG: Marine Sector Working Group

NDC: Nationally Determined Contribution

NGO: Non-governmental organization

NZD: New Zealand Dollar

ODS: Ozone Depleting Substances

OPOC: Office of the Pacific Ocean Commissioner

OTEC: Ocean Thermal Energy Conversion

PACPLAN: Pacific Islands Regional Marine Spill Contingency Plan

PACPOL: Pacific Oceans Prevention Pollution Programme

PET: Polyethylene Terephthalate

PICRC: Palau International Coral Reef Center

PICT: Pacific Island Countries and Territories

PIF: Pacific Islands Forum

PIFS: Pacific Islands Forum Secretariat

PIPA: Phoenix Islands Protected Area

PIPAP: Pacific Islands Protected Areas Programme

PIROP: Pacific Island Regional Ocean Policy

PMLAP: Pacific Marine Litter Action Plan

PNA: Parties to the Nauru Agreement

PNAO: Parties to the Nauru Agreement Organisation

PNMS: Palau National Marine Sanctuary

POA: Pacific Ocean Alliance

POP: Persistent Organic Pollutants

PSIDS: Pacific Small Island Developing States

PTCN: Pacific Transnational Crime Network

SAMOA Pathway: Small Island Developing States Accelerated Modalities of Action Pathway

SBSTTA: Subsidiary Body for Scientific and Technological Advice

SDG: Sustainable Development Goals

SEA: Strategic Environmental Assessment

SECA: Sulfur Emission Control Areas

SIDS: Small Island Developing States

SOE: State of the Environment

SPC: The Pacific Community

SPREP: Secretariat of the Pacific Regional Environment Programme

SPTO: South Pacific Tourism Organisation

SRCCL: IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems

SROCC: Special Report on the Ocean and Cryosphere1 in a Changing Climate

TK: Traditional knowledge

UN: United Nations

UNCLOS: United Nations Convention on the Law of the Sea

UNDESA: UN Department of Economic and Social Affairs

UNEP: United Nations Environmental Programme

UNESCAP: United Nations Economic and Social Commission for Asia and the Pacific

UNESCO IOC: United Nations Educational, Scientific and Cultural Organisation's Intergovernmental Oceanographic Commission

UNESCO: United Nations Educational, Scientific and Cultural Organisation

UNFCCC: United Nations Framework Convention on Climate Change

UNFSA: UN Fish stock Agreement

UNGA: United Nations General Assembly

UNSG: United Nations Secretary General

USD: United States of America Dollar

USP: University of the South Pacific

VMS: Vessel Monitoring System

VU: Vulnerable

WCP: Waste, Chemicals, and Pollutants

WCPFC: West and Central Pacific Fisheries Commission

WCPO : Convention for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean

WOA: World Ocean Assessment

WWF: World Wildlife Fund/Fund for Nature

Bibliography

1. Allain, V. et al., (2008) Deep-Sea Research I 551035–1047
2. Aqorau, Transform, (2019) Fishing for Success: Lessons in Pacific Regionalism. Ed. Kathryn Skorkiewicz. ANU
3. Aurescu, Bogdan and Nilüfer Oral, (2020) Sea-level rise in relation to international law: First issues paper by Co-chairs of the Study Group on sea-level rise in relation to international law. ILC, 72 session. UNGA A/CN.4/740
4. Australia National Tourism Satellite Account, Key indicators for 2018-2019: https://www.tra.gov.au/economic-analysis/economic-value/national-tourism-satellite-account/national-tourism-satellite-account
5. Australia's statistics department (www.abs.gov.au),
6. Bagley, M. et al.; (2020) Fact-finding Study on How Domestic Measures Address Benefit-sharing Arising from Commercial and Non-commercial Use of Digital Sequence Information on Genetic Resources and Address the Use of Digital Sequence Information on Genetic Resources for Research and Development. CBD/DSI/AHTEG/2020/1/5
7. Blasiak, R., R. Wynberg, K. Grorud-Colvert, S. Thambisetty, et al. (2020) The Ocean Genome: Conservation and the Fair, Equitable and Sustainable Use of Marine Genetic Resources. Washington, DC: World Resources Institute. Available online at http://www.oceanpanel.org/blue-papers/ocean-genome-conservation-and-fair-equitable-and-sustianable-use-marine-genetic
8. Bratman, G.N et al (2019) Nature and mental health: An ecosystem service perspective. Science Advances. 24 Jul 2019: Vol 5, no7, available at: https://advances.sciencemag.org/content/5/7/eaax0903.full

9. Brouwer, Stephen (2018) The western and central Pacific tuna fishery: 2018 overview and status of stocks / Stephen Brouwer, Graham Pilling, John Hampton, Peter Williams, Matthew Vincent and Thomas Peatman (Tuna Fisheries Assessment Report, no. 19 / Pacific Community) ISSN: 1562-5206

10. Castañeda Camey, I., Sabater, L., Owren, C. and Boyer, A.E. (2020). Gender-based violence and environment linkages: The violence of inequality. Wen, J. (ed.). Gland, Switzerland: IUCN. 272pp

11. Chami, R. et al (20190 Nature's solution to climate change: A strategy to protect whales can limit greenhouse gases and global warming. Finance and Development. IMF

12. Cook Islands (2016) Marae Moana Policy 2016-2020. https://policycookislands.files.wordpress.com/2017/05/2016_marae-moana-policy-2016-2020_final.pdf

13. Ed., (2020) Cabinet passes the Niue Moana Mahu Marine Protected Area Regulations 2020. https://tvniue.com/2020/04/cabinet-passes-the-niue-moana-mahu-marine-protected-area-regulations-2020/

14. ENB, (2020) 1st Part of the 26th Annual Session of the ISA. Kingston, 17-21 Feb 2020. https://enb.iisd.org/oceans/isa/2020-1/

15. FAO (2018) Impacts of climate change on fisheries and aquaculture: Synthesis of current knowledge, adaptation and mitigation options. FAO Fisheries and aquaculture Technical Paper 627)

16. Fenichel, E.P., B. Milligan, I. Porras et al. (2020) National Accounting for the Ocean and Ocean Economy. Washington, DC: World Resources Institute. Available online at https://www.oecanpanel.org/blue-papers/national-accounting-ocean-ocean-economy

17. FFA TRADE AND INDUSTRY NEWS. Vol.13: Issue 3 May - June 2020. https://www.ffa.int/node/2449

18. FFA, SPC (2015). Future of Fisheries: A Regional Roadmap for Sustainable Pacific Fisheries: Objective 4

19. FFA (2019) Tuna Score Card.

20. FinLess Food website: https://finlessfoods.com/

21. FORWARD (2020). Pacific Tourism: COVID 19 Impact & Recovery: Sector Status Report: Phase 1B. SPTO and MFAT.

22. French Polynesia & ADEME, Plan Climat-Energie de la Polynésie Française 13 (2012) https://polynesie-francaise.ademe.fr/

23. French Polynesia Climate-Energy plan, projects implementation:http://www.plan-climat-pf.org/public/index.php?rub=projet&id=6 accessed 25 May 2020

24. French Polynesia (2019) Government Report to the French Polynesian Assembly in advance of the 2020 budget debate, Papeete, French Polynesia.

25. Friends of the Ocean Action (2020) The Ocean Finance Handbook

26. Gassner, P., Westerveld, L., Abeta, R., Macmillan-Lawler, M., Davey, K., Baker, E., Clark, M., Kaitu'u, J., Wendt, H., Fernandes, L. (2019) Marine Atlas. Maximizing Benefits for Kiribati. MACBIO (GIZ/IUCN/SPREP): Suva, Fiji. 72 pp

27. GBRMPA. (2014). Great Barrier Reef outlook report 2014. Great Barrier Reef Marine Park Authority, Townsville.

28. Gilbert A, Guillemot N, Andreoli R (2018) Review and recommendations regarding human activity surveillance technologies in Pacific marine protected areas. AFB and Pacific Biodiversity Blue Belt Project, 140p. (p26)

29. Gillett, R. D (2016) Fisheries in the Economies of Pacific Island Countries and Territories. SPC

30. Gilman, E., et al., (2006) Pacific Island Mangroves in a Changing Climate and Rising Sea. UNEP Regional Seas Reports and Studies No. 179. United Nations Environment Programme, Regional Seas Programme, Nairobi, Kenya.

31. Govan H, Aalbersberg W, Tawake A, Parks J (2008) Locally-Managed Marine Areas: A Guide to Supporting Community-based Adaptive Management. Suva

32. Graham, N. et al (2018) Seabirds enhance coral reef productivity and functioning in the absence of invasive rats. Nature | VOL 559 | 12 JULY 2018, p250-235

33. Greenhill, L, JG Day, A Hughes and MS Stanley (2016), Marine Renewable Energy. Commonwealth Blue Economy Series, No. 4. Commonwealth Secretariat, London

34. Haugan, P.M., L.A. Levin, D. Amon, M. Hemer, H. Lily and F.G Nielsen. (2019) What role of Ocean-Based Renewable Energy and Deep Seabed Minerals in a Sustainable Future? Washington, DC: World Resources Institute. www.oceanpanel.org/blue-papers/ocean-energy-and-mineral-sources

35. Herner, M et al (2018), Perspectives on a way forward for ocean renewable energy in Australia; Vo 127. Renewable energy

36. Hill. J et al (2019) The disjuncture between regional ocean priorities and development assistance in the South Pacific

37. Hoegh-Guldberg, O. et al. (2016) Reviving Melanesia's Ocean Economy: The Case for Action – 2016, Summary. WWF International, Gland, Switzerland

38. Hoegh-Guldberg, O. et al. (2016) Reviving Melanesia's Ocean Economy: The Case for Action – 2016, Summary. WWF International, Gland, Switzerland

39. Hughes, Kristin, May (2020) Protector or Polluter? The Impact of COVID-19 on the Movement to End Plastic Waste: https://www.greenbiz.com/article/protector-or-polluter-impact-covid-19-movement-end-plastic-waste

40. Hwang, Jangsun et al (2015) "Biomimetics: forecasting the future of science, engineering, and medicine." International journal of nanomedicine vol. 10 5701-13. 8 Sep. 2015, doi:10.2147/IJN.S83642

41. IFAW, SPREP (2010) Marine Mammals and the Marine turtles of the Pacific Islands Region: A concise and comprehensive waterproof guide. https://www.wcpfc.int/system/files/Marine_mammals_turtles_PacificIs_IFAW_SPREP.pdf

42. IFRECOR (2016) Economic value of coral ecosystems in French overseas territories. https://www.iyor2018.org/wp-content/uploads/2017/12/Plaquette-ValoEco_Synthese-EN-web.pdf.

43. IMO, Statement attributable to the Spokesman for the Secretary-General on the repatriation of seafarers, 12 June 2020. https://www.un.org/sg/en/content/sg/statement/2020-06-12/statement-attributable-the-spokesman-for-the-secretary-general-the-repatriation-of-seafarers

44. Inputs from French Polynesia Maritime Cluster

45. Intergovernmental Science Policy Platform on Biodiversity and Ecosystem Services (IPBES): (2019) "Global Assessment Report on Biodiversity and Ecosystem Services"

46. IOC (2017) Global Ocean Science Report

47. IPCC (2019). IPCC report on climate change, the ocean and cryosphere

48. IPCC (2018) "Global Warming of 1.5°C. An IPCC special report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty" (SR1.5). ipcc.ch/sr15

49. IPCC (2019) "Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems" (SRCCL). Ipcc.ch/srccl

50. IPCC (2019) "Special Report on the Ocean and Cryosphere1 in a Changing Climate" (SROCC) ipcc.ch/srocc

51. IRENA (2013); Pacific Lighthouse: renewable energy opportunities and challenges in the Pacific Islands Region: FSM

52. IRENA (2019) RE statistics https://www.irena.org/ocean , accessed 21 May 2020

53. IRENA, SPC, PPA (2017). Kiribati Integrated Energy Roadmap: 2017-2025. Annex 1.

54. ISA (2018) Deep Seabed Mining and Submarine Cables: Developing Practical Options for the Implementation of the 'Due Regard' and 'Reasonable Regard' Obligations under UNCLOS: Report of the Second Workshop. Bangkok.

55. ISA (2019) MIT study; ISBA/25/C/8

56. Lapvena, A. et al (2020). Report to the International Seabed Authority: Study of the Potential Impact of Polymetallic Nodules Production from the Area on the Economies of Developing Land-based Producers of those Metals which are Likely to be Most Seriously Affected.

57. Leary, D, M Vierros, G Hamon, S Arico and C Monagle, 'Marine Genetic Resources: A Review of Scientific and Commercial Interest' (2009) 33(2) Marine Policy

58. Levin, L. et al. (2019) Climate Change Considerations are Fundamental to Sustainable Management of Deep-Seabed Mining. DOSI Policy Brief

59. lmmanetwork.org

60. Logistics Cluster /WFP, Shipping Operation, Weekly Bulletin, 10 June 2020

61. MACBIO website: http://macbio-pacific.info/

62. Mazzega, P., et al., (2020) Global Challenges Research Fund - One Ocean Hub

63. Mcdonald, Joshua. Kiribati announces plans to raise Islands above rising seas. The Diplomat. 14 August 2020. https://thediplomat.com/2020/08/kiribati-announces-plans-to-raise-islands-above-rising-seas/)

64. Minister Kabua, at Virtual Ocean Dialogues, June 2020

65. Morgan, Wesley. Oceanic hydro-politics: Exploring contemporary geopolitics of the Blue Pacific. Griffith Asia Institute. Regional Outlook Paper No.67, 2020

66. Moritz C, Vii J, Lee Long W, Tamelander J, Thomassin A, Planes S (editors). (2018) Status and Trends of Coral Reefs of the Pacific. Global Coral Reef Monitoring Network

67. Morris, James. "Tesla's Shift To Cobalt-Free Batteries Is Its Most Important Move Yet". Forbes. 11 July 2020. https://www.forbes.com/sites/jamesmorris/2020/07/11/teslas-shift-to-cobalt-free-batteries-is-its-most-important-move-yet/#4116d66446b4. Consulted on 12 July 2020

68. MRAG, (2016) Towards the Quantification of Illegal, Unreported and Unregulated (IUU) Fishing in the Pacific Islands Region. FFA

69. Mulalap et al, (2020). Traditional knowledge and the BBNJ instrument. Marine Policy, Vol 122

70. New Caledonia Government. Mer de Corail website : https://mer-de-corail.gouv.nc/en

71. New Zealand Department of Conservation (2007). Whales in the South Pacific. https://www.doc.govt.nz/documents/conservation/native-animals/marine-mammals/whales-in-the-south-pacific.pdf

72. New Zealand energy efficiency and conservation authority. https://www.eeca.govt.nz/energy-use-in-new-zealand/renewable- energy-resources/marine/; accessed 21 May 2020

73. New Zealand (2019) Voluntary National Review

74. New Zealand's statistics department www.stats.govt.nz

75. NZ Ministry for Primary Industries. NABIS: National Aquatic Biodiveristy Information System. https://maps.mpi.govt.nz/templates/MPIViewer/?appid=96f54e1918554ebbaf17f965f0d961e1

76. Observatoire des requins de Polynésie. http://orp.pf/index.php

77. One Planet Sustainable Tourism Programme (2020) - One Planet Vision for a Responsible Recovery of the Tourism Sector

78. OPOC and POA (2015) BBNJ: Technical Report for the Pacific Islands Region.

79. OPOC: 2019 POA outcomes report

80. OPOC, 2019. POA technical brief: Stewardship of the Ocean

81. OPOC, 2019. POA technical paper on SROCC

82. OPOC, 2020. Pacific Ocean Alliance Report 2020

83. Ortuno Crespo, G. et al, (2020) 'Beyond static spatial management: Scientific and legal considerations for dynamic management in the high seas' Marine Policy.

84. Pacific Catastrophe Risk Assessment and Financing Initiative: Better Information for Smarter Investments. http://pcrafi.spc.int/

85. Pacific E-waste: A Regional Strategy and Action Plan 2012 (SPREP, 2012);

86. Pacific Fusion Centre (2020) Aerial Surveillance – Shaping National Maritime Responses. Strategic Analytical Report. 17 July 2020.

87. Pacific Fusion Centre (2020) Maritime Security in the Pacific. Strategic Analytical Report. July 2020

88. Pacific R2R Ridge to Reef project: https://www.pacific-r2r.org/resource-library?term_node_tid_depth=21

89. Palau National Marine Sanctuary Act Overview. http://picrc.org/picrcpage/wp-content/uploads/2019/12/PNMS-Act-Overview-2019AUG20.pdf

90. Palau NEPC (2019) 2019 State of the Environment Report, Republic of Palau. National Environmental Protection Council (NEPC), Government of Palau: Koror, Palau.

91. Papua New Guinea National Oceans Policy (2020-2030). Department of Justice and Attorney General. http://www.justice.gov.pg/

92. PIFS (2010) Framework of Pacific Oceanscape https://www.forumsec.org/wp-content/uploads/2018/03/Framework-for-a-Pacific-Oceanscape-2010.pdf

93. PIFS (2014) Framework for Pacific Regionalism. Available at: https://www.forumsec.org/wp-content/uploads/2018/02/Framework-for-Pacific-Regionalism_booklet.pdf

94. PIFS (2014) Palau Ocean Declaration

95. PIFS (2018) First quadrennial Pacific Sustainable Development Report, Suva

96. PIFS (2019) Fiftieth Pacific Islands Forum Communiqué, Funafuti, 13-16 August 2019

97. PIFS (2019) Kainaki II Declaration

98. PIFS (2019) Pohnpei Ocean Declaration.

99. PIFS (2019) State of Pacific Regionalism, 2019 Report, Suva.

100. PIFS (2020) First Pacific Biennial Sustainable Development Report

101. Pratt, C. and Govan H. (2009) Policy Analysis: Framework for the Pacific Oceanscape: A catalyst for implementation of ocean policy.

102. Republic of Marshall Islands (2018) Tile Til Eo 2050 CLIMATE STRATEGY "Lighting the way

103. Senina, I, et al. (2018). Impact of climate change on tropical tuna species and tuna fisheries in Pacific Island waters and high seas areas. Final Report (CI-3) for SAN 6003922. Developed for Conservation International (CI) as part of the GEF-funded, World Bank implemented Ocean Partnerships for sustainable fisheries and biodiversity conservation (OPP), a sub-project of the Common Oceans ABNJ Program led by UN-FAO.

104. Shirouzu, N. and Paul Lienert. Exclusive: Tesla's secret batteries aim to rework the math for electric cars and the grid. Reuters. 14 May 2020. https://www.reuters.com/article/us-autos-tesla-batteries-exclusive-idUSKBN22Q1WC

105. Smith, Craig R. et al (2020) Deep-Sea Misconceptions Cause Underestimation of Seabed-Mining Impacts. Science and Society. 31 July 2020. https://doi.org/10.1016/j.tree.2020.07.002

106. Smith, K. (2014) Implementation of electronic monitoring and reporting in the WCPFC: Assessing possible impacts on employment in Small Island Developing States. Discussion Document. WCPFC

107. Smyth, C., and Quentin Hanich. (2019) Large Scale Marine Protected Areas Current status and consideration of socio-economic dimensions.

108. Solomon Islands State of Environment Report (2019) Apia, Samoa SPREP

109. Spalding M, Kainuma M, Collins L (2010). World Atlas of Mangroves (version 3). A collaborative project of ITTO, ISME, FAO, UNEP-WCMC, UNESCO-MAB, UNU-INWEH and TNC. London (UK): Earthscan, London. data.unep-wcmc.org/datasets/5

110. SPC (2013) Deep Sea Minerals: Sea-Floor Massive Sulphides, a physical, biological, environmental, and technical review. Baker, E., and Beaudoin, Y. (Eds.) Vol. 1A.

111. SPC (2015) A New Song for Coastal Fisheries – Pathway to Change: The Noumea Strategy. Adopted by the 9th Conference of SPC Fisheries Directors in Noumea in March 2015.

112. SPC (2016) Workshop on South Pacific freshwater eels, Suva, Fiji, 13-15 August 2016: Current knowledge and future research, Noumea, New Caledonia

113. SPC (2017) Conservation and Utilisation of South Pacific freshwater eels. Policy Brief 29, Noumea, New Caledonia.

114. SPC (2018) Pacific Community results report, including Foreword from Dr Colin Tukuitonga, former Pacific Community Director-General

115. SPC (2019) 2019 Energy & Transport Ministers Meeting

116. SPC (2020) New Report Highlights Women's Invisible Roles in the Pacific's Fisheries Sector. SPC. Suva, Fiji. Available at https://www.spc.int/updates/news/2020/03/new-report-highlights-womens-invisible-roles-in-the-pacifics-fisheries-sector

117. SPC, FFA (2015) Regional Roadmap for sustainable Pacific Fisheries

118. SPC, Scaling-up community-based fisheries management, information paper 6, 3rd SPC Regional Technical Meeting on Coastal Fisheries

119. SPREP (2010) The Pacific Regional Solid Waste Management Strategy 2010-2015

120. SPREP (2011) An Asbestos-Free Pacific: A Regional Strategy and Action Plan 2011

121. SPREP (2013) Pacific Health Care Waste: A Regional Management Strategy and Action Plan 2013-2015, Apia, Samoa.

122. SPREP (2015) Pacific Ocean Pollution Prevention (PACPOL) Strategy 2015-2020.

123. SPREP (2016) State of Conservation in Oceania: regional report. Apia, Samoa.

124. SPREP (2018) Pacific Marine Action Plan: Marine Litter 2018-2015. Apia, Samoa

125. SPREP, UNEP (2017). Ocean Acidification Brief. UNOC 1. ocean-acidification-pacific.pdf

126. SPREP. World Database on Protected Area.

127. Stuart Minchin, Director-General Pacific Community (SPC) Noumea- 5 June 2020. More examples: https://www.spc.int/updates/news/2019/10/reducing-greenhouse-gas-emissions-in-maritime-sector-saving-thousands-for-boat

128. Te Ohu Kaimoana - Aotearoa/New Zealand submission to OPOC, May 2020

129. Temmink, R.J.M., Christianen, M.J.A., Fivash, G.S. et al (2020) Mimicry of emergent traits amplifies coastal restoration success. Nat Commun 11, 3668. https://doi.org/10.1038/s41467-020-17438-4

130. The Millennium Ecosystem Assessment: https://www.millenniumassessment.org/documents/document.765.aspx.pdf

131. Tonga Voluntary National Report, 2019

132. Tuilaepa Sailele Malielegaoi. Statement by Prime Minister of Samoa, UN Oceans Conference, 5th June 2017, New York

133. UN Decade of Ocean Science for Sustainable Development (2020) Implementation Plan.

134. UN Environment Programme (2019) Analysis of Policies related to the Protection of Coral Reefs-Analysis of global and regional policy instruments and governance mechanisms related to the protection and sustainable management of coral reefs. United Nations Environment Programme, Nairobi, Kenya.

135. UN Environment Program, ISU, ICRI and Trucost (2018) The Coral Reef Economy: The business case for investment in the protection, preservation and enhancement of coral reef health. https://www.forumsec.org/wp-content/uploads/2018/02/Framework-for-Pacific-Regionalism_booklet.pdf

136. UNESCAP (2020) Changing Sails: Accelerating Regional Actions for Sustainable Oceans in Asia and the Pacific.

137. UNESCO Pacific and ICHCAP (2013) Traditional Knowledge for Adapting to Climate Change: Safeguarding Intangible Cultural Heritage in the Pacific. https://www.sprep.org/attachments/VirLib/Regional/traditional-knowledge-adapting-climate-change.pdf

138. UNESCO (2010) Underwater Cultural Heritage in Oceania.

139. UNESCO-IOC (2017) Global ocean science report: the current status of ocean science around the world (available at: https://unesdoc.unesco.org/ark:/48223/pf0000250428_eng)

140. UNESCO-IOC. Ocean Decade website: www.oceandecade.org

141. UNESCO-WHC. World Heritage List. https://whc.unesco.org/en/list/

142. UNGA (2009) On security implications of climate change. RES/63/281

143. UNGA (2012) The Future We Want Res 66/288

144. UNGA (2015) A/Res/70/1 – Transforming our world: the 2030 Agenda for Sustainable Development. UNGA, 25 September 2015

145. UNGA (2016) Report of the work of the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea at its seventeenth meeting. A/71/204

146. UNGA (2018) Report on the work of the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea at its nineteenth meeting. A/73/124

147. United Nations (1982) United Nations Convention on the Law of the Sea (UNCLOS)

148. United Nations (2016) The First Global Integrated Marine Assessment: World Ocean Assessment I (WOA I) by the Group of Experts of the Regular Process. https://www.un.org/regularprocess/sites/www.un.org.regularprocess/files/woacompilation.pdf

149. UNOCHA (1998) Papua New Guinea - Tsunami OCHA Situation Report No. 9. https://reliefweb.int/report/papua-new-guinea/papua-new-guinea-tsunami-ocha-situation-report-no-9

150. UNSGA (2019) UNSG report on Oceans and the law of the sea. A/74/70,

151. Vanuatu National Ocean Policy. 30 May 2016. https://www.nab.vu/sites/default/files/documents/Vanuatu_National_Ocean_Policy_High_Res_020616.pdf

152. Viana, G (2011) The socio-economic value of the shark-diving industry in Fiji.

153. Vianna GMS, Meekan MG, Pannell D, Marsh S, Meeuwig J, (2010) Wanted Dead or Alive? The relative value of reef sharks as a fishery and an ecotourism asset in Palau. Australian Institute of Marine Science and University of Western Australia, Perth.

154. Vidal, E. et C.E Payri. (2019) Biodiversité en Océanie, un besoin urgent d'action. Presses Universitaires de la Nouvelle Calédonie.

155. WCPFC (2020) Overview of Tuba fisheries in the Western and Central Pacific Ocean, including economic conditions – 2019.. WCPFC-SC16-2020/GN IP-1rev 3. https://www.wcpfc.int/node/46580

156. WHO Western Pacific, Mental Health portal. https://www.who.int/westernpacific/health-topics/mental-health/5?platform=hootsuite

157. WHO: https://www.who.int/westernpacific/activities/protecting-the-islanders-from-climate-change-and-environmental-hazards

Photo Credit: Pacific Islands Forum Secretariat (PIFS)

ANNEX 1

Status of Marine Ecosystems

Ecosystem	Description and key facts	State
Mangroves	cover an estimated 15,000 km2, about 10% of the world's mangroves largest areas in: Australia: 0.9 million km2 and more than half of the world's species Papua New Guinea: 372,770 ha Solomon Islands: 64,200 ha Fiji: 41,000 ha New Caledonia: 20,250 ha Functionally linked to ecosystems, including seagrass beds, coral reefs and upland habitat Mangroves of low islands and atolls (dependent on sediment supply from productive coral reefs), may experience lower sedimentation rates and increased susceptibility to relative sea level rise if coral reefs become less productive due to climate change and sea level rise. Mangroves of oceanic nature have low vulnerability to sea level rise.	Unknown: Little monitoring so trends in area or health not well known
Seagrass	Most seagrasses in the tropical Pacific are found in waters shallower than 10 metres and usually close to shores. PICTs often support large areas of seagrass, extending long distances away from the shoreline in lagoons and sheltered bays and adjoining coral reefs.	Overall trend is towards degradation: Many local reports of individual seagrass beds being destroyed by physical development related processes or increased sedimentation. Detailed information on seagrass health is lacking across the Pacific.

Services Provided	Pressures and Threats	Management Measures
protecting coastlines and coastal development from natural hazards, supporting water quality, breeding habitats for fish, crustacean and other species, materials for traditional practices (dye for tapa, to treat textiles, nets, and fish traps) Economic services: Est. value: between USD 200,000 -- 900,000 per ha (est. cost of mangrove restoration USD 225 -- 216,000 per ha.) Est. value for Melanesian countries: USD 109.6 Bn Carbon sequestration: in general, 4x as much as tropical rainforests; in Palau and Yap: 2x as much as tropical moist upland forests in Brazil and Mexico	habitat conversion and reclamation for urban housing and industrial and tourism-related development, conversion for aquaculture and agriculture, pollution, including disposal of solid waste, overharvesting of resources for fuelwood and housing materials, fungal infection, Extreme weather events, such as droughts Impacts from these pressures, individually and cumulated, will be further exacerbated by climate change and population growth and will contribute to reducing their resistance and resilience to the additional stress of sea level rise and climate change Because of functional linkage with other ecosystems, mangroves to be impacted if these other ecosystems decline	Important considerations for improved mangroves management: Establish baseline assessments on mangroves to support monitoring efforts to better inform decision makers Strengthen collaboration at all levels to share research finds, lessons learned and best practices to improve the governance efforts Recognize role of traditional management as a complement to science-based approach Establish ridge-to-reef conservation, management and monitoring approach to take into account the ecological connectivity that characterizes these ecosystems with others, including cloud forest, riparian forest, groundwater systems and subterranean flows, forests, agricultural wetlands and estuaries
Nursery areas for commonly harvested fish and invertebrates, Feeding habitats for many species of fish as well as sea turtles and dugongs. Permanent habitats for several species of sea cucumbers, the main group of invertebrates targeted as an export commodity in the region, and for a wide range of mollusks Improve water quality by trapping sediments, nutrients and other pollutants Carbon sequestration: 50% of total carbon sequestered in all marine sediment	Movement of nutrients, detritus, prey and consumers between mangrove, seagrass and intertidal habitats can have major effects on the structure and productivity of food webs increased water turbidity from watershed logging, mining, coastal development and agriculture Climate change threatens large areas of seagrass as a result of increased heat stress, sedimentation and turbidity due to higher rates of runoff, rising sea levels, and possibly more physical damage from the combination of sea-level rise and severe cyclones and storms. Est. amount of seagrass likely to be lost due to climate change: 5 - 30% across the region by the year 2035.	Improving the management and conservation status through ridge to reef approach that takes into account the connectivity between various ecosystems as well as the cumulative impacts of existing human activities as well as effects of climate change.

Warm water Coral Reefs	The Blue Pacific Continent is home to over 40% of the world's coral reefs. 9 of the Blue Pacific members are part of the top 25 coral reef states that are home to 85% of the world's coral reefs Many reef types: fringing, barrier, double barrier, submerged barrier, platform, patch, oceanic ribbon, midocean, atolls, oceanic atolls and near-atolls. At the base of these various types is one simple symbiotic relationship between a coral structure and an algae, the zooxanthellae, which is very sensitive to slight changes in water conditions. This makes coral reefs very vulnerable to disturbances and at risks to pressures both localized and global. Connectivity between one coral reef system to another have been studied, including across high seas: for instance, there is connectivity between Yap and Palau coral reefs Since the start of the twenty first century, five mass coral bleaching events were recorded (2002, 2006, 2016 and 2017). A coral bleaching mass event is currently undergoing in the Great Barrier Reefs, the third in 5 years. Coral reefs are important yet vulnerable bedrocks whose salvation require a holistic, inclusive, integrated approach that aims to prevent local threats to improve the resilience to global threats, while at the same time imperatively and significantly decrease GHG emissions. Coral reefs in the Pacific are dynamic and recovery is likely to occur comparatively rapidly as long as local pressures and disturbance are well managed.	Many of the reefs in the Pacific have shown great resilience and are currently in reasonable coral health. The trends in coral cover vary considerably from country to country, and from areas to areas. Live coral cover in the Pacific averaged 25.6% over the years monitored. It varies from year to year but was quite stable. There was a decline of 3% in live coral cover between 1999 and 2016 but the signal was not strong in the data. The change in dominance of coral taxa may be a sign of a changing coral reef community structure, while the decrease in herbivore fish biomass may be a sign of human impact (Herbivorous fish biomass has nearly halved in the last 12 years on inhabited islands. Mostly from overfishing of surgeon fish. This can have serious effects on ecosystem function and the ability of reefs to recover from serious events). Together these patterns suggest that, even at the Pacific scale, in an area considered less impacted than other regions in the world, coral reefs are changing. Quantifying how much the present functions of coral reefs will be affected, and how many services to humans will be altered, forms a real challenge that local communities have to face. Some concerning issues to be addressed will be: future growth and erosion of reefs and their contribution to shoreline protection (absorbing energy of ocean swells and storm waves); impacts on food productivity under modified reef habitat structures and food chains At individual locations, the reefs have been under the influence of occasional acute disturbances, with strong reduction in coral cover, but have often recovered well. Such disturbances, and recoveries, were not uniform across the Pacific Island region.

	Home to ¼ of all marine life Source of food (coastal fish, seafood) Coastal protection Construction materials (sand, 'coral soup') Significant economic development (through tourism and recreational activities) Cultural significance (incl. myths and legends) Potential development of pharmaceutical and cosmetic products Carbon sequestration	Urbanization coastal development: coastal engineering, land filling, runoff from coastal construction, sand and coral mining, sewage discharge and impacts from unsustainable tourism watershed-based pollution: erosion and nutrient fertiliser runoff from agriculture marine-based pollution and damage: solid waste, nutrients, toxins from oil and gas installations and shipping, and physical damage from anchors and ship groundings Overfishing and destructive fishing: unsustainable harvesting of fish or invertebrates as well as damaging fishing practices, such as the use of explosives or poisons Invasive species Alien species from ballast water; crown of thorns starfish Drupela snails Diseases Climate change and extreme weather-related impacts (including ENSO) Increase in sea surface temperature Cyclones and damages Rapid increase in sea level Ocean Acidification On coral bleaching: Coral reefs are susceptible to increased temperature stress irrespective of their proximity to human populations (see impacts of global coral bleaching event since 2014). The weaker the reefs (from direct and localized pressures), the less likely it is to rebound to coral bleaching.	Integrated, ridge to reef approach effective in lessening pressures and contribute to improving their resilience to climate change impacts and ocean acidification Identify, prioritise and implement actions that reduce local, chronic pressures on coral reefs arising from land use, land use change and coastal development. Stress reduction efforts require specific considerations of coral reefs in broader, integrated development and management planning processes at national level. Strengthen implementation, compliance, and enforcement of fisheries legislation regulation and enforcement: halt decline in herbivorous fish, and by further expand marine area-based management Improve monitoring of coral reefs health Adopt inclusive management method that empowers local communities, including fisher folks and other stakeholders Ambitious and significant GHG emission reductions. SPREP is preparing Coral Reefs Strategy, but only for PICTs

Seamounts	Over 4,000 seamounts in the region. Of these, 2,285 are in PIF Members EEZ and 288 in five PIF observers. Seamounts are reservoirs of wide biodiversity supporting high animal densities and biomass including cold water corals, sponge, and bryozoan reefs. Function as biodiversity hotspots and support larval dispersal	Due to their relative remoteness from urban centers, seamounts are less impacted by pollution and direct human disturbances.
Deep seabed	Over 80 separate basins or depressions in the sea floor comprise the hadal zone, dominated by 7 great trenches (>6500 m) around the margins of the Pacific Ocean, five of which extend to over 10 km depth: the Japan-Kuril-Kamchatka, Kermadec, Tonga, Mariana, and Philippine trenches. The deep-sea environment is rich in fauna, home to a variety of novel habitats, spatially variable on fine scales, and seasonally variable in some regions. The deep sea contains some of the most intact biological communities on Earth, and its biodiversity is estimated to exceed that of coastal ecosystems. In addition, the deep seabed is also endowed with a wealth of mineral resources. There are three main types of polymetallic mineral deposits that occur on the deeper part of the global ocean, namely (i) Seafloor Massive Sulphides (SMS), (ii) Manganese Nodules (MN), and (iii) Cobalt-rich Crusts (CRC). Mineral deposits that occur on the continental shelf of the coastal state, including their extended continental shelf, are under the sovereignty of the coastal states. Mineral resources on the seabed beyond national jurisdiction, defined by UNCLOS as the Area, are common heritage of humankind and as such, are managed by the international seabed authority (ISA).	Untouched so far but unknown

	Host substantial aggregations of commercial fish, with annual landings of primary seamount species averaging 100,000 t a year since the 1990s, dominated by oreosomatids and orange roughy Reservoirs of minerals: ferromanganese crusts that contain cobalt, nickel, and rare earth elements used in high-tech industries and which may have commercial potential.	Litter and plastic debris Bottom trawl fishing Climate change impacts, in particular warmer sea temperature, decrease in oxygen, and increased ocean acidification, will modify deep sea ecosystems including with potential decline in faunal biomass.	Management of activities, including bottom trawling Addressing the impacts of climate change Establish protection measures in particular around feeding or reproductive grounds
	Potential to unlock new promising drugs or other biotechnologies. Wealth of mineral resources for high technology potential	These trenches are often at the intersection of tectonic plates, exposing them as potential epicenters of severe earthquakes which can directly cause local and catastrophic disturbance to the trench fauna.	WOA II, p417: New Zealand EEZ: 88% active hydrothermal vents are MPAs. New Caledonia EEZ (France): shallow vent and unexplored ridge systems in the MPA Parc Marin de la Mer de Corail Mining regulation and environmental policies in several island nations

Pelagic	The water column comprising both waters under national jurisdiction (territorial sea outside of outer reefs to the limits of the EEZ) and beyond national jurisdiction (high seas) are also home to a wide range of ecosystems and species. Explicit connection of the pelagic environment within EEZ to the high seas adjacent to those EEZ	Declining marine biodiversity, in particular migratory predators such as sharks

	Oxygen Carbon sequestration Communications (maritime transport) Biodiversity Potential for scientific knowledge Potential for scientific discoveries: biotechnology, pharmaceuticals, etc. Fish for food security, revenue opportunities, etc.	Climate change impacts Overfishing Pollution from marine debris, ghost gears, nutrient pollution, etc Cumulated impacts of stressors Silo approach to ocean governance and management and competing interests	More enforcement measures in HS Need inter-sectoral cooperation, ocean integrated management Marine spatial planning BBNJ ILBI Management measures for tuna fisheries and the wider pelagic ecosystem that are adopted in-zone by Members, and in the wider pelagic area through e.g. WCPFC

ANNEX 2

2017 UNOC PIF Members-led Voluntary Commitments and their progress overview

Source: https://national.opocbluepacific.net/ & https://oceanconference.un.org/commitments/

Country	2017 Voluntary Commitments	Progress			
	Title of Voluntary Commitment	Action ID/link	No Data	In Progress	Done
Australia (16)	Australia's Integrated Marine Observing System (IMOS) as a contribution to global ocean observing	https://bit.ly/39Nu-wsD			
	Australia State of the Environment	https://bit.ly/3qBOigo			
	Climate and Oceans Support Program in the Pacific (COSPPac)	https://bit.ly/3ghgFvE			
	eReefs catchment and coastal fore casting and satellite-based monitoring of the Great Barrier Reef	https://bit.ly/2VNQK-Cm			
	National Environmental Science Programme: Marine Biodiversity Hub	https://bit.ly/3qCALpc			
	Pacific Maritime Boundaries Project	https://bit.ly/2L8uKjv			
	Threat abatement plan for the impacts of marine debris on vertebrate marine life	https://bit.ly/2LfjMsH			
	Commonwealth Marine Reserves	https://bit.ly/37HeU73			
	Community Based Fisheries Management Phase 2	https://bit.ly/39NV5xJ			
	Coral Triangle Initiative Australian Support Program	https://bit.ly/3qAJUys			
	Ending Illegal Fishing through Improved Surveillance	https://bit.ly/2JyvtKJ			
	Funding to Address Illegal, Unreported and Unregulated Fishing in the Pacific	https://bit.ly/37HKQII			
	Knowledge sharing for the protection and restoration of coastal blue carbon ecosystems through the International Partnership for Blue Carbon and in the Indo-Pacific.	https://bit.ly/39NX98Q			

Country	2017 Voluntary Commitments	Progress			
	Title of Voluntary Commitment	Action ID/link	No Data	In Progress	Done
	Land-based Plastics to the Ocean	https://bit.ly/3mQD-BV8		■	
	Progressing Implementation of the New Song for Coastal Fisheries Pathways to Change	https://bit.ly/37IP2Yr		■	
Cook Is (2)	Marae Moana - Cook Islands Marine Park (Marine Spatial Plan)	(#OceanAction15701)		■	
	Sustainable Financing of Marae Moana (Sustainable Financing Mechanism)	(#OceanAction20139)		■	
Federated Stated of Micronesia (6)	Federated States of Micronesia's 24 Mile Closure (FSM Public Law 19-167)	(#OceanAction16676)		■	
	Country Action on the Parties to the Nauru Agreement's Third Implementation Agreement Program (FSM Public Law 19-169)	(#OceanAction16679)		■	
	Federated States of Micronesia's Shark By-Catch Amendment (FSM Public Law 19-167)	(#OceanAction16682)		■	
	Implementation of the Parties to the Nauru Agreement's Vessel Day Scheme	(#OceanAction16685)		■	
	A Jurisdictional Implementation of the Micronesia Challenge	(#OceanAction16688)		■	
	Chuuk Lagoon Pacific Ocean Emergency Response - Safeguarding Underwater Cultural Heritage	(#OceanAction16691)		■	
Fiji (14)	Protection of Groupers and Coral Trouts Spawning Aggregation Sites across Fijian Reef Systems	(#OceanAction14327)		■	
	Pacific Voices for a Global Ocean Challenge	(#OceanAction16934)		■	
	Sustainable Tourism Development Framework	(#OceanAction19854)		■	
	The Fiji Pearl Development Plan - Creating a Blue Industry	(#OceanAction19864)			■
	Prohibition of Destructive Offshore Fishing Practices	(#OceanAction19879)		■	
	Expansion of Large Scale Marine Managed Areas in Fiji	(#OceanAction19904)		■	

Country	2017 Voluntary Commitments	Progress			
	Title of Voluntary Commitment	Action ID/link	No Data	In Progress	Done
	Delivering Improved Coastal Fisheries Management Services in Fiji	(#OceanAction19929)		■	
	Protection and Management of All Marine Mammal Species in Fiji	(#OceanAction19959)		■	
	Integrated Coastal Management to Preserve Ecosystems Services, Improve Climate Resilience and Sustain Livelihoods in Fiji	(#OceanAction19984)		■	
	Finalization of Fijis Maritime Boundaries and ECS Claims	(#OceanAction19989)		■	
	Introduction of a Plastic Shopping Bag Reduction	(#OceanAction19994)			■
	Conservation and Management of all Species of Sharks and Rays and their Critical Habitats within Fijian Waters	(#OceanAction19999)		■	
	The Incorporation of Ocean Information into the Vanua-GIS Platform	(#OceanAction20014)		■	
French Polynesia (2)	Marine Educational Area Network	(#OceanAction20334)		■	
	Te Tai Nui Atea - Marine Managed Area (5 million km2)	(#OceanAction20294)			■
Kiribati (1)	Kiribati's voluntary commitment: Shark Sanctuary (National Framework and Integrated Action Plan for Sharks)	http://bit.ly/2Q8boeh			■
Nauru (3)	Declaration on Marine Reserves	(#OceanAction18878)		■	
	Nauru Awareness and Beach Clean-up Campaign (1-week beach clean-up in 2018)	(#OceanAction20214)		■	
	Avoid, Intercept, Redesign plastics to save our Ocean (National Marine Pollution Plan of Action, etc.)	(#OceanAction20219)		■	
New Caledonia (1))	Coral Sea Natural Park management plan	https://bit.ly/3qyUGVT		■	
New Zealand (19)	New Zealand Marine Science Investments	https://bit.ly/36Q9G9Y		■	

Country	2017 Voluntary Commitments	Progress			
	Title of Voluntary Commitment	**Action ID/link**	**No Data**	**In Progress**	**Done**
	Climate change and ocean acidification: risks and opportunities for the seafood industry. Review project	https://bit.ly/2K06C1S			
	New Zealand Fisheries Policy Reform: Future of Fisheries	https://bit.ly/3m-W9tYE			
	Review of Hector's and Maui dolphin Threat Management Plan	https://bit.ly/2IjZHjM			
	Estuary protected areas reporting	https://bit.ly/2L66aji			
	Threat Management Plan for the New Zealand Sea Lion 2016-2017	https://bit.ly/3orS8XK			
	Proposed MC11 Fisheries Subsidies Disciplines Implementing SDG Target 14.6	https://bit.ly/39M-mgc6			
	National Plan of Action for Seabirds (NPOA Seabirds)	https://bit.ly/39NlpIh			
	National Plan of Action for Sharks -The NPOA-Sharks	https://bit.ly/3mPiR04			
	Living Water Programme	https://bit.ly/37VZAE3			
	The South East Marine Protection Forum	https://bit.ly/33LK-KOY			
	Marine protected area research, monitoring and reporting: Ecological Integrity and Sentinel Site programmes	https://bit.ly/3lQC1B6			
	To undertake public consultation on a proposal to prohibit or control the manufacture and sale of personal care products containing microbeads in New Zealand and to consider the public submissions made as part of any future policy or regulatory changes	https://bit.ly/2JWTCKJ			
	New Zealand Ministry for Primary Industries Aquatic Environment Research	https://bit.ly/3gjAcvp			
	To reform national marine protection through the introduction and implementation of modern marine protected areas legislation	https://bit.ly/3lQDK9y			
	New Zealand Ministry for Primary Industries Stock Assessment Research	https://bit.ly/3qt4hgO			

Country	2017 Voluntary Commitments	Progress			
	Title of Voluntary Commitment	Action ID/link	No Data	In Progress	Done
	Supporting implementation of the FAO Port State Measures Agreement (PSMA)	https://bit.ly/33NsB3g			
Niue (1)	Application of Ridge to Reef Concept for Biodiversity Conservation and for the Enhancement of Ecosystem Services and Cultural Heritage in Niue	(#OceanAction17050)			
Palau (1)	The Palau National Marine Sanctuary	(#OceanAction14321)			
Papua New Guinea (4)	National Plan of Action to combat, deter and eliminate Illegal, Unreported and Unregulated Fishing	(#OceanAction20049)			
	Integrated Papua New Guinea Oceans Policy	(#OceanAction21364)			
	Designation of the Jomard entrance as a particularly sensitive sea area	(#OceanAction21372)			
	Bootless Bay Managed Marine Area	(#OceanAction21432)			
Republic of Marshall Islands (4)	Address the issue of marine debris and ghost gear through a conservation management measure at Western and Central Pacific Fisheries Commission	(#OceanAction21512)			
	Blue Fee for coastal and marine resource sustainable management in the Republic of the Marshall Islands	(#OceanAction21568)			
	Participation in the Fisheries Forum Agency Vessel Monitoring Scheme and broader cooperation	(#OceanAction21572)			
	Implementing Outcomes from RMIs 1st National Ocean Symposium	(#OceanAction21580)			
Samoa (11)	Enhancing the protection, conservation and management of sharks, whales, dolphins and turtles in Samoa's Exclusive Economic Zone	(#OceanAction16498)			
	Ocean Health Network for Samoa	(#OceanAction16754)			
	Waste Segregation, Storage and Disposal at Source	(#OceanAction16986)			
	River and Coastal Health Ecosystem Monitoring	(#OceanAction16990)			
	Community Integrated Management Plans	(#OceanAction16994)			

Country	2017 Voluntary Commitments	Progress			
	Title of Voluntary Commitment	Action ID/link	No Data	In Progress	Done
	Avoid Intercept Redesign our ocean plastics	(#OceanAction17836)		■	
	Samoa's Community-based Fisheries Management Programme	(#OceanAction18298)		■	
	Ensuring Samoa's EEZ is free from destructive fishing through prohibition and regulation of fishing methods and gears	(#OceanAction18307)		■	
	Effective implementation of Monitoring, Control, Surveillance and Enforcement programmes for Samoa's fishery waters	(#OceanAction18433)		■	
	Enhancing management of Samoa's fisheries through improved scientific information and knowledge	(#OceanAction18442)		■	
Solomon Is (5)	Integrated National Oceans Policy and Marine Spatial Plan for Solomon Islands	(#OceanAction19754)			■
	Review Pollution control component of the Environment Act by 2018	(#OceanAction20289)		■	
	Maritime boundaries and zones finalised for Solomon Islands	(#OceanAction20299)		■	
	Improving Fisheries Management using Vessel Day Scheme, Solomon Islands	(#OceanAction20314)		■	
	Support community-based resource management in Solomon Islands	(#OceanAction20324)		■	
Tonga (8)	Ongoing support for Pacific regional fishery organisations	(#OceanAction19321)		■	
	Tonga develops a marine spatial plan	(#OceanAction21256)		■	
	Tonga advances science to inform decision-making	(#OceanAction21392)		■	
	Implementation of Port State Measures Agreement (PSMA) to prevent, deter and eliminate IUU fishing which support Target 14.4 and 14.6	(#OceanAction21404)			■
	Whale sanctuary within Tongan waters	(#OceanAction21420)			■

Country	2017 Voluntary Commitments	Progress			
	Title of Voluntary Commitment	Action ID/link	No Data	In Progress	Done
	30% MPAs within Tongan waters	(#OceanAction21468)		■	
	Implementation of the Niue Treaty Subsidiary Agreement (NTSA) for monitoring, control and surveillance of fishing in the region, supporting Target 14.4 and 14.6	(#OceanAction21508)		■	
Tuvalu (4)	Strengthening the relationship between Fisheries Department and Island Kaupule	(#OceanAction19078)		■	
	Tuvalu Coastal Adaptation Project	(#OceanAction21264)			■
	Tuvalu - Near-shore Fish-Aggregating Devices (FADs)	(#OceanAction21288)		■	
	Establishing a network of MPA's and LMMA within Tuvalu Maritime Zone	(#OceanAction21472)	■		
Vanuatu (3)	Establishment of the National Ocean Office	(#OceanAction21616)			■
	Network of Marine Protected Areas	(#OceanAction21628)		■	
	National Marine Spatial Plan	(#OceanAction21632)			■

Annex 3

Council of Regional Organisations for the Pacific (CROP) Agencies & other regional organisations' ocean-related mandates & responsibilities in the Pacific

Organisation	Category of Entity	Mandate
Pacific Islands Forum Secretariat (PIFS)	CROP	Ensure the effective implementation of the Pacific Islands Leaders' Decisions for the benefit of the people in the Pacific
The Pacific Community (SPC)	CROP	Provide technical and policy advice and assistance to its Pacific Island Members in the area of, economic development, fisheries, aquaculture and marine ecosystems, land resources, public health, social resources, applied geoscience and technology, and climate change.
Pacific Islands Forum Fisheries Agency (FFA)	CROP	Support Pacific Island Members in the management, control and development of their tuna fisheries
Secretariat of the Pacific Regional Environment Programme (SPREP)	CROP	Provide assistance to its Pacific Island Members to promote cooperation on protecting and improving the environment and support sustainable development
University of the South Pacific (USP)	CROP	Provide undergraduate and postgraduate educational services to the peoples of the Pacific region
South Pacific Tourism Organisation (SPOT)	CROP	Facilitate development of the tourism sector in the Pacific
The Office of the Pacific Ocean Commissioner (OPOC)	PIF Leaders' decision-housed at PIFS	To provide high-level representation, coordination and commitment needed to ensure dedicated attention and cohesion to ocean priorities, decision and processes in the Pacific.

Annex 4

Matrix of Pacific Islands Countries with their membership in Key Ocean-related Agreements

Country	Key Ocean-related Agreements															
	PIF	FPO	National Ocean Policy	SDG	UNCLOS	UNCLOS FSA	IOC UNESCO	MARPOL	LONDON CONVTN	FAO PSH	CITES	IWC	WCPFC	UN ILO	UN CBD	UN FCCC
American Samoa																
Australia	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Commonwealth of the Northern Mariana Islands																
Cook Islands	√	√	√	√	√	√	√	√					√	√	√	√
Federated States of Micronesia	√	√		√	√	√	√			√			√	√	√	√
Fiji	√	√	√	√	√	√	√			√	√		√	√	√	√
French Polynesia	√	√														
Guam																
Kiribati	√	√		√	√	√	√	√	√	√		√	√	√	√	√
Republic of the Marshall Islands	√	√	√	√	√	√	√	√		√		√	√	√	√	√
Nauru	√	√		√	√	√	√	√	√	√		√	√		√	√
New Caledonia	√	√					≈									
New Zealand	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√
Niue	√	√		√	√	√	√		√	√		√	√		√	√
Palau	√	√		√	√	√	√	√	√	√	√	√	√	√	√	√
Papua New Guinea	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√
Pitcairn Islands																
Samoa	√	√	√	√	√	√	√	√		√	√		√	√	√	√
Solomon Islands	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Tokelau	≈	√					≈									
Tonga	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√
Tuvalu	√	√		√	√	√	√	√		√	√	√	√	√	√	√
Vanuatu	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√
Wallis and Futuna																

√ - Member/Party ≈ - Associate/Observer

Annex 5

Compendium of Key Regional Ocean Policies and Frameworks

Ocean Policy/ Commitment	Overarching objectives	Implementing actors	Ocean priority(ies)
Leaders and High-Level Regional Ocean Declarations			
Niue Treaty on Cooperation in Surveillance & Law Enforcement in the South Pacific 1992	To promote effectiveness in regional surveillance and enforcement through cooperation between member states and coordination of efforts of member states	FFA	Fisheries Surveillance and Law Enforcement
South Pacific Nuclear Free Zone (Rarotonga) Treaty 1985	The goal is to prevent the proliferation of nuclear weapons, tests and radioactive wastes/matter in the bounty and beauty of the Blue Pacific	PIFS	Nuclear weapon use, testing, and wastes
Palau Declaration on ''The Ocean, Life and Future'' 2014	Charts a way forward for Ocean stewardship and sustainability while recognizing threats	OPOC, CROP Agencies and all Ocean actors	Fisheries
Pohnpei Ocean Statement 2016	Calls for full Implementation of SDG 14	OPOC, CROP Agencies and all Ocean actors	Fisheries, Ocean-Climate nexus
Pacific Regional Platform for Partnerships and Action on Sustainable Development Goal 14 2017	Pacific Leaders Commitment towards the Implementation of Sustainable Development Goal 14	OPOC, CROP Agencies and all Ocean actors	SDG14 Targets
Blue Pacific narrative 2017	Pacific Leaders endorsed The Blue Pacific identity as the core driver of collective action. Called for inspired leadership and long-term Forum foreign policy commitment to act as one "Blue Continent". Catalyst for deeper Pacific regionalism	CROP Agencies, OPOC and all Ocean actors	Regionalism, governance, sustainable development

Pacific Islands Year of the Whale Declaration 2016/17	High-level Ministers of 11 Pacific Island Countries and Territories signed the Declaration to provide a secure future for whales in the Pacific Islands region	SPREP	Whales and other marine mammals
Boe Declaration on Regional Security 2018	Recalling the principles underpinning the Biketawa Declaration such as commitment to good governance, belief in the liberty of the individual under the law, upholding democratic processes and institutions and recognizing the vulnerability of member countries to threats to their security	PIFS, CROP Agencies and other security actors	Security
Delap Commitment – securing our common-wealth of oceans 2018	Reshaping the future to take control of the fisheries, and acknowledging the vulnerability and threat to the integrity of maritime boundaries and the existential impacts of sea level rise	PNA	Fisheries
Amatuku Declaration on Climate change and Oceans 2018	Acknowledge the impacts of climate change on ocean, conserving our ocean, sustaining use of ocean resources, policy initiatives linking climate change and ocean	Polynesian Leaders Group	Ocean and Climate change
Taraho'I Declaration 2019	Sustainable methods towards a resilient Pacific Ocean and Fisheries, a key sector for the Sustainable Blue Economy	OPOC, CROP Agencies and all Ocean actors	Blue Economy and Resilient Pacific Ocean
The Kainaki II Declaration for Urgent Climate Change Action Now 2019	Commitment and action to efforts directed towards limiting global warming to 1.5 degrees above pre-industrial levels and recognizing that it is critical to the security of the Blue Pacific	PIFS, CROP Agencies and all PRP actors	Climate change impacts on Ocean resources, Ocean-Climate nexus

Vemoore Declaration 2020	Pacific Islands Declaration to reverse biodiversity loss and address the biodiversity loss. Recognise, endorse and commit to implementing 21 priority Action Tracks by 2025 to ensure the recovery and flourishing of both nature and people in the Blue Pacific	SPREP	Biodiversity with section of "Our Ocean"
Overarching Regional Ocean Policies			
Pacific Islands Regional Oceans Policy (PIROP) 2002 and its Framework for Integrated Strategic Action 2005	The goal of this Policy is to ensure the future sustainable use of our ocean and its resources by Pacific Islands communities and external partners	Pacific Island Roundtable	Broadly cover all ocean priorities
Framework for Pacific Oceanscape (FPO) 2010	Outlines a vision secure for Pacific Island countries and territories based on sustainable development, management and conservation of the ocean; with the objective of integrated Ocean management, adaptation to environmental and climate change, and Liasing, Leading, Listening and Learning	OPOC, CROP Agencies and all Ocean actors	Broadly cover all ocean priorities
Framework for Pacific Regionalism 2014	Pacific Vision is for a region of peace, harmony, security, social inclusion, and prosperity, so that all Pacific people can lead free, healthy, and productive lives	OPOC, CROP Agencies and all actors	
Framework for Resilient Development in the Pacific 2016	Integrated regional framework on climate change and disaster risk management for the Pacific Islands and Territories	PIFS, SPC, SPREP, UNISDRI, Pacific Resilience Partnership	Ocean and Climate Change and Disaster risk management
The Pacific Roadmap for Sustainable Development 2017	The Pacific Roadmap for Sustainable Development guides regional responses for the achievement of the 2030 Agenda and the Sustainable Development Goals	OPOC, CROP Agencies and all sustainable development actors	SDG Goals as well as coercion with other sustainable development

Sectoral Regional Ocean Policies			
Framework for Nature Conservation and Protected Areas in the Pacific Islands Region 2021-2025	Outlines a mission to protect and preserve the rich natural and cultural heritage of the Pacific Islands forever for the benefit of the people of the Pacific and the World	SPREP, IUCN and all regional biodiversity actors	Marine conservation
Regional Roadmap for sustainable Fisheries 2015	Outlines seven clear goals for oceanic and coastal fisheries for the next ten years, as well as indicators that can be used to measure progress. On tuna and fisheries, goals and indicators focus on sustainability; value; employment and food security. In addition, goals and indicators for coastal fisheries are empowerment; resilience and livelihood	FFA, SPC, PNAO and all other Fisheries actors	Fisheries development and management
New Song for Pacific Fisheries, Pathway to Change: The Noumea Strategy 2015	Enhanced focus on coastal fisheries management in the Pacific and dealing with declines in coastal fisheries resources and related ecosystems	FFA, SPC, PNAO and all other Fisheries actors	Coastal fisheries development and management
Regional Environmental Management Framework for Deep Sea Minerals (DSM) Exploration and Exploitation 2016	Outlines a precautionary and adaptive management approach the Exploration and Exploitation of Deep-Sea Minerals in the region	SPC, PIFS, OPOC and other DSM actors	Deep-sea mining
Pacific Islands Meteorological Strategy 2017 to 2026	National Meteorological and Hydrological Services (NMHSs) of the Pacific Island Countries and Territories (PICTs) provide relevant weather, climate, water and ocean services to their people to make informed decisions for their safety, socio-economic well-being, prosperity and sustainable livelihoods	SPREP, CROP agencies and other climate actors	Ocean observation

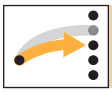
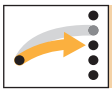
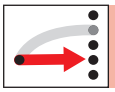
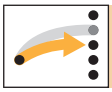
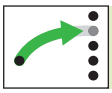
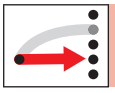
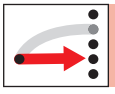
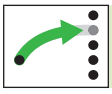
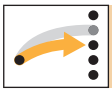
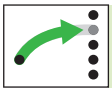
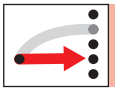
Cleaner Pacific 2025 -Pacific Regional Waste and Pollution Management Strategy 2016-2025	Mechanism for integrated sustainable waste management and pollution prevention and control in the Pacific Islands region until 2025. Seeks to provide a strategic management framework to address waste, chemicals and pollutants that will reduce associated threats to the sustainable development of the region. Carries a mission to implement practical and sustainable solutions for the prevention and management of waste and pollution in the Pacific	SPREP, CROP agencies and other climate actors	Marine pollution
Pacific Regional Action Plan on Marine Litter 2018-2025	Establishing a consistent and fully comparable waste management system consistent and across all Pacific Island Countries and Territories by using– the 5 "R's" – Refuse, Reduce, Reuse, Recycle and Return	SPREP, CROP agencies and other pollution control actors	Marine pollution
Regional Strategy for Pacific Women in Maritime (2020-2024)	Vision is to strengthen and contribute to a sustainable maritime community by providing a more inclusive, safe working environment with equal opportunities; and fair treatment for all Pacific women working in the Maritime Sector	SPREP, CROP agencies and other pollution control actors	Maritime transport
Global Ocean Commitments			
Samoa Pathway 2014	SIDS Accelerated Modalities of Action (SAMOA) Pathway reaffirms Commitments made by International Leaders in recognition of the various international principles including the United Nations Convention on the Law of the Sea and focusing on the sustainable development of Small Island States	PIFS, CROP agencies	Ocean governance and sustainable uses of the ocean

Aichi Biodiversity Targets 2011-2020	Carries a mission to take effective and urgent action to halt the loss of biodiversity and stressing that by 2050, Biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people Strategic Goal A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use Strategic Goal C: To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity Strategic Goal D: Enhance the benefits to all from biodiversity and ecosystem services Strategic Goal E: Enhance implementation through participatory planning, knowledge management and capacity building	SPREP and other Conservation based INGOs e.g. IUCN, WWF, CI	Conservation and Marine Biodiversity

Agenda 2030 (SDG and SDG 14 in particular)	The 2030 Agenda for Sustainable Development pays specific attention to the importance of oceans and waterways. SDG 14 – Life below water – looks to "conserve and sustainably use the oceans, seas and marine resources" and articulates ten targets and their corresponding indicators to help countries and agencies achieve this goal. There is growing recognition of the inter-linkages between SDG14 goals and other SDG goals as well. See Figure 19 for this inter-linkages	PIFS, CROP agencies and other actors	Cross-cutting on different ocean uses and conservation objectives
Decade for Ocean Science for Sustainable Development (2021 – 2030)	A framework will the focus on ensuring that ocean science can fully support countries' actions to sustainably manage the Oceans and more particularly to achieve the 2030 Agenda for Sustainable Development	Intergovernmental Oceanographic Commission (IOC) of UNESCO	Ocean Management

Annex 6

FPO Report card for 2016 and 2020

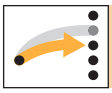
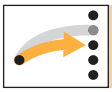
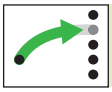
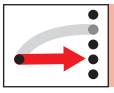
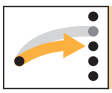
FPO Outcomes	2016 Progress	2020 Progress
Outcome 1: A Secure Future for Pacific Island Countries & Territories	 Moderate Positive Change	 Moderate Positive Change
Outcome 2: A healthy ocean that sustains the livelihoods & aspirations of Pacific Island communities	 Little to No Change	 Moderate Positive Change
Outcome 3: Sustainable development, management and conservation of our Ocean	 Significant Positive Change	 Moderate Positive Change
Outcome 4: Good Ocean Governance	 Little to No Change	 Moderate Positive Change
Outcome 5: Pacific ownership, stewardship & shared responsibility for the Ocean	 Little to No Change	 Moderate Positive Change
Outcome 6: Regional integration and solidarity	 Moderate Positive Change	 Moderate Positive Change
Outcome 7: Equitable, inclusive & accountable decision making	 Moderate Positive Change	 Moderate Positive Change
Outcome 8: Led & informed by those most directly affected	 No Assessment	 Moderate Positive Change
Outcome 9: Jurisdiction rights & responsibility defined	 Significant Positive Change	 Moderate Positive Change
Outcome 10: States have the capacity to monitor and enforce	 No Assessment	 Significant Positive Change
Outcome 11: Integrated conservations across sectors & stakeholders	 Moderate Positive Change	 Moderate Positive Change
Outcome 12: Community Engagement	 No Assessment	 Little to No Change
Outcome 13: Recognition of Pacific Ways and knowledge	 No Assessment	 No Assessment
Outcome 14: Creating space & inclusive processes for engagement	 Moderate Positive Change	 Moderate Positive Change

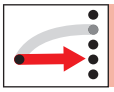
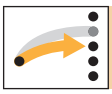
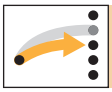
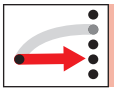
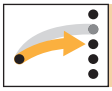
Annex 7

FPO Report Card Indicators

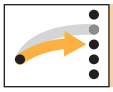
This table provides a listing of all individual "indicators" used for the 2020 FPO Report Card, their data source, regional and international experts' details and the rating of their progress. A combination of consulting the data source and experts' validation were employed to inform the best 2020 rating for each individual indicator. There's a total of 23 indicators employed for the 2020 FPO Report Card compared to 14 indicators used in 2016.

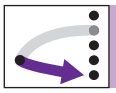
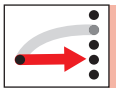
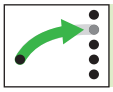
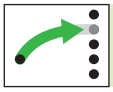
FPO Indicators established in 2016

#	Indicator	Data Source & Contact person	2020 Update
1.	Contribution of Tuna to Food Security	Tuna Fishery 2019 Report Card FFA Chris Reid	 Moderate Positive Change
2	Value of tuna fishing access fees to Pacific EEZs	Tuna Fishery 2019 Report Card FFA Chris Reid	 Moderate Positive Change
3	Direct employment in the tuna fishing industry	Tuna Fishery 2019 Report Card FFA Chris Reid	 Moderate Positive Change
4	SDG Indicator 14.2.1 Proportion of national exclusive economic zones managed using ecosystem-based ecosystems	Pacific Islands Protected Area Portal SPREP Peter Davies World Protected Areas Database UNEP WCMC Healther	 Moderate Positive Change
5	Status of the 4 main tuna stocks against target and limit reference points	Tuna Fishery 2019 Report Card FFA Chris Reid SPC Connie Donato-Hunt for stock assessment	 Significant Positive Change
6	Number of PICT signatories to relevant multilateral agreements	UN Information Portal on Multilateral Agreements SPREP Clark Peteru PIFS Nola Faasau	 Little to No Change
7	Recurrent budget allocated to coastal fisheries management	Coastal Fisheries 2019 Report Card SPC Connie Donato-Hunt	 Moderate Positive Change

8	Number of political/country statements that reinforce or promote the FPO's role in the regional ocean policy framework	OPOC Database Riibeta Abeta	 Little to No Change
9	Deposit of charts and/ or lists of geographical coordinates for baselines and outer limits of maritime zone with SG of the UN under UNCLOS	Pacific Data Hub & DOALOS https://bit.ly/3jHvg54 SPC Malakai Vakautawale	 Moderate Positive Change
10	Proportion of organization types and sectors repre-sented on the Pacific Ocean Alliance list	OPOC POA Database Riibeta Abeta	 Moderate Positive Change
11	Relative proportion of participation by regional, national and local level stakeholders at POA face-to-face meetings	POA OPOC Database Riibeta Abeta	 Moderate Positive Change
12	Number of open regional and sub-regional organisa-tions ocean forums held	MSWG/OPOC	 Moderate Positive Change
13	User rights of coastal communities defined in legislation	Coastal Fishery 2019 Report Card SPC Connie Donato-Hunt	 Little to No Change
14	Proportion of PICTs above the overall global ocean health index benchmark	http://www.oceanhealthindex.org/ Conservation International Pacific	 Moderate Positive Change

FPO Indicators added in 2020

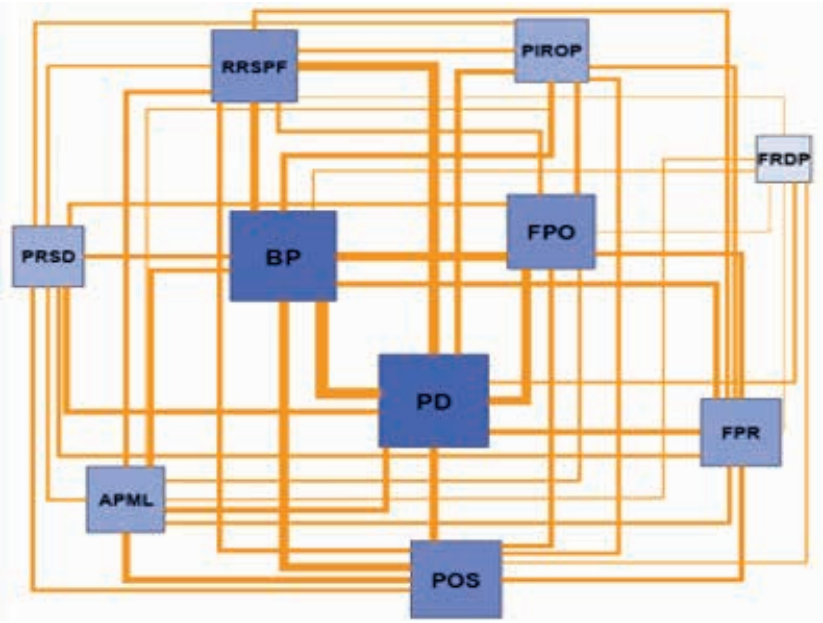
#	Indicator	Source & Contact person	2020 Update
15	Contribution of tuna to GDP SDG14.7.1 – Sustainable fisheries as a proportion of GDP in Pacific Islands and Territories	Tuna Fishery 2019 Report Card FFA Chris Reid Coastal Fisheries Report Card SPC Connie Donato-Hunt	 Moderate Positive Change
16	Coverage of protected areas in relation to marine areas. This is SDG14.5.1	Pacific Islands Protected Area Portal and SDG Dashboard, World Database on Protected Areas SPREP Vainuupo Jungblut	 Moderate Positive Change
17	National coastal fisheries roadmap or strategy in place (current dates)	Coastal Fisheries 2019 Report Card SPC Connie Donato-Hunt	 Moderate Positive Change

18	Household participation in fisheries and aquaculture (disaggregated by urban / rural)	Coastal Fisheries 2019 Report Card SPC Connie Donato-Hunt	 Moderate Positive Change
19	Stock status of key indicative coastal fisheries species	Coastal Fisheries 2019 Report Card SPC Connie Donato-Hunt	 Declining Change
20	Proportion of households who consume fish	Coastal Fisheries 2019 Report Card SPC Connie Donato-Hunt	 Moderate Positive Change
21	Volume of fresh fish consumed per person per annum	Coastal Fisheries 2019 Report Card SPC Connie Donato-Hunt	 Little to No Change
22	Number of Ocean policies established for implementation in Pacific Island Countries	OPOC Database Riibeta Abeta	 Significant Positive Change
23	Number of ocean initiatives with capacity building focus implemented in the Pacific	OPOC Database Riibeta Abeta	 Significant Positive Change

Annex 8

Regional Ocean Policies Inter-linkages analysis

Connections between selected regional ocean-relevant policies: thicker lines depict stronger bilateral links between policies and larger boxes show policies with higher total linkage strength.



Policy codes with full policy name (and date): ranked by overall lexicometric linkage strength

BP	Blue Pacific: Forum Communique (2017)
PD	Palau Declaration on 'The Ocean: Life and Future' - Charting a course to sustainability (2014)
FPO	Framework for a Pacific Oceanscape (2010)
POS	Pohnpei Ocean Statement: A course to sustainability (2016)
RRSPF	Regional Roadmap for Sustainable Pacific Fisheries (2015)
PIROP	Pacific Islands Regional Ocean Policy and the Framework for Integrated Strategic Action (2005)
PRSD	Pacific Roadmap for Sustainable Development (2017)
FPR	Framework for Pacific Regionalism (2014)
FRDP	Framework for Resilient Development in the Pacific (2016)
APML	Pacific Regional Action Plan- Marine litter (2018)
FRDP	Framework for Resilient Development in the Pacific (2016)

Annex 9

Regional and International Ocean Information and Data Portals

Name of Portal	Ocean sector	Global/ Regional	Website URL
Pacific Ocean Initiatives Portal (National and Regional)	Cross-cutting - ocean initiatives of all Pacific Ocean Alliance members	Regional (OPOC)	https://regional.opocbluepacific.net/
Pacific Data Hub	Cross-cutting - other regional portals, publications, SDG 14 Dashboard, Pacific Ocean mapping, Statistics Dashboard, etc.	Regional (SPC)	https://pacificdata.org/
Pacific Community Center for Ocean Science Dashboard (PCCOS)	Cross-cutting- publications, Pacific Ocean mapping datasets	Regional (SPC)	https://pacificdata.org/topic/pccos
Pacific Islands Marine Resources Information System - PIMRIS	Marine academic studies -publications, network of marine science libraries, etc	Regional (USP)	https://www.usp.ac.fj/index.php?id=4646
Pacific Ocean Portal	Oceanographic parameters (such as Sea level rise, Fisheries, Coral Reefs, etc) - datasets and projections, spatial maps	Regional (SPC)	http://oceanportal.spc.int/portal/ocean.html
Marine Atlas for Pacific Island Countries	Cross-cutting - PDF, E-Book and Interactive Ocean data viewer for few Pacific Island Countries on several ocean datasets (Pacific Ocean mapping)	Regional (MACBIO project - IUCN Oceania, GIZ Pacific & SPREP)	Fiji https://www.grida.no/publications/434 Kiribati https://www.grida.no/publications/436 Solomon Is https://www.grida.no/publications/435 Tonga https://www.grida.no/publications/437 Vanuatu https://www.grida.no/publications/438

Pacific Environment Portal	Environment management, Marine Conservation - Publications, Excel, GIS datasets on, Country portals, etc	Regional (SPREP)	https://pacific-data.sprep.org/
Pacific Climate Change Portal	Climate change -Publications, projects, virtual libraries, dashboards, Pool of Experts, Country profiles, NDCs, etc	Regional (SPREP)	https://www.pacificclimatechange.net/
Pacific Actions for Sustainable Ocean Fisheries	Oceanic Fisheries – Publications, datasets, etc	Regional (FFA & SPC)	http://www.sustainpacfish.net/
Future for Fisheries: Roadmap and Report Cards	Annual Report Cards for Coastal Fishery and Tuna Fishery for the Pacific	Regional (SPC & FFA)	https://fame1.spc.int/en/publications/roadmap-a-report-cards
Pacific Islands Protected Area Portal	Marine Protected Areas (Pacific Ocean mapping) - Country Profiles, Spatial maps of marine protected areas	Regional (SPREP)	https://pipap.sprep.org/index.php/pa-search
PacGeo	Marine Spatial Datasets - Geospatial Data repository, Pacific Ocean Mapping	Regional (SPC)	http://www.pacgeo.org/
Regional Maritime Boundaries	Maritime Boundaries (Ocean mapping) - Spatial map showing progress on maritime boundaries delimitation and delineation including Extended Continental Shelf	Regional (SPC)	http://gsd.spc.int/regionalmaritimeboundaries
Pacific Islands Legal Information Institute	Depository of all Legislations, Law Reports, Court Materials, Constitutional Instruments, etc	Regional (USP)	http://www.paclii.org/
Pacific Law & Policy Database on Coastal Fisheries and Aquaculture	Legislations, Regulations, Policies and Plan related to coastal fisheries for Pacific Island Countries and Territories	Regional (SPC Reeflex)	https://www.spc.int/CoastalFisheries/Legislation/about

Pacific Aid Map	Development Aid Database for Pacific Islands – flows, amount, sectors	Regional (Lowy Institute)	https://pacificaidmap.lowyinstitute.org/
Blue Papers	Depository of Published Blue Papers on a range of important ocean topics	Global (High Level Panel for A SUSTAINABLE OCEAN ECONOMY)	https://www.oceanpanel.org/blue-papers
Ocean Finance Mechanism Catalogue	Ocean Finance – depository of the different finance mechanisms related to ocean	Global (Marine Conservation Finance, UNDP & BIOFIN)	https://www.marineconservationfinance.com/catalogue
Marine Spatial Planning Around the Globe	Marine Spatial Planning -Inventory of Countries, type of MSP initiative and commentary	Global (UNESCO & Inter-governmental Oceanographic Commission)	http://msp.ioc-unesco.org/world-applications/overview/
Protected Planet	Marine Protected Areas – Country coverage in percentages, datasets	Global (IUCN, UNEP, WCMC)	https://www.protectedplanet.net/en/search-areas?geo_type=country
Registry of Voluntary Commitments for implementing SDG14	Voluntary Commitments – register, profiles of commitments and updates, publications	Global (United Nations)	https://oceanconference.un.org/commitments/
Maritime Space: Maritime Zones and Maritime Delimitation Databases	Maritime zones Charts or Geographical Coordinates relating to UNCLOS	Global (United Nations)	https://www.un.org/Depts/los/LEGISLATIONANDTREATIES/depositpublicity.htm
Maps of Deep-Sea Minerals	Deep Sea Minerals – spatial maps, types of deep-sea minerals, geographical zones, locations	Global (ISA)	https://www.isa.org.jm/minerals/maps
ReefBase	Reef database – coverage, geographical coordinates/zones, status, etc	Global (WorldFish)	http://www.reefbase.org/global_database/
Pacific Heritage Hub	Pacific Heritage Info	Regional (USP)	https://sustainabledevelopment.un.org/partnership/?p=7393

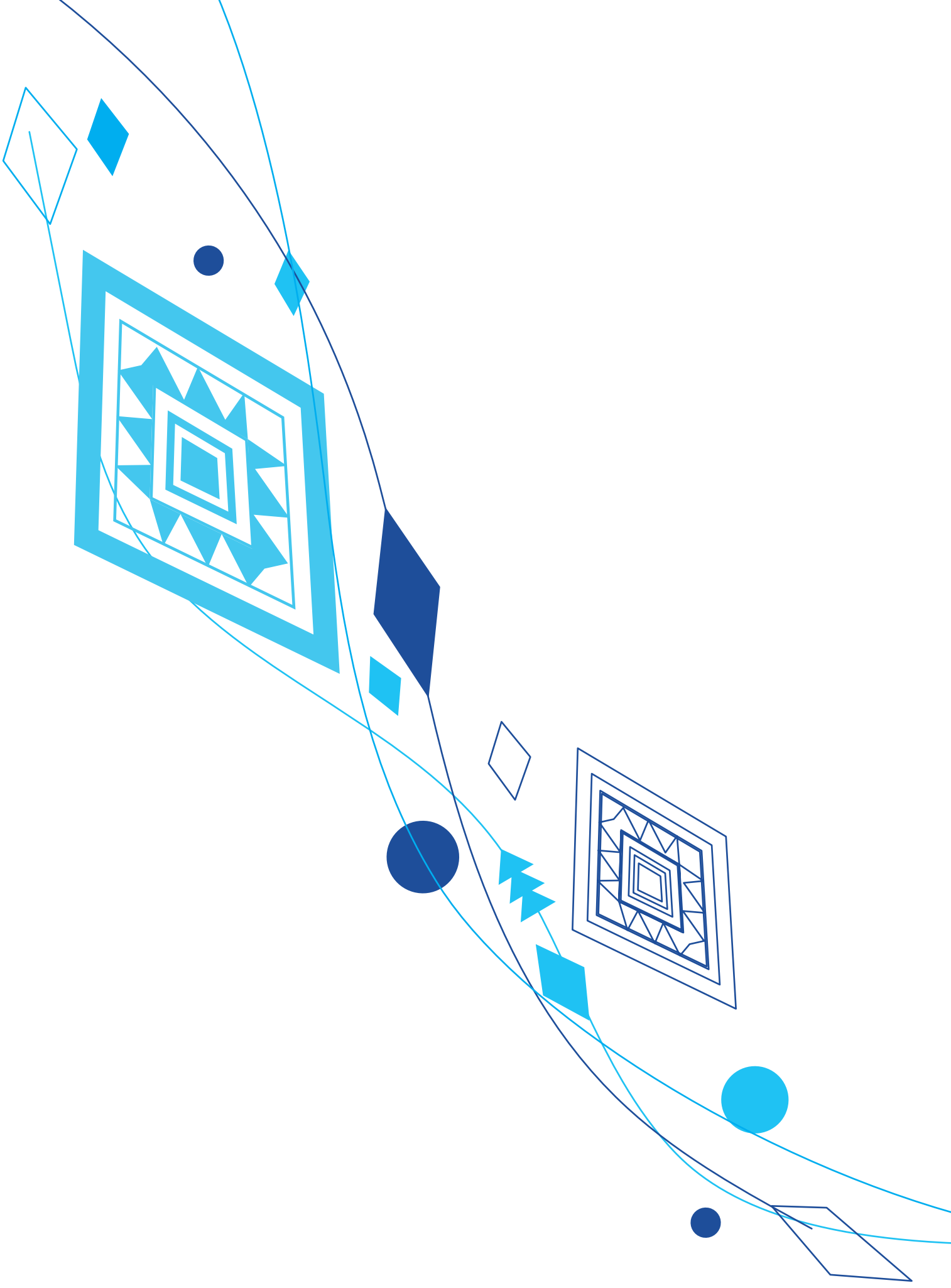
Annex 10

Status of Marine Spatial Planning (MSP) in the Blue Pacific

	Status of Marine Spatial Planning (Compete, None, In-progress)	Scale of MSP (EEZ, Provincial, Island)	Regional & International partners involved	Link for further info
American Samoa	Complete	EEZ	NOAA	https://bit.ly/3gsyng3
Australia	Complete	EEZ		https://bit.ly/3oBrwDO
Commonwealth of Northern Mariana Is	None			
Cook Islands	Complete	EEZ		https://bit.ly/3mYJHTt
Federated States of Micronesia	Complete	EEZ	The Nature Conservancy	https://marineplanning.org/projects/pacific-islands/pohnpei/
Fiji Islands	Complete	EEZ	IUCN	http://macbio-pacific.info/categories/planning/
French Polynesia	None			
Guam	Complete	EEZ	NOAA	https://bit.ly/36V2Pw3
Kiribati	Complete	Provincial level	Conservation International	https://www.conservation.org/projects/phoenix-islands-protected-area
Marshall Islands	Complete	EEZ	The Nature Conservancy	https://marineplanning.org/projects/pacific-islands/marshall-islands/
Nauru	None			
New Caledonia	None			
New Zealand	Complete	Provincial level		https://www.seachange.org.nz/
Niue	In-progress	EEZ	Ocean5	https://www.niueoceanwide.com/projects
Palau	Complete	EEZ		https://marineplanning.org/projects/pacific-islands/palau/
Papua New Guinea	Complete	Provincial level		https://marineplanning.org/projects/asia/papua-new-guinea-kimbe-bay/
Pitcairn	None			
Samoa	Complete	EEZ	IUCN	https://bit.ly/3oB4z3v

Solomon Islands	Complete	EEZ	IUCN	http://macbio-pacific.info/categories/planning/
Tokelau	None			
Tonga	Complete	EEZ		http://macbio-pacific.info/categories/planning/
Tuvalu	None			
Vanuatu	Complete	EEZ		http://macbio-pacific.info/categories/planning/
Wallis and Futuna	None			

Notes



We are the Ocean - Pacific Ocean Commissioner Dame Meg Taylor with the children of the Pacific Islands Forum Secretariat during the launch of the "Our Sea of Islands, Our Blue Pacific" children's ocean book in Suva, Fiji. January, 2021.

Photo Credit: Pacific Islands Forum Secretariat (PIFS)

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