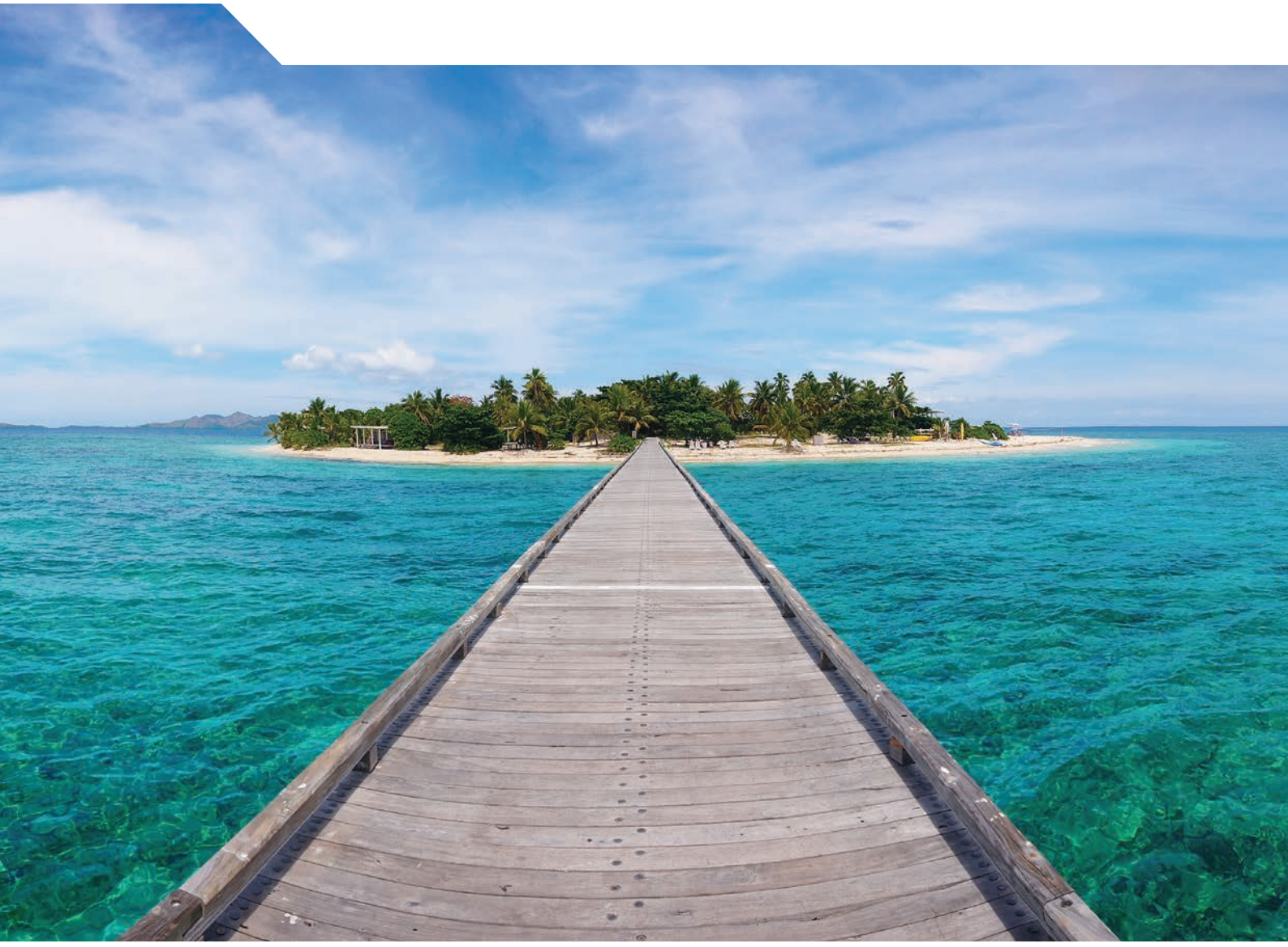
Towards a Blue Recovery in Fiji

COVID-19 APPRAISAL REPORT



OECD

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Foreword

This report was developed as part of the Blue Recovery Hub of Fiji, a collaboration between the OECD, Friends of Ocean Action, and the Sustainable Development Investment Partnership (SDIP), with the generous support of the United Kingdom Government's Blue Planet Fund.

The objective of Blue Recovery Hubs is to accelerate progress towards a sustainable and resilient recovery in participating countries, by (i) enhancing long-term sustainability of existing ocean economy sectors and (ii) generating new, sustainable opportunities for economic diversification, that can help achieve Sustainable Development Goals (SDGs) across multiple economic and social areas.

Blue Recovery Hubs help countries develop an evidence-based Blue Recovery Strategy and establish a partnership framework for implementation with providers of development co-operation, the private sector and other stakeholders. They offer a concrete opportunity for providers to support a step change in recovery efforts, towards inclusive and resilient development based on the sustainable use of natural resources. They facilitate the provision of co-ordinated and coherent development co-operation, aligned with the country's own vision and strategy. Blue Recovery Hubs also provide a framework for development co-operation providers to progress towards international targets, such as the commitments made by the members of the OECD Development Assistance Committee (DAC) in their *Declaration on a new approach to align development co-operation with the goals of the Paris Agreement on Climate Change*.

This report is the key output of stage one of the Blue Recovery Hub of Fiji. It was developed using the analytical framework of the OECD Sustainable Ocean Economy Country Diagnostics, which are part of the OECD Sustainable Ocean for All Initiative. It incorporates unique OECD statistical sources, including dedicated estimates on ocean economy ODA. The report provides an overview of challenges and opportunities in the COVID crisis context, as well as an initial mapping of promising initiatives and funding instruments that can be developed and scaled up to foster a sustainable blue recovery. Stage two will focus on investment pathways to leverage the ocean economy sustainably. Stage three will culminate in a round table of stakeholders to consolidate support from development co-operation providers, private sector and other partners, for the implementation of the actions identified.

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The report was prepared under the direct oversight of Jens Sedemund, Team Lead Environment and Climate Change, Financing for Sustainable Development Division, Development Co-operation Directorate (OECD). Haje Schütte, Head of Financing for Sustainable Development Division, Development Co-operation Directorate (OECD) provided overall strategic guidance.

The report was informed by structured interviews and consultations with representatives from relevant Fijian ministries and government bodies, development partner representatives, think tanks, civil society and the private sector, including from: Fiji's Office of the Prime Minister, Minister of Economy, Ministry of Commerce, Trade, Tourism and Transport, Ministry of Women, Children and Poverty Alleviation, Ministry of Education, Heritage and Arts, Ministry of Local Government, Ministry of iTaukei Affairs and Foreign Affairs, Ministry of Lands and Mineral Resources, Ministry of Defence, National Security and Policing, Disaster Management, Rural and Maritime Development, Fiji Bureau of Statistics, Ministry of Fisheries, Fiji Meteorological Services, Fiji Development Bank, Fiji Hotel and Tourism Association, Nadi Town Council, Suva Town Council, Savusavu Town Council, Port Denarau Marina, Talanoa Consulting, Fiji National Provident Fund, University of South Pacific, Fiji National University, International Union for Conservation of Nature, Pacific Community, World Wildlife Fund, Pacific Island Forum, Wildlife Conservation Society, German Agency for International Cooperation (GIZ) Pacific, Department of Foreign Affairs and Trade, United Nations Development Programme, Japan International Cooperation Agency, New Zealand High Commission, British High Commission, the Global Ocean Accounts Partnership, Conservation International, World Bank and the International Finance Corporation.

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Abbreviations and acronyms

ADB	Asian Development Bank
AIFFP	Australian International Financing Facility for the Pacific
AWNJ	Area Within National Jurisdiction
BCAF	Blue Carbon Accelerator Fund
BIOPAMA	Biodiversity and Protected Areas Management
BNCFF	Blue Natural Capital Financing Facility
CBD	Convention for Biological Diversity
CFAN	Climate Finance Access Network
DCD	Development Co-operation Directorate
DSM	Deep seabed mining
DSSI	Debt Service Suspension Initiative
ECAL	Environment and Climate Adaptation Levy
EEZ	Exclusive Economic Zone
EIA	Environmental impact assessment
ESS	Environment, sustainability and society
EU	European Union
FDI	Foreign direct investment
FFA	Forum Fisheries Agency
FNPF	Fiji National Provident Fund
GDP	Gross domestic product
GEF	Global Environment Facility
GES	Gender equity and social inclusion
GGGI	Global Green Growth Institute
GHG	Greenhouse gas
GNI	Gross national income
GSFS	Government Shipping Franchise Scheme
ICZM	Integrated coastal zone management

IDA	International Development Association
IFAD	International Fund for Agricultural Development
IGCI	International Global Change Institute
IMO	International Maritime Organization
IRENA	International Renewable Energy Agency
IUCN	International Union for Conservation of Nature
IUU	Illegal, unreported and unregulated
LDC	Least developed countries
LECRD	Low Emission and Climate Resilient Development
LEDS	Low Emission Development Strategy
LHI SIDS	Lighthouses Initiative
LMMA	Locally managed marine area
MACC	Maritime Areas/Affairs Coordinating Committee
MCA	Marine conservation agreement
MPA	Marine protected area
MPATC	Marine Protected Areas Technical Committee
MRAG	Marine Resources Assessment Group
MSME	Micro, small and medium enterprises
MTCC	Maritime Technologies Cooperation Centre
NAP	National Adaptation Plan
NDA	National Designated Authority
NDC	Nationally Determined Contribution
NDP	National Development Plan
NEC	National Environment Council
NEST	National Environment Security Taskforce
NGO	Non-governmental organisation
NIFS	National Infrastructure Financing Strategy
NIPAS	National Implemented Protected Area System
NOP	National Ocean Policy
NOPSC	National Ocean Policy Steering Committee
OCT	Overseas Countries and Territories
ODA	Official development assistance
OECD	Organisation for Economic Co-operation and Development
PAC	Protected Area Committee
PAFCO	Pacific Fishing Company

PICCAP	Pacific Islands Climate Change Assistance Programme
PICTs	Pacific Island Countries and Territories
PPA	Power Purchase Agreement
SCF	Subnational Climate Fund
SDG	Sustainable Development Goal
SDIP	Sustainable Development Investment Partnership
SEA	Southeast Asian
SIDS	Small island developing state
SIFT	Sustainable Infrastructure Financing Tool
SIP	Sustainable Investment Pathway
SMS	Seafloor massive sulphides
SOP	Sustainable Ocean Plan
SPC	Secretariat of the Pacific Community
SPREP	South Pacific Regional Environment Programme
SSTI	Sustainable Sea Transport Initiative
SUMA	Special, Unique Marine Areas
TAF	Technical Assistance Facility
TC	Tropical Cyclone
TRFO	Traditional Fishing Rights Owner
UAE	United Arab Emirates
UNCDF	United Nations Capital Development Fund
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
WCPFC	Western and Central Pacific Fisheries Commission
WCS	Wildlife Conservation Society
WWF	World Wildlife Fund

Executive summary

Economic and sustainability trends

The bulk of Fiji's economic activity depends on the ocean. Tourism, fisheries and maritime transportation are Fiji's largest ocean economy sectors. Tourism alone accounted for 38.9% of Fiji's gross domestic product (GDP) and 35.5% of employment prior to COVID-19. More than 90% of tourist attractions are maritime- or coastal-based. The tourism sector supports numerous other industries, such as transport and agriculture, although linkages could be further strengthened. Moreover, as an archipelago, Fiji relies heavily on maritime transportation, ports and other coastal infrastructure to trade goods and to ensure inter-island mobility of Fijians and tourists. Other critical sectors of Fiji's ocean economy are fisheries and aquaculture. The fisheries sector is Fiji's third largest export earner and is responsible for the livelihoods of a significant share of Fiji's population.

Unsustainable use of natural resources and climate change are threatening economic and social prosperity. Fiji is located in the tropical cyclone belt, which exposes it to tropical storms, rising sea levels, floods and landslides. Every year, cyclones and floods cause substantial damages and estimates suggest that Fiji's annual losses due to extreme weather events could reach 6.5% of GDP by 2050. Other climate change impacts on Fiji's coastal and marine ecosystems include changing weather patterns, coral bleaching, and changing fish migratory patterns. Together with overfishing, these challenge the prospects of the country's fisheries sector. Coastal erosion and sea-level rise due to climate change are leading to permanent community relocations. Since 2014, seven communities have been fully or partially relocated due to climate change impacts.

The COVID-19 crisis affected Fiji's economy particularly hard, stressing the need for a sustainable diversification of the economy and more sustainable use of its resources. Heavy dependence on tourism and low economic diversification made the 2020 economic contraction the largest in Fiji's modern history. GDP fell by 15.7% in 2020 and the debt to GDP ratio reached 80% in 2019, up from 43.5% in 2017. Job losses and reduced hours affected at least one-third of Fiji's labour force, more in the tourism sector. Since hotels and resorts represent an important share of the local demand for fish, the halt in tourism significantly affected employment in aquaculture, fisheries and transportation. Fiji's exports of fresh fish were also deeply affected by the rise in freight costs and the reduction in airfreight options. Lockdowns in major export markets also depressed international demand. In addition, three tropical cyclones hit the country; one was the strongest ever recorded in the Pacific.

Financing trends

Despite facing severe financing challenges common to other small island nations, pre-COVID Fiji managed to improve its domestic revenues and develop innovative financing instruments for sustainable green and blue investments. Fiji's domestic revenues (tax and non-tax) more than doubled between 2008 and 2019, from FDJ 3 044 billion to FDJ 1 245 billion. Fiji also developed a suite of innovative fiscal instruments to finance climate and ocean action. These include the Environment and

Climate Adaptation Levy (ECAL) as well as Fiji's first sovereign green bond. With the development of its first sovereign blue bond, the country plays a leading role in innovation for sustainable investment.

Official development assistance (ODA) has been an important part of Fiji's financing mix, but flows in support of the ocean economy remain small and volatile. ODA accounted for 19% of external financial flows in 2015-19. However, in 2019, the ocean economy received only 2.65% of total ODA (USD 4.3 million), below the 6.5% average in Small Island Developing States (SIDS). Unlike for many other countries, most of the ODA to Fiji's ocean economy incorporates sustainability concerns (94% in 2017-19). It concentrates on sustainable fisheries. There is significant scope for providers of development co-operation to enhance their support by: (i) directly funding sustainable investments; (ii) de-risking and crowding in additional sources of funding, including through capacity building and credit enhancement for innovative financial products; and (iii) supporting the integration of sustainability criteria and standards in traditional financial services and investments, in financial products (e.g. stocks and bonds), as well as in credit products (e.g. loans or bonds).

Setting sail for sustainability: Opportunities and tools for fostering a blue recovery

As part of stage one of the Blue Recovery Hub of Fiji, this report provides an initial mapping of initiatives and actions to be explored, developed and scaled up. These initiatives focus on four areas with potential to generate benefits across the broader economy, and drive a sustainable recovery: sustainable fisheries, sustainable tourism, green shipping and marine conservation. It also highlights examples of innovative financing mechanisms that could advance these ambitions.

- Within sustainable fisheries, aquaculture can play a key role in ensuring food security, as seen in many Southeast Asian countries, but sustainability needs to be put at the centre. Further opportunities can be explored, especially on seaweed farming and pearl production.
- Sustainable tourism can help Fiji create greater value for its people and for the environment. Following the COVID-19 outbreak, more expensive and scarce food supply made many hotel chains turn to local production. Encouraging and scaling up such initiatives can underpin economic recovery. Linking fiscal incentives for hotel renovations under COVID-19 to enhanced energy efficiency and sustainability standards can boost employment and productivity, and move Fiji closer to achieving its climate goals.
- Moving towards a greener shipping sector offers intrinsic benefits for the environment. It is also cost effective, since fuels imports weigh heavily on Fiji's import bill, limiting inter-island connectivity and the associated economic opportunities. Investing in alternative fuels, fuel efficiency measures and clean technologies can reduce dependency on fossil fuels and make Fiji less vulnerable to external shocks. A number of innovative low-carbon and fuel-saving options currently tested in Fiji and in the region could be further developed and scaled up.

Centralised funding models for marine protection could be adapted to fit Fiji's demands, allowing the country to meet its needs for near-shore, small-scale protected areas management.

1 Fiji's recovery and the Blue Recovery Hubs

The COVID-19 pandemic severely affected key ocean sectors of small island developing states (SIDS) like Fiji. As countries implement economic recovery packages in response to the pandemic, they have an unprecedented opportunity to rebuild their economies in a more sustainable and equitable manner. The international community can play a key role to "build forward better" through recovery strategies that are greener and more inclusive. However, international support must be co-ordinated to avoid duplication and ineffective use of scarce resources. This chapter introduces the Blue Recovery Hubs as a policy mechanism to help align international assistance for a resilient and inclusive recovery in SIDS.

1.1. A sustainable ocean economy can drive a resilient and inclusive recovery

The COVID-19 crisis has severely affected key ocean economy sectors and casts growing uncertainties on the outlook of the global ocean economy. The OECD estimates that, in 2020, international tourism dropped by 80% due to the pandemic. The fall in international tourism receipts in January-June 2020 alone is estimated at USD 460 billion, more than three times the loss during the 2008-2009 financial crisis. Developing and emerging market countries are being deeply affected by this crisis with global poverty set to increase for the first time in 30 years. Small island developing states (SIDS) are suffering unprecedented economic impacts via the global effects on ocean economy sectors such as tourism and fisheries. For many, these sectors are the backbone of their vulnerable and undiversified economies, and a critical source of jobs, income and foreign exchange.

As countries implement economic recovery packages in response to COVID-19, they have an unprecedented opportunity to "reset" and rebuild economic activities to deliver a more sustainable, equitable and resilient ocean economy. Conversely, a reversion to business-as-usual could risk locking in economic pathways delivering high-emitting, high-polluting and inequitable growth that undermine the fundamental natural assets underpinning Fiji's economy. Actions and policies of national governments and financial institutions will define the characteristics and shape of economies for decades. The ocean economy should be an integral part of a process of fundamentally rethinking and transforming business models and economic models. This should allow such models to deliver value for people and for the environment, and enhance systemic resilience in an effective manner. This is all the more important as demands on marine resources will persist for food, energy, minerals, leisure and other needs of a growing global population, despite the slowdown in economic activity.

The ocean possesses enormous resources with the potential for fuelling a recovery that will put countries on track for a cleaner, greener, more equitable and resilient future. A recovery that invests sustainably in ocean-related sectors can provide clean, renewable energy; enhance society's resilience to climate and coastal shocks; and provide food and livelihoods to billions. It can unlock new, sustainable economic opportunities for more diversified and resilient economies, fostering significant linkages and multiplier effects across sectors. It can also achieve shared prosperity and well-being of all people, especially the world's most vulnerable, ushering in a new era of sustainable development.

The international development community plays a key role to support the development and implementation of recovery strategies and packages that can solidly put developing countries on a path of sustainable development through sustainable ocean economies. The current crunch of both domestic and international resources makes a tailored and smart deployment of development resources more essential than ever. In this context, the Blue Recovery Hubs offer an opportunity to provide coherent and co-ordinated support from across providers of development co-ordination. It would help avoid duplications and ineffective use of scarce development resources, as well as to maximise impact through development co-operation efforts that are aligned behind a common and country-owned strategy.

1.2. The Blue Recovery Hubs can provide policy support and help align international assistance for a resilient and inclusive recovery

While several international initiatives have recently been launched in the sustainable ocean economy space, there remains concrete and urgent unmet demand from developing countries, including Small Islands Developing States (SIDS), for support to strategies and actions to "build forward better" through a sustainable approach to the ocean economy. The Blue Recovery Hubs aim to contribute to fill this gap. They also aim to help bring together key existing initiatives on the ocean economy and a blue recovery, both at the country and the international level.

The Blue Recovery Hubs provide a means to implement the DAC's commitments on ocean and to assist countries in developing the evidence base and partnerships needed for a blue recovery. Recognising the urgent need for greater support for the sustainable use and conservation of the ocean, members of the OECD Development Assistance Committee (DAC) recently committed to give greater priority to global co-operation for sustainable ocean economies in the 'OECD DAC Declaration on a new approach to align development co-operation with the goals of the Paris Agreement on Climate Change' (OECD DAC, 2021[1]).

The Blue Recovery Hubs offer a concrete opportunity for providers of development co-operation to support a step change in recovery efforts, ensuring that plans and measures promote inclusive and resilient development based on the sustainable use of natural resources. They allow co-ordinated and coherent development co-operation support for the recovery, aligning efforts beyond an evidence-based and country- owned vision and strategy for sustainable recovery. The Blue Recovery Hubs also allow development co-operation providers to accelerate progress towards meeting international climate and environmental targets and fostering transformative support for inclusive and low-carbon societies.

The Blue Recovery Hubs pursue the dual objective of i) enhancing the long-term sustainability of existing ocean economy sectors; and ii) generating new, sustainable opportunities that can lead to economic diversification and act as a multiplier of the Sustainable Development Goals across multiple economic and social areas.

In particular, the Blue Recovery Hubs deliver:

1. analysis on the impacts of the COVID-19 pandemic on the ocean economies of individual countries,
2. support to devise recovery plans and actions to "Build Forward Bluer",
3. assistance to mobilise and align development co-operation, investors and other actors around their implementation.

The Blue Recovery Hubs aim to promote and leverage the numerous economic, social and environmental gains of "blue" stimulus spending. It pursues these aims through an approach tailored to the on-the-ground reality in countries, facilitating improved short- and long-term job creation; incentivising innovation to spur market opportunities; improving human health outcomes; and reducing greenhouse gas (GHG) emissions. Blue Recovery Hubs promote out-of-the-box thinking and innovation, along with associated and appropriate risk-taking, to support tailored solutions in ocean economy sectors, based on regional sensitivities. They span areas such as sustainable tourism, biotechnology and waste management; sustainable, ocean-based renewable energy; sustainable and traceable fisheries and mariculture; sustainable shipping; and innovative ways to integrate ocean conservation with revenue-generating activities that provide new jobs, livelihoods and return on investment alongside ecosystem conservation and restoration.

The work of the Blue Recovery Hubs is articulated in three main stages, each with deliverables and developed in close consultation and collaboration with the relevant government's entities and relevant stakeholders.

- Stage 1 consists primarily of a COVID-19 Impact & Opportunity Appraisal report. This study analyses the country's ocean economy and impacts from the COVID-19 crisis. It also provides a first assessment of opportunities that could be built on for a sustainable blue recovery. The study adopts the analytical pillars of the OECD Sustainable Ocean for All Initiative's Sustainable Ocean Economy Country Diagnostics, covering: (i) economic trends; (ii) governance and policy tools; and (iii) financing, with a focus on development finance.
- Stage 2 identifies recovery actions and sustainable investment pathways. This work builds on Stage 1 to identify the risks and barriers preventing greater involvement, funding and investment in initiatives supporting sustainable blue economy activities. It also identifies policies, innovations and/or financing mechanisms that address these risks and barriers. The stage concludes with

defining and agreeing on the actions and actors needed to unlock greater involvement, funding and investment in these initiatives that support sustainable blue economy activities.

- Stage 3 provides a roadmap and partnership roundtable with stakeholders organised in partnership with the government. This aims to present findings of the appraisal and the sustainable investment pathways and generate consensus on, and endorsement for, the priority initiatives. The roundtable will convene key development partners, financial institutions and critical local and regional stakeholders to catalyse partnership, technical assistance, funding and investment support to enable implementation of the collaboratively agreed initiatives driven by on-the-ground stakeholders.

The first Blue Recovery Hub was established in Fiji. Fiji's efforts in working towards a sustainable blue economy are leading examples of best practice. At the same time, economies such as Fiji's – heavily reliant on services and tourism – have been some of the worst hit by the impacts of COVID-19. As such, Fiji represents an opportune partner for the Hubs' work to reach proof of concept where maximum impact could be achieved. The Blue Recovery Hub of Fiji was established as a collaboration with the Ministry of Economy of Fiji in partnership with the OECD, Friends of Ocean Action (FOA) and the Sustainable Development Investment Partnership (SDIP).

References

OECD DAC (2021), *OECD DAC Declaration on a new approach to align development co-operation with the goals of the Paris Agreement on Climate Change*, https://www.oecd.org/dac/development-assistance-committee/dac-declaration-climate-change-cop26.pdf (accessed on 25 April 2022). [1]

2 The ocean economy of Fiji before COVID-19: Economic trends and sustainability stressors

This chapter examines the composition and trends of Fiji's ocean economy prior to the COVID-19 crisis in the context of its overall economic development, including the importance of tourism, inshore and offshore fisheries, and maritime transport and ports. The chapter identifies key challenges from climate change and other increasing pressures on ocean and coastal resources, which threaten the benefits that can be drawn by ocean economy sectors.

2.1. Fiji stands to benefit from fulfilling its ambitions regarding a sustainable ocean economy

Fiji is a small island developing state (SIDS) located in the heart of the Pacific Ocean. Its total land area, composed of 332 islands, totals 18 274 km². This land area compares to over 1 290 000 km² of national waters, which represent Exclusive Economic Zones (EEZs). The country's population of approximately 884 887 resides primarily on the 2 largest of the 110 inhabited islands, Viti Levu and Vanua Levu. The country also has a significant diaspora, largely to Australia, New Zealand, Canada and the United States (IOM, 2020[1]).

As an island nation surrounded by the ocean, Fiji's culture, traditions, values and customs are intimately linked to marine ecosystems, which have sustained life since time immemorial (Republic of Fiji, 2021[2]). In 2020, the country launched a National Ocean Policy to enhance management of its ocean resources and sustain the livelihoods and aspirations of current and future generations of Fijians. The policy states that "Fiji will not pursue a short-sighted exploitation of ocean ecosystems at the expense of bigger, bluer opportunities of a sustainable ocean economy." (Republic of Fiji, 2021[2]). It commits the country to sustainably manage 100% of its ocean and designate 30% of its waters as marine protected areas (MPAs) by 2030.

On the international stage, too, Fiji has demonstrated leadership regarding the conservation and sustainable use of the ocean. Fiji was the first country to sign and ratify the United Nations Convention on the Law of the Sea, the Kyoto Protocol and the Paris Agreement. Fiji co-chaired with Sweden the first ever United Nations Ocean Conference to Support the Implementation of Sustainable Development Goal 14, the "Ocean" goal. It also held the presidency of the 23rd Conference of Parties under the United Nations Framework Convention on Climate Change (UNFCCC) in 2017. In this context, Fiji has championed inclusion of the ocean agenda within the UNFCCC process through initiatives such as the Ocean Pathway Partnership. Fiji is also one of the 16 members of the High Level Panel for a Sustainable Ocean Economy, an initiative building momentum for a sustainable ocean economy in which effective protection, sustainable production and equitable prosperity go hand in hand.

Transitioning to a sustainable ocean economy holds the potential to generate sustainable economic opportunities, employment and innovation, and to fuel the recovery in Fiji. Transitioning to a sustainable ocean economy means pursuing a coherent unified vision of ocean management. In such a vision, the complexity of inter-sectoral relations is understood; environmental, social and economic values are integrated; and adequate resources are mobilised across sectors. Focusing only on economic growth, and "greening" later, would be more costly than taking immediate steps towards a bluer, more resilient and inclusive economy. Delaying the "blue path" would entail sharper subsequent corrective measures and higher risk of irreversible environmental damage, high-carbon lock-in and stranded assets. These, in turn, would be exacerbated by adverse distributional impacts. A sustainable ocean economy provides an opportunity to focus on all three dimensions of sustainability – environmental, social and economic. It will mean correcting unsustainable trends in existing sectors. Finally, it will entail developing new sectors and industries by assessing and balancing risks and rewards and integrating community interests and environmental concerns into decision making from the outset. Whether it is offshore wind energy, growing aquaculture or marine biotechnologies, the ocean offers new opportunities to create more diversified, sustainable and resilient economies. This is particularly important for Fiji. Its economy has recorded remarkable growth in the last two decades, but it has remained most reliant on the tourism sector. Consequently, it has remained particularly exposed to shocks in this sector, as well as to increasing environmental degradation and climate change impacts.

2.2. Fiji's ocean economy in the context of its overall economic development

Fiji is an upper middle-income country and the second largest economy among Pacific small island developing states (Pacific SIDS) after Papua New Guinea. In 2020, Fiji's national income per capita stood at USD 5 057.6 (World Bank, 2020[3]). Compared to other Pacific SIDS, Fiji is less remote and has long operated as a regional hub for maritime transportation, which has allowed for relatively more economic development. According to the Human Development Index, Fiji ranks 98 among 188 countries, slightly above most other Pacific SIDS (with a value of 0.74 vs. an average of 0.67 for the others).

Despite comparing relatively well to other Pacific SIDS, Fiji still faces large development challenges. Fiji is a developing economy with large pockets of poverty and a large subsistence agriculture sector. Its development trajectory has suffered from both natural and political shocks. Poverty remains significant, with a national incidence of 30% in 2019 (ADB, 2019[4]). Although the incidence of poverty has declined over time, reductions were mainly concentrated in urban areas, declining from 28% in 2002-2003 to 19%; in 2008-2009, rural areas recorded increased incidence of poverty from 40% in 2002-2003 to 43% in 2008-2009 (ADB, 2018[5]). In addition, agriculture remains the main source of livelihood for almost half of Fijians in rural areas, although its contribution to gross domestic product (GDP) only reached 8% prior to COVID-19 (World Bank Group, 2020[6]).

Challenges remain for Fiji to meet the Sustainable Development Goals (SDGs). Fiji ranks 62 in the overall SDG achievement of the 193 UN state members (Sachs et al., 2021[7]). It has met only 1 of the 17 SDGs, namely SDG 4 on the quality of education. Significant progress has been made towards SDG 3 (Good Health and Well-being) and two targets have been achieved: reducing global maternal mortality and ending preventable deaths of newborns and children under five (3.1 and 3.2). In addition, by 2020, Fiji had successfully integrated climate change measures into national policies, strategies and planning (13.2). Despite this progress, Fiji faces challenges, significant challenges or major challenges to meet 15 of the 17 SDGs (Figure 2.1).

Figure 2.1. SDG achievement in Fiji



Source: Sachs et al., (2021[7]), Sustainable Development Report 2021, https://www.sdgindex.org/reports/sustainable-development-report-2021/.

In the past two decades, Fiji has experienced sustained economic growth, but its small and undiversified economy remains highly exposed to shocks. Driven mainly by tourism, the Fijian economy has grown at an average of 3.3% a year between 2010 and 2014 and by 3.8% in 2018 alone. However, volatility marks Fiji's economic trajectory owing to low diversification. This makes the country susceptible to external shocks. It also depends strongly on imports, which in 2018 represented 55% of GDP, with fuel imports weighting heavily on Fiji's import bill.

Fiji's economy was driven for many years by sugar and textile exports, but its economy has more recently been fuelled by the tourism sector. The decline in preferential market access and the phasing out of a preferential price agreement with the European Union undermined earnings and competitiveness of the sugar and textile industries. Tourism has expanded since the early 1980s and had become the leading economic activity in Fiji before the COVID-19 crisis. Prior to the pandemic, the tourism sector contributed to nearly 40% of GDP and represented a major source of foreign exchange (World Bank Group, 2020[6]).

While global restrictions on international travel strongly hit Fiji's economy, the COVID-19 crisis also represents a chance to re-think the tourism sector, diversify the economy and seize new opportunities from the sustainable use and conservation of the ocean. The pandemic had a major impact on Fiji's economy (as discussed in detail in Chapter 3). However, it also brought to the fore vulnerabilities stemming from over-reliance on a single sector, and the need to diversify the economy to enhance resilience and opportunities to transform sectors so they become cleaner and more inclusive. While systemic changes are needed, encouraging examples are already arising. These examples are discussed in Chapter 6.

2.3. Fiji's ocean economy: Composition and trends

As an island economy, Fiji has few sectors that do not rely on the ocean. Most imported and exported goods rely on marine shipment using ports and other coastal infrastructure. Inter-island travel and movement of goods depends heavily on domestic maritime infrastructure and logistics. Tourism, one of the largest contributors to Fiji's economy, is largely centred on ocean activities and coastal infrastructure. Fisheries and aquaculture are important for both economic development and subsistence livelihoods**.** The fisheries sector contributes to the economy through exports, employment and revenue, and provides important recreational and social benefits (Kitolelei, Torii and Bideshi, 2009[8]).

Measuring the exact contribution of ocean-related industries to the economy remains a challenging task for countries around the world, including Fiji. Managing sustainably ocean and coastal resources requires reliable measures of the ocean's contributions to society and the effects of human activities on the marine environment the ocean economy depends on. However, standard national statistics, including as derived from the System of National Accounts, do not allow granular information on economic activities disaggregated by terrestrial and marine components. Therefore, it is often complex to derive solid estimates of the overall contribution of ocean-based activities. This is why several countries have started to compile "satellite accounts" to improve ocean economy statistics and their contribution to sound policy making in this area (Jolliffe, Jolly and Stevens, 2021[9]).

Table 2.1 compares ocean economy activities identified by the OECD (OECD, 2021[10]) and economic activities as aggregated in Fiji's national economic accounts. It thus suggests how ocean industries are reflected in Fiji's national accounts. In addition, detailed data sources relating to the ocean economy industries identified by OECD (2021[10]) are scattered across a number of different ministries. An initial mapping of main data sources for each of the ocean economy industries identified in OECD (2021[10]) is provided in Table 2.2.

Table 2.1. An initial mapping of ocean economy industries in Fiji's national accounts

Ocean economy sectors (OECD 2021)	Possible FBS allocated sector for economic reporting
Marine fishing	Agriculture, hunting, Forestry and Fishing
Marine aquaculture	
Processing and preserving of marine fish, crustaceans and molluscs	
Maritime passenger transport	Water transport
Maritime freight transport	
Maritime ports & support activities for maritime transport	
Maritime ship, boat and floating structure building	Transport equipment, Basic metals and Fabricated metals
Offshore extraction of crude petroleum & natural gas	Other non-metallic minerals, Mining and quarrying
Maritime manufacturing, repair & installation	Manufacturing, recycling, Basic metals and fabricated metal
Marine & coastal tourism	Food, beverages and tobacco, Hotels and restaurants, Retail trade (except of motor vehicles and motorcycles), Repair of household goods, Inland transport, Water transport, Air transport, Other supporting and auxiliary transport activities, Travel agencies
Offshore industry support activities	Renting of machinery & equipment and other business activities
Ocean scientific research & development	Education, Other community, social and personal services
Marine and seabed mining	Construction, Mining and quarrying

Source: Authors representation based on (OECD, 2021[10])and Fiji's National Bureau of Statistics.

Table 2.2. Initial mapping of primary data sources concerning ocean economy industries

Ocean economy sectors (OECD 2021)	Main data source in Fiji
Marine fishing	Ministry of Fisheries
Marine aquaculture	
Processing and preserving of marine fish, crustaceans and molluscs	
Maritime passenger transport	Maritime Safety Authority of Fiji
Maritime freight transport	
Maritime ports & support activities for maritime transport	Maritime Safety Authority of Fiji
Maritime ship, boat and floating structure building	
Maritime manufacturing, repair & installation	
Marine and seabed mining	Ministry of Fisheries/Department of Waterways

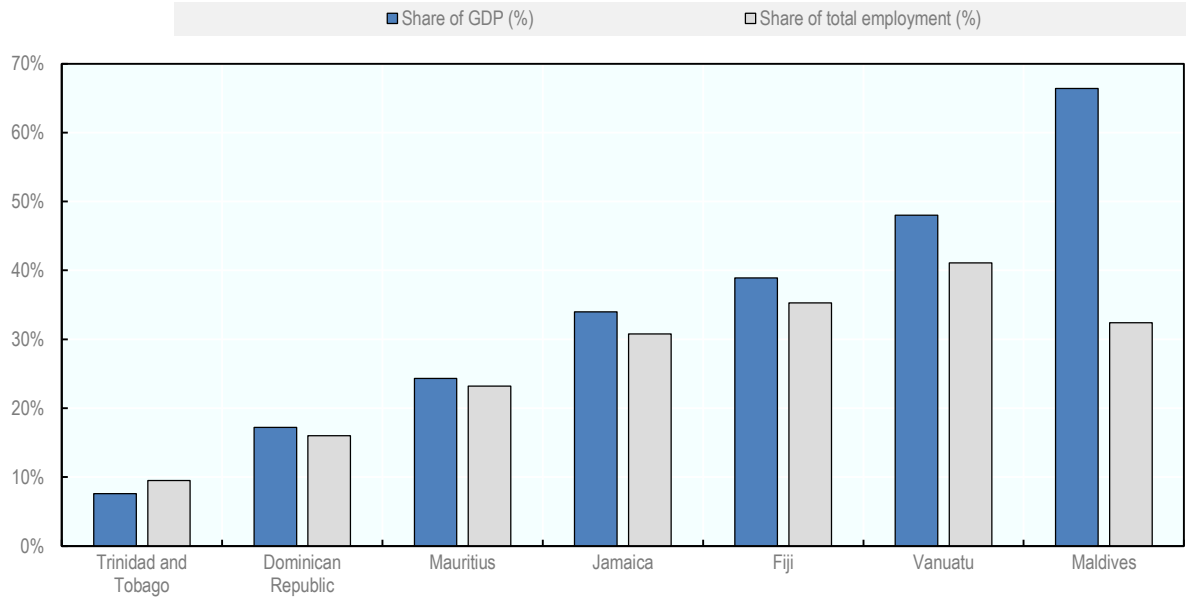
Source: Authors representation based on discussions with and information from Fiji's National Bureau of Statistics.

Most available studies focus on sub-sectors of the ocean economy, failing to provide a holistic assessment of its value in Fiji and other Pacific islands. The vast majority of studies focus on individual sectors of the ocean economy, or use microeconomic methods, such as estimates of consumer and producer surplus, to estimate the economic value of marine assets and services (Brander et al., 2020[11]). Most of these studies do not produce estimates on value added, or other national account statistics, in relation to the whole of the ocean economy. However, one study does attempt to estimate "gross marine product" of Melanesian countries, a measure of the contribution of the ocean economy of Melanesian countries to GDP (Hoegh-Guldberg and Ridgway, 2016[12]).

The only available estimate of Fiji's ocean economy as a whole places its direct and indirect contribution at one-third of Fiji's GDP (Natuva, 2021[13]). This study uses data from 2014, identifying fisheries and aquaculture, maritime transport and trade, coastal and maritime tourism, and maritime security as key sectors of Fiji's ocean economy. In addition, the ecosystem services[1] of the ocean are estimated at between USD 1.2 billion and USD 1.8 billion per year in Fiji (Gonzalez et al., 2015[14]). Initial estimates from a recent exercise suggest mangrove ecosystems contribute about 1.8% Fiji's GDP (GOAP, forthcoming[15]).

The tourism sector in Fiji contributed 38.9% to GDP and 35.5% to employment prior to COVID-19 (Figure 2.2). In Fiji, tourism has expanded since the early 1980s and, with the decline of the sugar and textile industries, it became the leading economic activity in the islands before the COVID-19 crisis. At 38.9% of GDP, the tourism sector is larger in Fiji than in several other individual SIDS (Figure 2.2), and well above the average in OECD countries estimated at 2.5% pre-COVID-19. Between 2014 and 2019, the value added of the sector grew by 28% – from FJD 956 408 (USD 442 052) to FJD 1 222 245 (USD 564 922) (Table 2.3). The contribution of Fiji's tourism value added in the economy's total value added hovered around 13% in 2014-19 (Table 2.3). Fiji's tourism satellite accounts indicate that tourism directly supported 28 771 jobs in 2018. The sector has also surpassed sugar as Fiji's main export earner. Over 90% of tourism attractions in Fiji are maritime- or coastal-based.

Figure 2.2. High contribution of the tourism sector to Fiji's economy and employment (2018 data)



Note: Share of employment (%) is relative to the total employment in the economy and includes both direct and indirect employment in tourism.
Source: Authors representation based on data in (Hampton and Jeyacheya, 2020[16]).

StatLink https://stat.link/0zawgq

Table 2.3. Economic information for industries making up Fiji's tourism sector

Evolution of tourism value added between 2014 and 2019

Tourism value added	2014	2015	2016	2017	2018	2019[p]
Tourism-characteristics industries						
Accommodation	369 946	403 770	381 286	516 473	543 081	590 099
Food and beverage serving industry	32 467	35 016	33 017	35 369	40 041	41 754
Road passenger transport	21 242	25 921	26 757	27 701	27704	28 124
Water passenger transport	10 644	11 411	12 188	12 553	12 656	12 754
Air passenger transport	251 588	294 835	305 548	298 281	229 575	209 034
Transport equipment rental	14 461	14 810	14 918	15 773	16 605	16 680
Travel agency and tour operator activities	45 105	52 142	51 039	51 739	52 945	54 578
Recreational and cultural industry	12 528	12 696	14 935	14 695	14 768	15 502
Tourism-related industries						
Retail trade	161 755	164 224	176 199	184 422	195 259	204 127
Financial activities	55	55	55	56	56	57
Education	2 728	2 911	2 945	3 379	3 402	3 426
All non-tourism related industries	33 889	36 127	40 140	42 100	44 678	46 110
Total	**956 408**	**1 053 916**	**1 059 027**	**1 202 541**	**1 180 770**	**1 222 245**
Total gross value added (GVA)	7 210 327	7 708 405	8 406 666	8 930 771	9 363 403	9 667 899
Total tourism gross value added (TGVA)	956 408	1 053 916	1 059 027	1 202 541	1 180 770	1 222 245
Growth rate of TGVA	23.1	10.2	0.5	13.6	-1.8	3.5
TGVA contribution to GVA	**13.30%**	**13.70%**	**12.60%**	**13.50%**	**12.60%**	**12.60%**

Source: Fiji Bureau of Statistics (2020[17]), Fiji's Direct Tourism Contribution, https://www.statsfiji.gov.fj/images/documents/Economics_Statistics/Annual_Reports/Satellite-Accounts/Fijis_Direct_Tourism_Contribution_Release_2014-2019.pdf

The tourism sector also has a multiplier effect on other sectors of Fiji's economy, although linkages could be strengthened. The tourism sector supports numerous other industries in Fiji's economy, such as transport and agriculture. For instance, the transportation industry is involved in moving tourists between the main arrival hubs and various tourist destinations throughout Fiji. Agriculture is essential for the provision of food to hotels and restaurants. With increasing tourist numbers, the need for food supply also increases. However, Fiji has struggled to meet such demand, resulting in high food imports to sustain the growing tourist numbers (Natuva, 2021[13]). A recent study by the International Finance Corporation (IFC) (2018[18]) estimates that hotels and resorts in Fiji's main tourist areas imported more than half of their fresh produce in 2017 (52% or USD 18.8 million). The study also points to the potential of increasing local production to supply the tourism sector in Fiji. It suggests that, with the right policies and motivation, Fiji could grow nationally 63% of the value of current imported food. This would represent USD 11.8 million worth of fresh produce that could be deducted from its import bill.

Cruise ship tourism has grown significantly in Fiji. Recent years have witnessed an exponential rise of the cruise industry globally. Indeed, the industry set a record in terms of new builds, new cruise brands, expedition ships and capacity growth in 2019. In this context, several countries have begun to enlarge their ports to accommodate the industry's increasingly larger cruise ships. In Fiji, too, cruise tourism was an expanding market pre-COVID-19. IFC (2019[19]) estimated "cruise companies, their passengers and crew spent at FJD 44.2 million (USD 21.4 million) in Fiji in 2018". This represents a direct contribution of 0.66% of GDP to Fiji in 2018 (IFC, 2019[19]). An estimated 158 000 tourists visited Fiji by cruise liner in 2015. However, cruise passengers usually have short stays in countries and are found to spend on average 94% less than long-stay tourists (Brida and Zapata, 2010[20]). This seems to be the case in Fiji, where the average stay of cruise tourists was only 1 day in 2015 compared to an average of 14.9 days for other

tourist categories, as shown in Table 2.4 (Fiji Bureau of Statistics, 2018[21]). Moreover, the global cruise companies often capture spending by cruise tourists.

Table 2.4. Comparison of cruise ship passengers with other tourist types: Length of stay and expenditure

	2011	2012	2013[p]	2014[p]	2015[p]
Average length of stay (days)	**9.4**	**9.6**	**9.5**	**9.5**	**9.5**
Business	8.4	9.3	8.8	8.8	8.9
Personal					
Visiting friends & relatives	20.1	21.5	20.5	21.0	20.9
Others	13.7	15.4	15.0	14.7	15.1
Cruise ship passengers	1.0	1.0	1.0	1.0	1.0
Total visitor days	**6 292 985**	**6 266 998**	**6 142 939**	**6 483 783**	**6 984 831**
Business	353 811	288 594	319 180	330 860	352 227
Personal	5 939 174	5 978 404	5 823 759	6 152 923	6 631 604
Visiting friends & relatives	1 209 920	1 199 270	1 119 382	1 231 220	1 287 188
Others	4 729 254	4 779 134	4 704 377	4 921 703	5 345 416
Cruise ship passengers	44 042	60 002	111 931	65 732	85 322
Per diem expenditure [FJD]					
Business	223.67	227.54	233.39	237.73	244.16
Personal					
Visiting friends & relatives	64.21	65.41	66.82	68.14	69.98
Others	170.69	172.35	175.80	181.80	184.96
Cruise ship passengers	61.30	63.05	64.33	64.64	67.69
Tourism earnings [FJD M]	**1 286.5**	**1 300.0**	**1 318.2**	**1 404.6**	**1 506.2**
Business	77.8	65	73.6	77.3	84.6
Personal	1 208.7	1 235.0	1 244.6	1 327.3	1 475.6
Visiting friends & relatives	77.8	78.4	74.8	83.7	89.8
Others	1 128.1	1 152.8	1 162.6	1 239.3	1 380.0
Cruise ship passengers	2.8	3.8	7.2	4.3	5.8

Note: P stands for projected.
Source: Fiji Bureau of Statistics (Fiji Bureau of Statistics, 2016[22]), Fiji's earnings from tourism - December & Annual 2015, https://www.statsfiji.gov.fj/latest-releases/tourism-and-migration/earnings-from-tourism/595-fiji-s-earnings-from-tourism-december-annual-2015.html.

The fisheries sector is Fiji's third largest export earner and is responsible for the livelihoods of a significant share of Fiji's population. It is composed of three main segments: offshore fisheries, inshore fisheries and aquaculture.

The offshore fishery relates to commercial tuna species, including bigeye and yellowfin. These high-value commodities are largely destined for the Japanese and US markets as fresh and chilled tuna (sashimi market) and loin fillets. Frozen albacore is generally sold to local canneries or exported to American Samoa

(Ministry of Fisheries, 2018[23]). With its offshore fishery, Fiji seeks to create more value by becoming a regional hub for fish processing. However, both changes in tuna migratory patterns due to rising ocean temperatures (Bell, Johnson and Hobday, 2011[24]) and the current proposal for off-shore Marine Protected Areas to achieve Fiji's commitment of conserving 30% of its ocean by 2030 Fiji's (as discussed in Chapter 4) are expected to affect the sector and will require mitigation measures.

Offshore fisheries are known as the main source of revenue for the fishery industry; it is the only segment reflected in national statistics on fisheries. It represents the third largest share of Fiji's exports, accounting for an average of 12% of agriculture GVA (1% of GDP) (Fiji Bureau of Statistics, 2022[25]).

Fiji's inshore fisheries involves small-scale commercial reef fisheries targeting domestic markets and the export of inshore resources such as aquarium products. It contributes significantly to the local Fijian economy for both domestic food supplies and income generation. Subsistence fisheries account for over 30% of fisheries sector output (Ministry of Fisheries, 2018[23]). The inshore fishery is estimated to produce more than 16 times the food for local consumption than the offshore fishery (Gillett, Lewis and Cartwright, 2014[26]). It also employs about four times the labour force of the offshore segment (Kitolelei, Torii and Bideshi, 2009[8]). However, the inshore fishery is barely reflected in official statistics on fisheries.

The tuna cannery in Levuka is the largest employer in Ovalau Island and many ancillary businesses depend on its existence. Pacific Fishing Company Limited, mainly owned by the Fijian government (99.6%), is operated by the Minister for Public Enterprises. The company has its main processing plant in the Island of Levuka and employs more than 1 000 people of whom more than half are women (Parliament of the Republic of Fiji, 2019[27]).[2] In 2014, the tuna industry provided direct employment for 20.8% of the total number of people employed across the Pacific (Gillett and Tauati, 2018[28]). Strong demand for local canned products has fostered economic growth, but climate change is projected to affect migratory patterns of the albacore tuna and may result in shortages of raw tuna supply. Further challenges to the processing business include ageing equipment, the remote location of Levuka and high operational costs related to fuel, ports and labour.

Aquaculture is still small in Fiji. Aquaculture is considered to be one of the sectors with the largest potential for growth globally (OECD, 2020[29]). In recent years, it has expanded substantially, driving up total fish production against a more stagnating trend for wild fish catch. In 2016, global aquaculture production, including both inland and marine production, was 110.2 million tonnes and worth approximately USD 243.5 billion (OECD, 2020[29]). Through the years, aquaculture in Fiji has developed with many species cultured in marine, brackish water and freshwater. The cultured species include tilapia, carps, freshwater prawns, saltwater shrimp, seaweed, clams, giant clams, pearl oysters, mud crabs, corals and turtles (Kitolelei, Torii and Bideshi, 2009[8]). The Strategic Plan for 2019-2029 for the fishery sector includes a rapid expansion of aquaculture as one of its key priorities (Ministry of Fisheries, 2019[30]), with specific targets for tilapia and shrimp production. The expansion of small-scale aquaculture is seen as a means to diversify the fisheries sector, increase food security and generate income. Despite these priorities, data suggest that Fiji's aquaculture sector is still small, with the total value of aquaculture harvests standing at USD 1.45 million (Gillett and Tauati, 2018[28]) (Table 2.5).

Table 2.5. Fiji's aquaculture production volumes and values

Commodity	2014 production volume (kg, or pieces if noted)	2014 production values (FJD)	2014 production values (USD)
Tilapia	150 500	56 750	266 035
Freshwater shrimp	11 462	183 392	92 622
Penaeid shrimp	5 617	140 425	70 922
Pearls	103.2	157 800	796 970
Pearl oyster spat	45 000 pieces	90 000	45 455
Seaweed	30 000	27 000	13 636
Cultured coral	2 706 pieces		
Cultured rock	37 530 pieces	150 000	75 758
Mud crab	7 000	180 000	90 909
Total	**204 682.2 kg plus 85 236 pieces**	**FJD 2 875 567**	**USD 1 452 307**

Source: Gillet and Tauati, (2018[28]), Fisheries of the Pacific Islands: Regional and national information, https://www.fao.org/publications/card/en/c/7688c916-f1f2-5fe4-b306-2f7a0528e829/.

Maritime transport and ports in Fiji are of strategic importance for the country. Fiji relies heavily on maritime transport for trade. For the past two decades, Fiji's maritime transport sector has continued to grow. Port services and the shipbuilding industry directly contributed up to 2.3% of Fiji's GDP in 2016, although shipbuilding has declined significantly since the 1970s and 1980s. Approximately 90% of Fiji's import and export trade occurs through the two ports of Suva and Lautoka (ADB, 2013[31]). Suva is the country's busiest international entry port. Despite recent investments to expand these two main ports, congestion in and around the ports is still significant. The Asian Development Bank (ADB) supported the Fiji Ports Development Project through a loan facility. This project upgraded both wharves; enabled government investment in mobile cranes to facilitate mechanised loading and unloading of shipping containers; and raised productivity. A recent study assessed the ability of the maritime infrastructure to meet increasing demand. It deemed the international port at Suva is not expected to be a constraint for large, established logistics players (IFC, forthcoming[32]). However, it noted that new entrants struggle to enter the market due to congestion in and around the port. ADB is continuing to assist the Fiji government to assess the viability of relocation of elements of the King's Wharf, Suva (e.g. passenger vessels, fishing vessels, cruise ships). Suva Port may reach capacity between 2026 and 2030 (IFC, forthcoming[32]).

Fiji is also considered to be a strategic hub for the South Pacific. Neighbouring countries such as Tuvalu and Kiribati rely heavily on Fiji ports as a transhipment point for goods with the rest of the world. Fiji's high reliance on maritime transport makes it highly dependent on market developments in global maritime transport. Increased consolidation of container shipping that transports most consumer goods and manufactured goods has resulted in a growing tendency of hub and spoke-port networks. As a consequence, smaller ports and ports in the periphery have less direct connections than they had before. This is also the case for Fiji and a tendency that has played out during the pandemic, even if it is part of a longer trend. In the face of these trends, Fiji could team up with counterparts in the region to develop a co-ordinated strategy.

Domestic inter-island shipping is considered a major constraint to the development of outer islands beyond Viti Levu. However, inter-island shipping remains heavily reliant on imported fuels. It operates with vessels that are on average 20 years old, which are highly inefficient and polluting.

The high consumption of diesel by old vessels combined with Fiji's high reliance on imported fuels translates into high costs of the shipping sector. The absence of sustainable sea transport options for outer islands is a major limiting factor for their sustainable development (Bola, 2017[33]).

The government subsidises inter-island shipping. However, Fiji has endorsed the Agreement on Climate Change, Trade and Sustainability (ACCTS). This could lead to phasing out fossil fuel subsidies for the shipping sector; Fiji's Ministry of Trade is studying the socio-economic implications of this move.

Overall, many concerns remain for Fiji's shipping sector. In 2020, a parliamentary petition to the government of Fiji highlighted concerns regarding the shipping sector over reliability, safety, affordability, environmental impacts, etc.

2.4. Sustainability trends of Fiji's ocean economy

Fiji's exposure to natural disasters poses significant challenges to its socio-economic development. Many SIDS, including Fiji, are located in regions that are most prone to natural disaster. Tropical storms and cyclones perennially afflict SIDS. Furthermore, their dispersed and remote geographies, and small economies, make them poorly equipped to respond to these extreme events. Given the small size of SIDS economies, a single natural disaster can translate into losses several times the country's GDP. As such, it can wipe out entire economic sectors and erode the development gains accumulated over decades. Globally, SIDS make up two- thirds of the countries that suffer the highest relative losses – between 1% and 9% of their GDP each year – from natural disasters (OECD/The World Bank, 2016[34]).

Fiji is located in the tropical cyclone belt, which makes it especially exposed to tropical storms, rising sea levels, floods and landslides. Every year, cyclones and floods cause substantial property damages destroying plantations, roads, mangrove forests, coral reefs, etc. In 2016, Fiji experienced unprecedented economic losses following Tropical Cyclone (TC) Winston with estimated damages reaching 20% of GDP. Estimates suggest that Fiji's annual losses due to such extreme weather events could reach 6.5% of GDP by 2050 (World Bank, 2017[35]).

A growing host of interlinked and mutually reinforcing impacts of climate change affects Fiji's ocean sectors and overall economy. The key climate change impacts on Fiji's coastal and marine ecosystems concern: (i) changing weather patterns, including more heavy rains translating into frequent floods; (ii) coral bleaching; and (iii) sea-level rise (Mangubhai et al., 2019[36]). Fiji experienced its largest coral bleaching event in the 2000 La Niña. Sea surface temperatures rose above the summer maximum for five months. This resulted in extensive coral bleaching with coral community losses of 40-80% across Fiji (Mangubhai et al., 2019[36]). Coral bleaching happens when the water temperature exceeds 29.2°C. In 2019, the seawater temperatures in Fiji between January and May ranged from 27-31°C (marine ecology consulting, 2019[37]). Coral reefs, Fiji's main touristic attraction, are globally projected to decline by a further 70-90% at 1.5°C warming (Masson-Delmotte et al., 2019[38]). Modelling work on the island of Viti Levu identified Fiji's capital Suva (the major tourist centre and arrival port of Nadi) and Fiji's second largest city Lautoka at high risk of sea-level rise (Gravelle and Mimura, 2008[39]). The increasing pressure on ocean makes it urgent to properly assess risks and implement mitigation plans that can ensure its preservation.

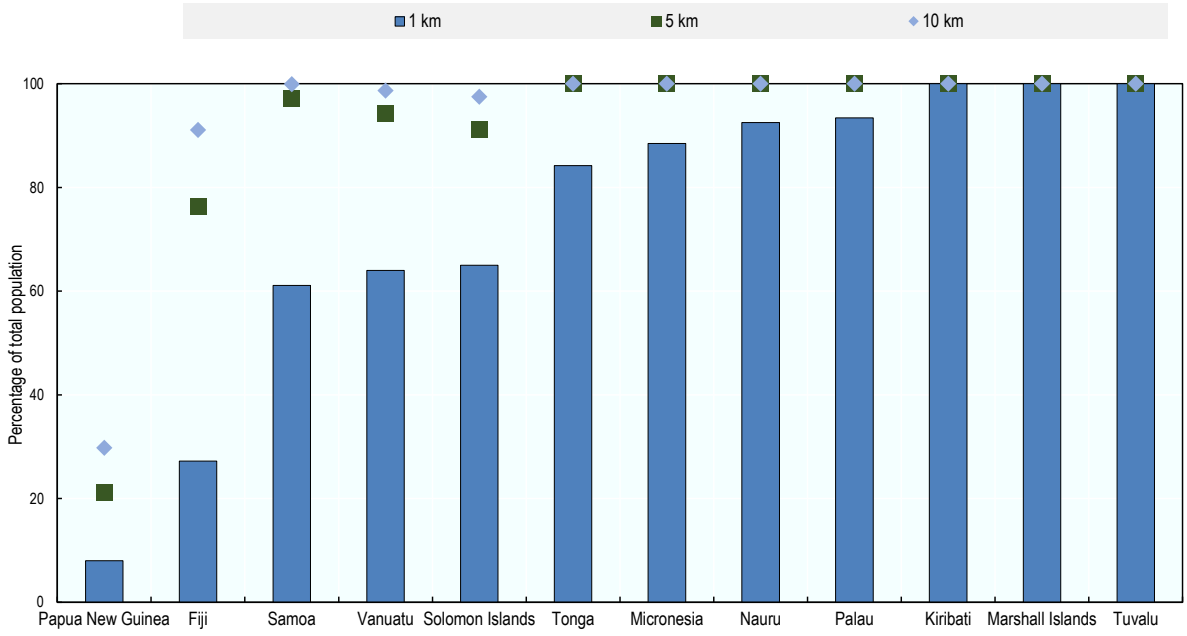
Growing impacts of climate change could result in food insecurity. Loss of coastal resources and reduced productivity of fisheries are among the expected impacts of climate change. Globally, annual catches from marine fisheries are projected to decline by 3 million tonnes if warming reaches 2°C. Overfishing poses an additional threat to corals by removing key species like herbivorous fishes that eat algae that compete with corals for space and help keep the ecosystem in balance. Under projected emissions scenarios, sea surface temperature, sea-level rise and ocean acidification are likely to increase (Bell, Johnson and Hobday, 2011[24]). These in turn are likely to affect food webs in the ocean, including the migratory patterns of pelagic species, such as tuna. By 2050, under a high global greenhouse gas (GHG) emissions scenario without effective climate change mitigation policies, the total biomass of three tuna species in the waters of ten Pacific SIDS could decline by an average of 13% due to a greater proportion of fish occurring in the high seas (Bell, Senina and Adams, 2021[40]). The potential implications

for Pacific Island economies in 2050 include an average decline in purse-seine catch of 20%, an average annual loss in regional tuna-fishing access fees of USD 90 million and reductions in government revenue of up to 13% (Bell, Senina and Adams, 2021[40]). Although no studies focus on Fiji, growing evidence suggests that climate change will affect reef fisheries. This could manifest in the performance of individual species, trophic linkages and alternations to recruitment dynamics, population connectivity and other ecosystem processes (Munday et al., 2008[41]). Water quality is also at risk as flooding and strong winds increase the risk of saltwater intrusion (Masson-Delmotte et al., 2019[38]). Disrupted supply of water and food can force communities to migrate to safer ground.

Coastal erosion and sea-level rise due to climate change are leading to permanent community relocations. Pacific SIDS populations are especially vulnerable to erosion, inundation or regular flooding, as on average 91% of people live within 5 km of the coast (Figure 2.3). Relocation of people and assets away from sites at risk is one consequence of climate change. In 2014, the village of Vunidogoloa was the first to be relocated due to coastal erosion and storm surges caused by climate change-induced sea-level rise (Merschroth et al., 2020[42]). The total relocation cost for Vunidogoloa was estimated at USD 978 229 (Ministry of Finance, 2015[43]). Since 2014, six other communities have been fully or partially relocated in Fiij due to climate change events. Coastal erosion impacts are exacerbated by inundation events, which are expected to increase with sea-level rise and changed weather patterns and more intense rainfalls. Further, the loss of coral reefs will result in greater wave energy reaching shorelines and reduced sediment production, while higher sea levels increase the risk of wave processes causing erosion (Feresi et al., 2000[44]; Jolliffe, 2016[45]). Future projections incorporating Antarctic's contribution on sea level show a rise of between approximately 0.09-0.18 m by 2030 and between 0.66-1.21 m by 2100 (Table 2.6). Merschroth et al. (2020[42]) estimate that 7 472 buildings will be inundated by 2050 and 10 304 by 2100. According to these estimates, by 2050, 241 buildings will be inundated on average per year. The province of Ba (which hosts one of the most visited towns of the country) and Nadi (the touristic hub) could be the most severely affected (Figure 2.4). Moreover, sea-level rise is projected to have major impacts on the primary urban areas of Suva, Lautoka, Lami, Labasa and Nasinu.

Figure 2.3. Pacific SIDS are particularly prone to sea-level rise and coastal erosion

Percentage of Population living within 1, 5 and 10 km Coastal Buffers

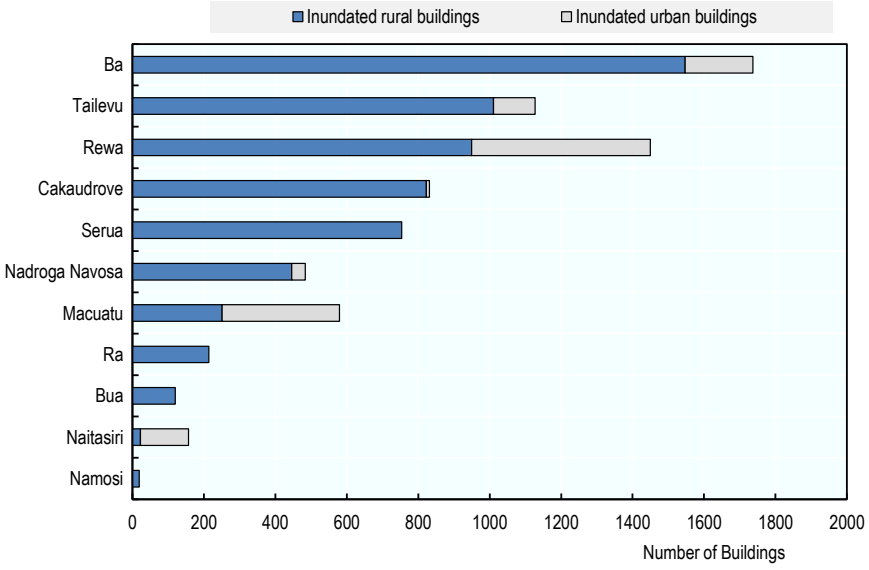


Source: Source: Authors' representation based on Pacific Data Hub, https://pacificdata.org/data/dataset/percentage-of-population-within-1-5-10km-coastal-buffers.

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Figure 2.4. Rural areas are expected to suffer the most from sea-level rise

Number of inundated building under the scenario of 0.22m sea level rise by 2050



Note: Estimates are based on the assumption of sea level rising of 0.22 m for the year 2050.
Source: Authors' representation based on data in (Merschroth et al., 2020[42]), www.mdpi.com/2071-1050/12/3/834.

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Table 2.6. Median sea level projections for Fiji

Year	Low emissions scenario	High emissions scenario
2030	0.13 [0.09-0.17]	0.14 [0.10-0.18]
2040	0.18 [0.13-0.23]	0.20 [0.15-0.27]
2050	0.23 [0.17-0.30]	0.28 [0.21-0.37]
2060	0.27 [0.20-0.36]	0.37 [0.28-0.49]
2070	0.32 [0.23-0.42]	0.47 [0.36-0.63]
2080	0.36 [0.26-0.49]	0.60 [0.45-0.80]
2090	0.41 [0.30-0.56]	0.73 [0.55-0.99]
2100	0.46 [0.33-0.63]	0.89 [0.66-1.21]

Note: **Units are metres** and the 5-95% range is relative to 1986-2005. Representative Concentration Pathways, or RCP 2.6 corresponds to the "Low emissions scenario" and the RCP 8.5 corresponds to the "High emissions scenario".
Source: CSIRO and SPREP, (2021[46]), Current and future climate for Fiji: enhanced 'NextGen' projections Technical report, https://publications.csiro.au/publications/publication/PIcsiro:EP2021-2149.

Overfishing and changes in fish migratory patterns affect the fisheries sector. The overexploitation of fish stocks was identified as one of the major constraints affecting the Fijian fisheries sector (Gillett and Tauati, 2018[28]). Many coastal resources, especially those close to the urban markets, are fully exploited. Giant humphead wrasse and bumphead parrotfish have been overexploited to the point of local extinction and some medium- to larger-size grouper species have undergone marked declines over the past decades, resulting in seasonal bans during breeding periods (Prince et al., 2021[47]). Sea cucumber densities are reported to be critically low for some species, and stock numbers of pearl oysters – in particular of *Pinctada margaritifera* – are considered too low to support expansion of pearl farming. Further, high exploitation of tuna resources outside the Fiji zone by foreign fishing vessels has translated in a reduction in catch rates in Fiji's coastal areas. Lack of awareness on the part of coastal communities of the limitations for fisheries development and the consequences of overexploitation are also critical issues affecting sustainability (Gillett and Tauati, 2018[28]). Overall, at the current rate of exploitation of fish and inadequate coastal fisheries management systems in place, Fiji will not be able to meet the recommended the 34–37 kg per year per capita fish consumption needed for good nutrition or to maintain current consumption by 2030 (Bell et al., 2009[48]).

Rising ocean temperatures are projected to affect offshore fisheries. Catches from the Western and Central Pacific represent over half of all tuna produced globally. However, this could change drastically as ocean temperatures rise.

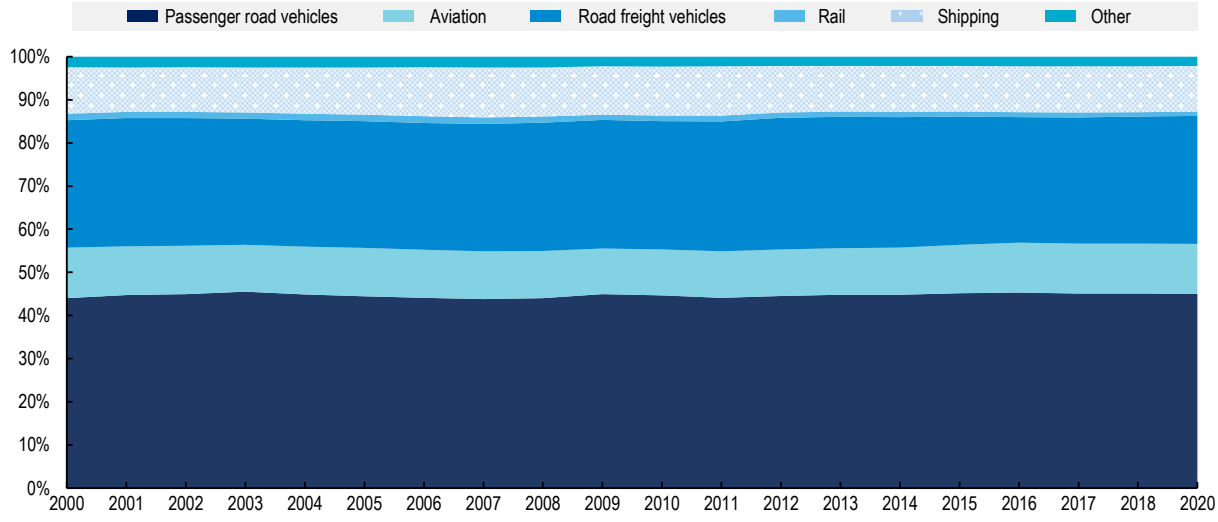
Fiji's tourism sector faces growing risks from environmental degradation and climate change. Globally, the tourism sector has a high climate and environmental footprint. Mass tourism can produce large environmental impacts due to increased use of local resources, and it can generate waste that puts under pressure the already fragile waste management system in SIDS. These sources of pollution are projected to increase as populations, coastal cities and tourism continue to grow. The tourism sector also requires heavy energy and fuel consumption. Its growth over recent years has put marine and land ecosystems under increasing stress and challenged the achievement of the Paris Agreement targets. Studies over the past decade have estimated that tourism has contributed between 5-8% to global GHG emissions (OECD, 2021[49]). However, tourism can have positive or negative impacts depending on how it is planned, developed and managed (UNWTO, 2012[50]). For instance, the tourism sector also contributes to the conservation efforts and the livelihoods of local communities of many countries. The United Nations World Tourism Organization (UNWTO) (2012[50]) estimates that 14 African countries generate about US 142 million in protected-area entrance fees.

Fiji's tourism sector depends highly on the attractiveness of the natural environment. In Fiji, the sector has been associated with mangrove clearance and coastal degradation, both of which aggravate problems such as coastline erosion, vulnerability to natural disasters, fish stock declines, poor water quality, pollution and biodiversity loss (Garcés-Ordóñez et al., 2020[51]; Singh, Jamal and Ahmad, 2021[52]). Tourist activity and urbanisation concentred along coastlines have major impacts on coral reefs, one of Fiji's major tourist attractions. Concentration of reef-harming nutrients was found to be higher near hotels and populated cities (Levett and McNally, 2003[53]).

Recent research highlighted that tourism stakeholders in Savusavu on Vanua Levu in Fiji are concerned about the environmental impacts of tourism (Graci and Van Vliet, 2020[54]). Specific areas relate to waste management and wastewater due to lack of adequate waste management infrastructure; destruction of marine and coastal natural assets, such as mangrove destruction; and growing impacts from climate change. There is no centralised wastewater treatment system in Savusavu. If individuals want to recycle their waste, they have to pay for their recycling to be shipped to the main island, which many cannot afford.

Lagging behind in decarbonisation of the shipping industry can result in future penalties. The shipping industry accounts for 2.6% of total GHG emissions globally and 15% of transport emissions in 2018 (Figure 2.5) (IMO, 2020[55]). In the absence of effective mitigation measures, shipping emissions are expected to increase from 90% to 130% by 2050 (IMO, 2020[55]). The use of low-carbon fuels in international shipping is virtually zero and biofuels account for only 0.1% of final energy consumption (IEA, 2021[56]). The shipping industry across Pacific nations is particularly dependent on imported and polluting fossil fuels. Fiji's domestic industry must be prepared to face the carbon penalties likely to emerge globally in the next five to ten years. Although Fiji's contribution to greenhouse gas (GHG) emissions is negligible, Fiji is strongly committed to reducing carbon emissions from its shipping sector. To that end, it has embraced a target of net zero carbon emissions by 2050 as part of a coalition of six Pacific countries (i.e. the Pacific Blue Shipping partnership, led by the Marshall Islands).

Figure 2.5. Transport sector global CO_2 emissions by mode



Note: "Other" includes pipeline and non-specified transport.
Source: Authors' representation based on data from IEA (2022[57]).

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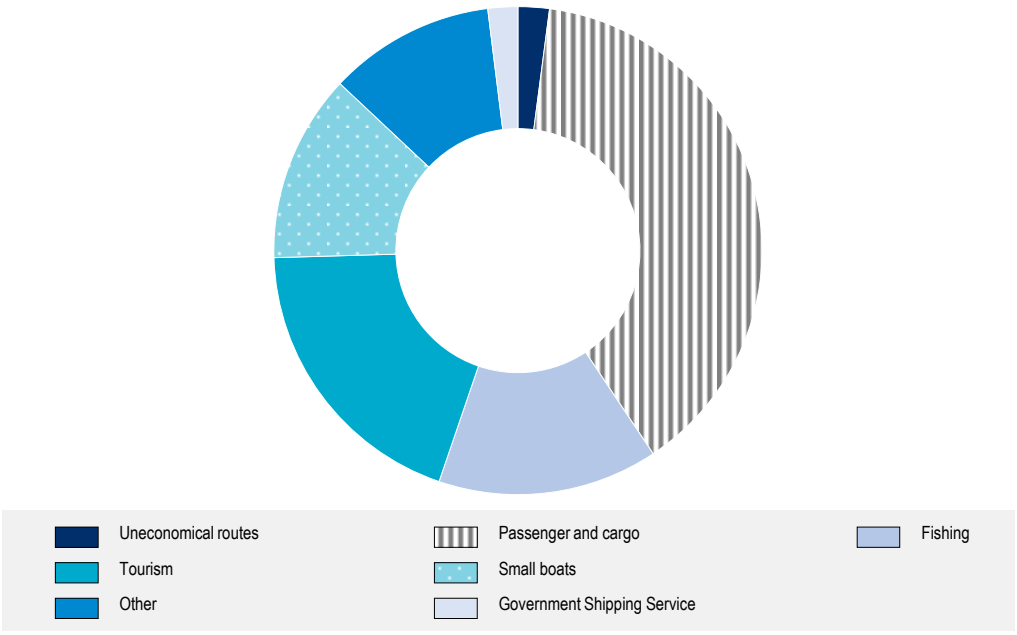
Fiji Low Emission Development Strategy (2018) notes estimated emissions of the domestic maritime sector in 2016 at 174 kilotons of CO_2 with an estimated increase to 198.5 kilotons in 2020 (Ministry of Economy,

2018[58]).Passengers and cargo transportation account for the largest share of Fiji's maritime transport emissions (Figure 2.6). At the same time, seaports are highly exposed to climate change impacts, including sea-level rise and increased intensity of storms. In 2018, the International Maritime Organization adopted its initial strategy on the reduction of GHG emissions from ships. This aimed to least halve sector-wide emissions (vs. 2008) by 2050 and achieve zero GHG emissions as soon as possible this century.

Investment in green and decarbonisation technologies represents an up-front expense and a new type of investment, which may not be readily supported by traditional maritime financing instruments. Financial support is needed to accelerate pathways for zero-carbon bunker fuels. This would enable the industry to make long-term investments, and enable developing countries to adapt port infrastructure to climate change.

Increased maritime traffic in Fiji's ports has also generated pollution. The increased maritime traffic in Fiji's ports has also generated pollution, particularly oil pollution from ships. Fiji is cognisant of the environmental risks associated with maritime transport. It has taken positive actions to mitigate the threat to the health of the ocean and its ecosystems. In 1983, for example, Fiji acceded to the International Convention for the Prevention of Pollution from Ships (MARPOL). It is also taking steps to decarbonise its domestic shipping industry. However, there often seems to be a disconnect between domestic policies that target expansion of economic development opportunities and policies to tackle climate change, green growth and ocean health. Development promotion efforts include measures to increase the domestic fleets, expand franchise servicing areas, increase subsidies through fuel rebates and tax concessions, and build infrastructure.

Figure 2.6. Breakdown of Fiji's emissions from maritime sector, 2016



Note: Fishing includes domestic flagged vessels only. Fiji has ten uneconomical routes that are part of the Government Shipping Franchise Scheme. Fiji Low Emission Development Strategy estimates the total emissions for the maritime sector in 2016 at 174 kilotonnes of CO_2. The shares refer to this total.
Source: Authors' based on Fiji Low Emission Development Strategy, (Ministry of Economy, 2018[58]).

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Risks from deep seabed mining. Globally, commercial deep seabed mining activities have not yet started, but the area in which exploration contracts have been granted within national jurisdictions amounts to 900,000 km^2. Outside of national jurisdictions, deep sea mining activities are regulated by the International Seabed Authority (ISA), which has so far granted 31 concessions for exploration in an area exceeding 1.3 million of kilometres - roughly more than four times the size of Italy. The Clarion – Clipperton area off the Pacific Ocean is estimated to be a particularly rich area, containing more manganese, nickel, cobalt, titanium and yttrium than the entire terrestrial reserves. The industrial exploitation of these resources, however, could cause irreversible damage to underwater ecosystems and the life-giving functions they provide. Following the appeal of 570 scientists from 44 different countries, in 2021 members of the International Union for Conservation of Nature (IUCN), which has 1 400 members from over 170 countries, passed a motion to establish a moratorium on deep seabed mining until more empirical evidence on potential environmental impacts is available. Currently, 95% of the ocean remains unexplored and uncharacterised. The huge gaps in knowledge of deep sea ecosystems, the lack of technologies able to minimize damage and the vulnerable nature of ecosystems in the deep sea, point that the deep seabed mining industry is not in a position to guarantee the preservation of life and life-giving functions where it would operate.

Fiji's potential for deep seabed mining is understood to be limited to one of the three main kinds: seafloor massive sulphides. A Korean deep-sea mineral exploration company was awarded an exploration licence in 2011, which was renewed in 2017 for four years. Commercial mining is not anticipated to be possible until the 2030s. In the Pacific Possible report (World Bank, 2017[59]), deep seabed mining is identified as one of five potential sources of transformative growth in the Pacific. However, given limited understanding of the environmental impacts of deep seabed mining and weak regulations, it recommends a cautious approach. So far, the Precautionary Principle has been applied to deep seabed mining. However, as more countries and companies become interested in commercial deep seabed mining, pressures to move from exploration to exploitation may grow. The Fiji prime minister has publicly banned deep-sea mining, and a ten-year moratorium is included in drafts of the Climate Change Bill. However, the Climate Change Act 2021 did not include these clauses, nor did the National Ocean Policy make any specific commitments. Exploratory licences were always excluded from the proposed moratorium.

The current picture and future prospects for deep-sea mineral mining within Fiji territorial waters and the wider Pacific is unclear. Despite the prime minister's appeal to other Pacific Island leaders for a wider moratorium, there has been no regional agreement. Nauru, in particular, has championed the potential benefits. Fiji's public stance on a moratorium does not appear to have been officially implemented within Fiji. The Ministry of Lands and Mineral Resources, for example, is understood to be relatively unrestricted in projects it can support.

References

ADB (2019), *Poverty Data: Fiji*, webpage, http://www.adb.org/countries/fiji/poverty (accessed on 24 February 2022). [4]

ADB (2018), *Poverty Analysis Summary*, webpage, https://www.adb.org/sites/default/files/linked-documents/cps-fij-2014-2018-pa.pdf#:~:text=2.%20Poverty%20indicators.%20Poverty%20remains%20a%20significant%20concern,poor%20people%20is%20in%20urban%20and%20peri-urban%20areas. (accessed on 24 April 2022). [5]

ADB, A. (2013), *Fiji Maritime Transport: Suva and Lautoka Ports*, https://www.adb.org/features/fijis-ports-open-wider-world-report-card (accessed on 28 January 2022). [31]

Bell, J., J. Johnson and A. Hobday (2011), *Vulnerability of Tropical Pacific Fisheries and Aquaculture to Climate Change*, Secretariat of the Pacific Community, Noumea (New Caledonia). [24]

Bell, J. et al. (2009), "Planning the use of fish for food security in the Pacific", *Marine Policy*, Vol. 33/1, pp. 64-76, https://doi.org/10.1016/J.MARPOL.2008.04.002. [48]

Bell, J., I. Senina and T. Adams (2021), "Pathways to sustaining tuna-dependent Pacific Island economies during climate change", *Nature Sustainability*, Vol. 4, pp. 900–910. [40]

Bola, A. (2017), "Potential for sustainable sea transport: A case study of the Southern Lomaiviti, Fiji islands", *Marine Policy*, Vol. 75, pp. 260-270, https://doi.org/10.1016/J.MARPOL.2016.02.002. [33]

Brander, L. et al. (2020), "Cook Islands marine ecosystem service valuation", report commissioned by the Cook Islands National Environmental Service, https://www.maraemoana.gov.ck/wp-content/uploads/2021/06/25.-Cook-Islands-MESV-Report-2021.pdf (accessed on 14 February 2022). [11]

Brida, J. and S. Zapata (2010), "Economic impacts of cruise tourism: The case of Costa Rica", *Anatolia*, Vol. 21/2, pp. 322-338, https://doi.org/10.1080/13032917.2010.9687106. [20]

CSIRO and SPREP (2021), *Current and future climate for Fiji: enhanced 'NextGen' projections Technical report*, https://publications.csiro.au/publications/publication/PIcsiro:EP2021-2149. [46]

Feresi, J. et al. (2000), *Climate Change Vulnerability and Adaptation Assessment for Fiji. International Global*, prepared for The World Bank Group, International Global Change Institute (IGCI), University of Waikato, in partnership with South Pacific Regional Environment Programme(SPREP) and Pacific Islands Climate Change Assistance Programme (PICCAP), Fiji. [44]

Fiji Bureau of Statistics (2022), *Fiji National Accounts*, (database), https://www.statsfiji.gov.fj/index.php/statistics/economic-statistics/national-accounts-gdp (accessed on 15 April 2022). [25]

Fiji Bureau of Statistics (2020), *Fiji's Direct Tourism Contribution*, https://www.statsfiji.gov.fj/images/documents/Economics_Statistics/Annual_Reports/Satellite-Accounts/Fijis_Direct_Tourism_Contribution_Release_2014-2019.pdf (accessed on 18 May 2022). [17]

Fiji Bureau of Statistics (2018), *Economic Surveys – Accommodation and Food Service Activities*, (database), https://www.statsfiji.gov.fj/statistics/economic-statistics/business-activity-building-construction.html (accessed on 20 March 2022). [21]

Fiji Bureau of Statistics (2016), *Fiji's earnings from tourism - December & Annual 2015*, https://www.statsfiji.gov.fj/latest-releases/tourism-and-migration/earnings-from-tourism/595-fiji-s-earnings-from-tourism-december-annual-2015.html (accessed on 18 May 2022). [22]

Garcés-Ordóñez, O. et al. (2020), "The impact of tourism on marine litter pollution on Santa Marta beaches, Colombian Caribbean", *Marine Pollution Bulletin*, Vol. 160, p. 111558, https://doi.org/10.1016/J.MARPOLBUL.2020.111558. [51]

Gillett, R., A. Lewis and I. Cartwright (2014), "Coastal fisheries in Fiji: Resources, issues and enhancing the role of the Fisheries Department", Gillet Preston Associates. [26]

Gillett, R. and M. Tauati (2018), "Fisheries of the Pacific Islands regional and national information", *FAO Fisheries and Aquaculture Technical Paper*, Vol. 625, pp. 1-400, https://www.fao.org/publications/card/en/c/7688c916-f1f2-5fe4-b306-2f7a0528e829/. [28]

GOAP (forthcoming), , Global Ocean Accounts Partnership. [15]

Gonzalez, R. et al. (2015), "Marine ecosystem service valuation", MACBIO (GIZ/IUCN/SPREP), Suva, Fiji, http://www.macbio.pacific.info (accessed on 14 February 2022). [14]

Graci, S. and L. Van Vliet (2020), "Examining stakeholder perceptions towards sustainable tourism in an island destination. The case of Savusavu, Fiji", *Tourism Planning and Development*, Vol. 17/1, pp. 62-81, https://doi.org/10.1080/21568316.2019.1657933/FORMAT/EPUB. [54]

Gravelle, G. and N. Mimura (2008), "Vulnerability assessment of sea-level rise in Viti Levu, Fiji Islands", *Sustainability Science*, Vol. 3, pp. 171-180, https://doi.org/10.1007/s11625-008-0052-2. [39]

Hampton, M. and J. Jeyacheya (2020), "Tourism-Dependent Small Islands, Inclusive Growth, and the Blue Economy", *One Earth*, Vol. 2/1, pp. 8-10, https://doi.org/10.1016/J.ONEEAR.2019.12.017. [16]

Hoegh-Guldberg, O. and T. Ridgway (2016), *Reviving Melanesia's Ocean Economy: The Case for Action*, WWF-Pacific. [12]

IEA (2022), *Transport sector CO2 emissions by mode in the Sustainable Development Scenario, 2000-2030*, http://www.iea.org/data-and-statistics/charts/transport-sector-co2-emissions-by-mode-in-the-sustainable-development-scenario-2000-2030 (accessed on 18 May 2022). [57]

IEA (2021), *International Shipping, Tracking Report November 2021*, webpage, https://www.iea.org/reports/international-shipping (accessed on 23 March 2022). [56]

IFC (2019), *Assessment of the Economic Impact of Cruise Tourism in Fiji*, International Finance Corporation, Washington, DC, http://www.mitt.gov.fj (accessed on 28 January 2022). [19]

IFC (2018), *From the Farm to the Tourist's Table: A Study of Fresh Produce Demand from Fiji's Hotels and Resorts*, International Finance Corporation, Washington, DC, https://www.ifc.org/. [18]

IFC (forthcoming), *Agri-logistics deep dive: Expanding the private sector role in delivering agri-logistics solutions in Fiji*. [32]

IMO (2020), *Fourth IMO GHG Study 2020*, International Maritime Organization, London, https://wwwcdn.imo.org/localresources/en/OurWork/Environment/Documents/Fourth%20IMO%20GHG%20Study%202020%20Executive-Summary.pdf. [55]

IOM (2020), *Migration in the Republic of Fiji: A Country Profile 2020*, International Organization for Migration, Geneva, http://www.iom.int. [1]

Jolliffe, J. (2016), *Economic dimensions of relocation as an adaptation strategy to climate change: A case study of the Narikoso Relocation Project, Fiji*, Pacific Community, Suva. [45]

Jolliffe, J., C. Jolly and B. Stevens (2021), "Blueprint for improved measurement of the international ocean economy: An exploration of satellite accounting for ocean economic activity", *OECD Science, Technology and Industry Working Papers*, No. 2021/04, OECD Publishing, Paris, https://doi.org/10.1787/aff5375b-en. [9]

Kitolelei, J., T. Torii and V. Bideshi (2009), "An overview of Fiji's fisheries", https://www.researchgate.net/publication/279861585_An_Overview_of_Fiji_Fisheries. [8]

Levett, R. and R. McNally (2003), *A Strategic Environmental Assessment of Fiji's Tourism Development Plan*, WWF, Gland, Switzerland. [53]

Mangubhai, S. et al. (2019), "Fiji: Coastal and marine ecosystems", *World Seas: An Environmental Evaluation Volume II: The Indian Ocean to the Pacific*, pp. 765-792, https://doi.org/10.1016/B978-0-08-100853-9.00044-0. [36]

marine ecology consulting (2019), "Intensity and scale of coral bleaching on Fiji's reefs", marine ecology consulting, Suva, https://www.marineecologyfiji.com/snapshot-of-the-2019-coral-bleaching-in-fiji/. [37]

Masson-Delmotte, V. et al. (2019), *Global warming of 1.5°C*, Intergovernmental Panel on Climate Change, Geneva, http://www.environmentalgraphiti.org (accessed on 28 January 2022). [38]

Merschroth, S. et al. (2020), "Lost material stock in buildings due to sea level rise from global warming: The case of Fiji Islands", *Sustainability*, Vol. 12/3, p. 834, https://doi.org/10.3390/SU12030834. [42]

Ministry of Economy (2018), *Fiji Low Emission Development Strategy 2018-2050*, Ministry of Economy, Republic of Fiji, Suva, https://unfccc.int/sites/default/files/resource/Fiji_Low%20Emission%20Development%20%20Strategy%202018%20-%202050.pdf. [58]

Ministry of Finance (2015), *Climate Public Expenditure and Institutional Review FIJI*, Ministry of Finance, Republic of Fiji, Suva, https://www.forumsec.org/wp-content/uploads/2018/10/Fiji-CPEIR-Report-comp.pdf (accessed on 7 March 2022). [43]

Ministry of Fisheries (2019), *The Strategic Plan for 2019-2029*, Ministry of Fisheries, Suva. [30]

Ministry of Fisheries (2018), *Fiji's Fisheries Sector Investment Guide*, Ministry of Fisheries, Suva. [23]

Munday, P. et al. (2008), "Climate change and the future for coral reef fishes", *Fish and Fisheries*, Vol. 9/3, pp. 261-285, https://doi.org/10.1111/J.1467-2979.2008.00281.X. [41]

Natuva, T. (2021), "Fiji`s Blue Economy: The importance of maritime security", *Policy Papers on Maritime Strategy and Defence Issues*, No. 23, Visiting Navy Fellows, https://www.navy.gov.au/sites/default/files/documents/VNF_Edition_One.pdf#page=127. [13]

OECD (2021), *Blueprint for improved measurement of the international ocean economy : An exploration of satellite accounting for ocean economic activity*, OECD Publishing, Paris, https://doi.org/10.1787/aff5375b-en (accessed on 25 April 2022). [10]

OECD (2021), "Managing tourism development for sustainable and inclusive recovery", *OECD Tourism Papers*, No. 2021/01, OECD Publishing, Paris, https://doi.org/10.1787/23071672. [49]

OECD (2020), *Sustainable Ocean for All: Harnessing the Benefits for Developing Countries*, The Development Dimension, OECD Publishing, Paris, https://doi.org/10.1787/bede6513-en. [29]

OECD/The World Bank (2016), *Climate and Disaster Resilience Financing in Small Island Developing States*, OECD Publishing, Paris, https://doi.org/10.1787/9789264266919-en. [34]

Parliament of the Republic of Fiji (2019), "Pacific Fishing Company LTD 2017 Annual Report", *Parlamentary Paper*, Vol. 33, http://www.parliament.gov.fj/wp-content/uploads/2019/05/Committee-Review-Report-PAFCO-2017-Annual-Report.pdf (accessed on 14 February 2022). [27]

Prince, J. et al. (2021), "Spawning potential surveys in Fiji: A new song of change for small-scale fisheries in the Pacific", *Conservation Science and Practice*, Vol. 3/2, p. e273, https://doi.org/10.1111/CSP2.273. [47]

Republic of Fiji (2021), *National Ocean Policy 2020-2030*, Republic of Fiji, https://library.sprep.org/content/republic-fiji-national-ocean-policy-2020-2030. [2]

Sachs, J. et al. (2021), *Sustainable Development Report 2021*, Cambridge, Padstow, https://doi.org/10.1017/9781108992411. [7]

Singh, A., S. Jamal and W. Ahmad (2021), "Impact assessment of lockdown amid COVID-19 pandemic on tourism industry of Kashmir Valley, India", *Research in Globalization*, Vol. 3, p. 100053, https://doi.org/10.1016/J.RESGLO.2021.100053. [52]

UNWTO (2012), *Challenges and Opportunities for Tourism Development in Small Island Developing States*, World Tourism Organization, Geneva, https://www.e-unwto.org/doi/book/10.18111/9789284414550. [50]

World Bank (2020), *GDP per capita (current US $) - Fiji*, (database), https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=FJ (accessed on 24 April 2022). [3]

World Bank (2017), *New report projects $4.5 billion cost to reduce Fiji's vulnerability to climate change*, 10 November, Press Release, World Bank, Washington, DC, https://www.worldbank.org/en/news/press-release/2017/11/10/new-report-projects-us45-billion-cost-to-reduce-fijis-vulnerability-to-climate-change. [35]

World Bank (2017), *Pacific Possible: Long-term Economic Opportunities and Challenges for Pacific Island Countries*, World Bank, Washington, DC, https://documents1.worldbank.org/curated/en/168951503668157320/pdf/ACS22308-PUBLIC-P154324-ADD-SERIES-PPFullReportFINALscreen.pdf (accessed on 14 April 2022). [59]

World Bank Group (2020), *Country Partnership Framework for the Republic of Fiji FY2021-FY2024*, World Bank Group, Washington, DC. [6]

Notes

[1] Ecosystem services analysed included subsistence food provision, commercial food harvesting, research and education, mineral and aggregate mining, tourism, coastal protection and carbon sequestration.

[2] The company declares that, out of 1 036 employees, 664 are women, including for production and back-office activities, www.parliament.gov.fj/wp-content/uploads/2019/05/Committee-Review-Report-PAFCO-2017-Annual-Report.pdf.

3 The ocean economy of Fiji during the COVID-19 crisis

The 2020 economic contraction due to the COVID-19 pandemic was the largest in Fiji's modern history. The loss of tourism revenue had negative spillover effects affecting Fiji's overall economy. Moreover, these large fiscal impacts from the pandemic exacerbate Fiji's pre-existing financing challenges. This chapter examines the socio-economic and environmental aspects of the pandemic on the ocean economy of Fiji, including job losses, the migration of Fijians back to their villages and heightened level of remittances. It also analyses international assistance to counter the pandemic, including regional partnerships and the Debt Service Suspension Initiative.

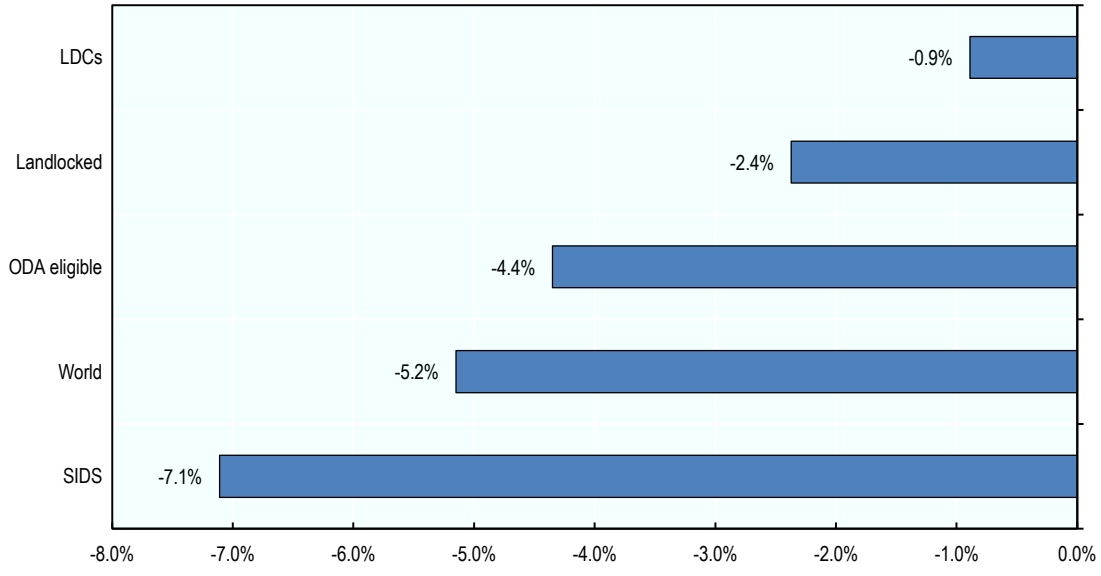
3.1. The impact of the COVID-19 crisis on Fiji's ocean economy

The 2020 economic contraction due to the COVID-19 pandemic was the largest in Fiji's modern history. In economic and fiscal terms, small island developing states (SIDS) were on average hit the hardest by the COVID-19 pandemic. They experienced contractions in gross domestic product (GDP) of 7.1% in 2020, compared to 4.4% in developing countries (Figure 3.1) (OECD, 2021[1]). In Fiji, real GDP fell by an estimated 15.7% in 2020 and was projected to contract by a further 5% in 2021 (Figure 3.2) (ADB, 2021[2]). The fiscal deficit reached 13.7% of GDP in 2020/21 and is projected to remain at about the same level for 2021/22. This will be accompanied by a rise in public debt to nearly 90% of GDP by the end of the fiscal year (IMF, 2021[3]). Year-on-year consumer price inflation reached -2.8% at end-2020.

Fiji's GDP fell mainly due to the closure of tourism-related activities. The travel restrictions and closing of borders due to COVID-19 variants almost completely shut down Fiji's tourism sector. Across SIDS, the contribution of tourism to GDP was cut by half between 2019 and 2020 (Figure 3.3). The drop was even more pronounced across Pacific SIDS, going from 18% to 7% after the onset of COVID-19. Following three years of consecutive growth in the sector, travel restrictions led to an 80% reduction in the number of visitor arrivals in 2020 relative to 2019. Fiji's tourism earnings declined by 84.8% (to USD 314.9 million) and were expected to fall by 95.5% in 2021 (Ministry of Economy Fiji, 2021[4]). In parallel, 20% of tourism businesses declared they were unable to service their debt. Losses for micro, small and medium enterprises (MSMEs) operating with tourism activities were seven times larger relative to non-tourism MSMEs. Estimates reveal that tourism MSMEs have each lost FJD 21 000 (or USD 9 706) compared with non-tourism MSMEs that lost FJD 3 000 each (IFC, 2020[5]).[1]

Figure 3.1. SIDS as a group recorded the largest GDP contraction globally in 2020

GDP contraction in 2020, by country group

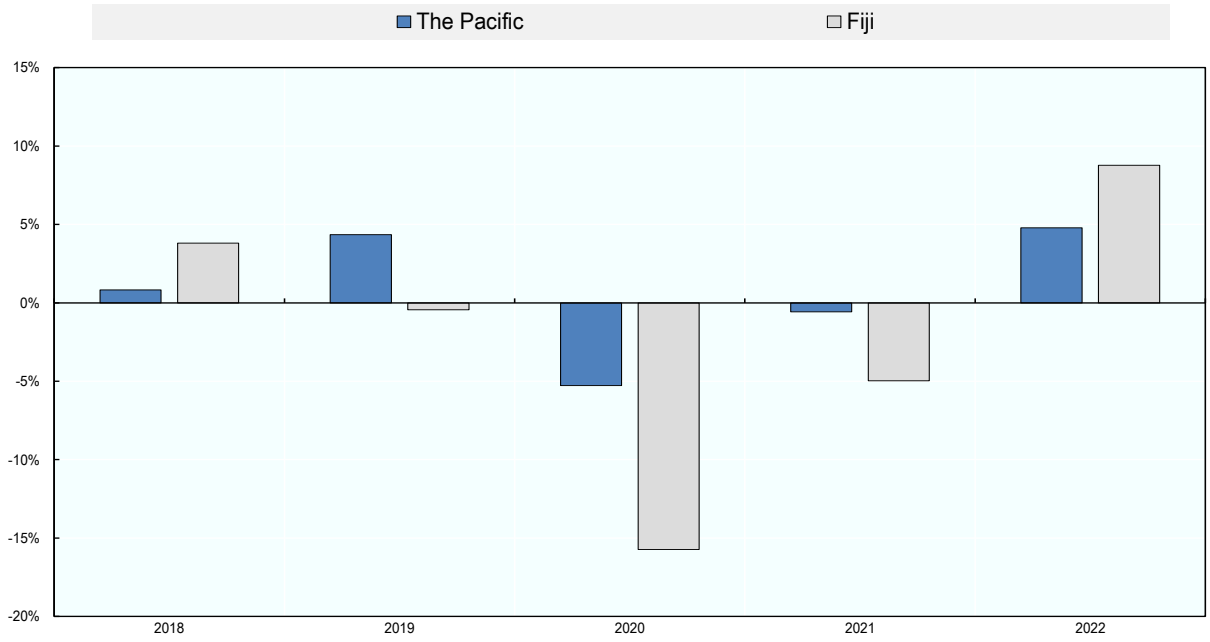


Note: The percentage is calculated based on an arithmetic average of individual countries growth projections. The SIDS category only includes ODA eligible SIDS.
Source: Authors' representation based on IMF (2021[6]), *World Economic Outlook* (database), October 2021, www.imf.org/en/Publications/WEO/weo-database/2021/October/download-entire-database.

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Figure 3.2. GDP year-on-year variation in the Pacific and in Fiji

Year-on-year GDP variation, %

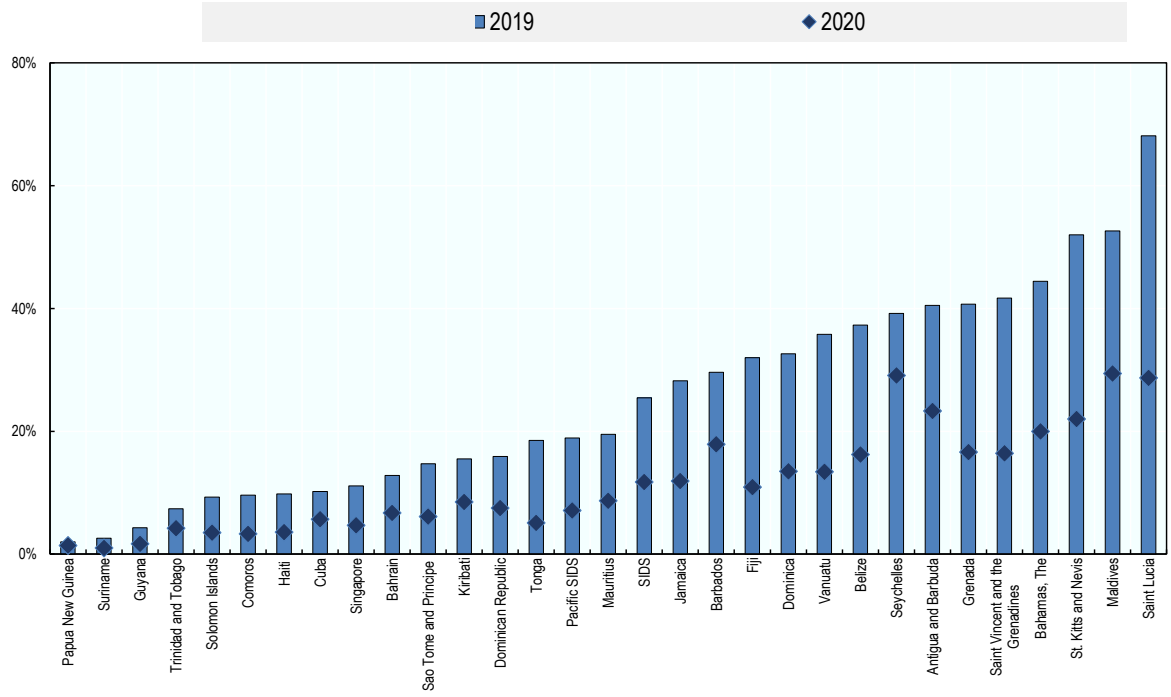


Source: Authors' representation based on ADB (2021[7]), Asian Development Outlook 2021 – Update: Transforming Agriculture in Asia, https://www.adb.org/publications/asian-development-outlook-2021-update.

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Figure 3.3. Pacific SIDS saw the largest drop in tourism's contribution to GDP following COVID-19 outbreak

Contribution of tourism sector to GDP, 2019 vs. 2020



Source: Authors' representation based on UNOHRLLS (forthcoming[8]).

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The halt in visitors' arrivals had negative spillover effects on other ocean economy sectors, affecting Fiji's overall economy. The prominence of tourism in Fiji's economy means that shocks to the sector easily translate into impacts across the whole economy. The tourism sector also indirectly affected employment in aquaculture, small-scale and artisanal fisheries, and transportation. Hotels and resorts represent an important share of local demand for fish production, which suffered sudden drops in quantities purchased and prices (FAO, 2020[9]). The travel restrictions linked to the COVID-19 pandemic forced Fiji Airways to reduce its workforce and require remaining staff to accept salary reductions.

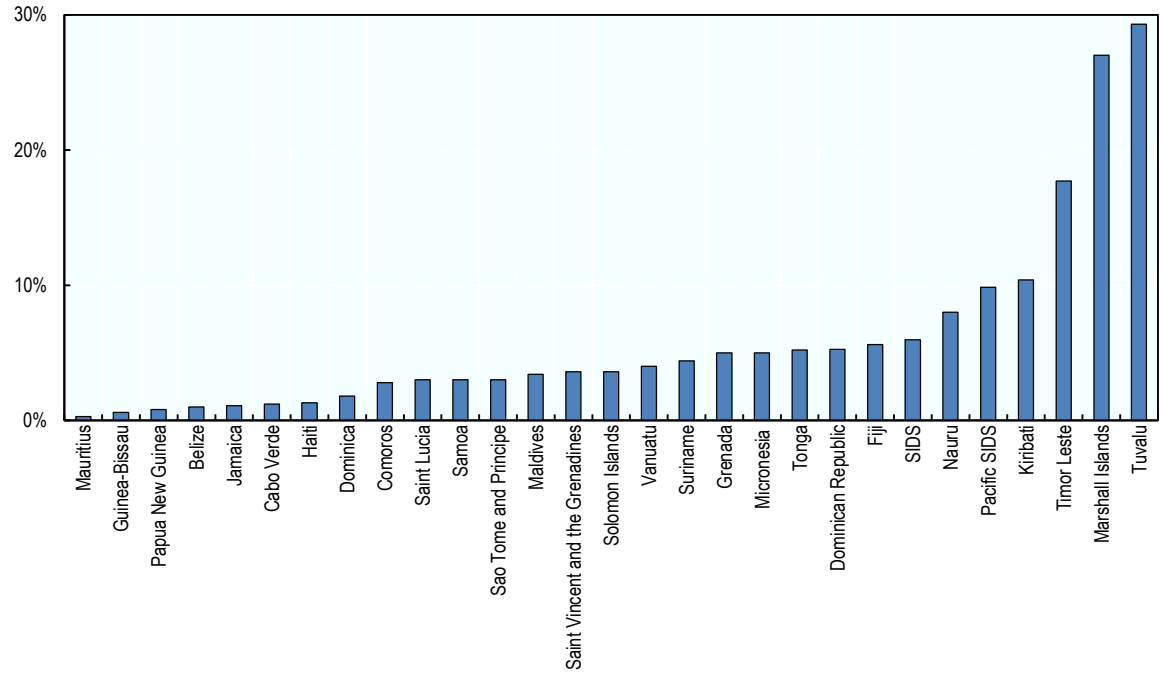
Large fiscal impacts from the COVID-19 crisis exacerbate Fiji's pre-existing financing challenges. Even before the outbreak of COVID-19, Fiji faced critical financing challenges, owing to the small and volatile nature of private investments. As in many other SIDS, private investments in Fiji are constrained by the isolated nature of operations and high perceived investment risks. Meanwhile, public investments are limited due to volatile domestic revenues and limited fiscal space (OECD, 2018[10]). During the COVID-19 crisis, the public spending needs of Fiji have mounted, both to respond to the health emergency and to counter the economic effects of the pandemic. Meanwhile, revenues from key sectors, such as tourism, have collapsed. This combined effect urged the government to search for alternative sources of foreign exchange revenues and of financing necessary to service external debt, pay for imports and implement much-needed recovery measures.

Remittances displayed remarkable resilience, unlike in other SIDS. Remittances are the largest source of external financing for many SIDS (OECD, 2018[11]). Thus, it has been of high concern that during

the COVID-19 crisis many SIDS recorded the largest falls in remittances in recent history (OECD, 2021[1]). In Fiji, however, the total inflow of remittances increased. This totalled USD 389.1 million in the first half of 2021 compared to an average of FJD 433.2 million (or USD 200.13 million) between 2010 and 2020 (Vula, 2021[12]). Given that a sizable amount of remittances also comes through mobile money platforms and informal channels, the actual inflows could be much higher. The COVID-19 pandemic has led to a rise in digitally-enabled remittances. The amount of money sent to Fiji via the M-PAiSA Mobile Money app quadrupled between February and August 2020.

Fiji implemented recovery packages equivalent to 5.6% of its GDP to respond to the COVID-19 crisis. This compares to an average of 6.0% of GDP expended by SIDS on fiscal stimulus packages, and to an average of 9.0% of GDP globally. On average, the Pacific SIDS allocated significantly higher budget shares to the COVID-19 response (9.0% of GDP), compared to SIDS in the Caribbean (3.2% of GDP) and in the Atlantic, Indian Ocean and South China Sea (4.7% of GDP, 3.0%) (UNOHRLLS, forthcoming[8])) (Figure 3.4). Most measures supported the health sector, social safety nets and income support. In some cases, support was also provided to key sectors, including tourism and agriculture, with some focus on small businesses and MSMEs. However, the government's lack of fiscal space constrained the provision of direct monetary support to individuals and companies. For those in the tourism sector who lost their jobs, the Fijian government allowed access to an initial FDJ 1 000 from their National Provident Fund (FNPF) accounts. Other workers affected by the distancing and lockdown measures, and who were placed on leave without pay or had their hours cut, were able to access an initial FJD 500 from their FNPF accounts (KPMG, 2020[13]).

Figure 3.4. COVID-19 economic recovery packages across small island developing states (SIDS) (as a percentage of GDP)



Note: The estimate includes fiscal support of above-the-line measures of additional spending and forgone revenue, as well as below the line measures and contingent liabilities from guarantees and quasi-fiscal operations.
Source: Authors' representation based on IMF (2021[6]).

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During the COVID-19 pandemic, Fiji was hit by three tropical cyclones that added to the COVID-19 induced downturn and resulted in further challenges. Amid the COVID-19 pandemic, three tropical cyclones hit the country, namely "Harold" in April 2020, "Yasa" in December 2020 and "Ana" in January 2021. Both Tropical Cyclone (TC) Harold and TC Yasa were of category 5, and TC Yasa was also one of the strongest cyclones ever recorded in the Pacific. Destructive winds and flooding caused significant property damage, destroying villages, homes and government buildings. The cyclone also severely affected agriculture and infrastructure, including water supply, waste and sanitation, electricity and communications. Following TC Harold, the Ministry of Health identified outbreaks of typhoid, leptospirosis and dengue fever as a major concern (ADB, 2021[14]). In monetary terms, the impact of TC Harold is estimated at FJD 29 million (about USD 13 million) and of TC Yasa at FJD 25 (USD 12 million) (OCHA, 2020[15]; IFC, 2021[16]). These cyclones disrupted food supply and amplified the negative effects of the COVID-19 pandemic. More recently, in 2022, Tropical Storm Cody was responsible for massive devastation in Tonga and its effects were felt in Fiji where flooding resulted in the evacuation of over 100 families.

3.2. Social and environmental aspects of the COVID-19 crisis on the ocean economy of Fiji

Job losses and reduced hours have affected at least one-third of Fiji's labour force.[2] Most job losses occurred in the tourism sector with an estimated 100 000 workers losing their jobs due to COVID-19 (Doan et al., 2020[17]). Moreover, the Fiji Hotel and Tourism Association announced that 93% of its members had terminated business at least until the reopening of borders. To avoid running out of business, many firms had to renegotiate rent, defer loan repayments, and reduce wages and salaries. Hours were reduced temporarily by 59% of the businesses during the pandemic. This meant that six of every ten businesses reduced hours for their staff (Fiji Bureau of Statistics, 2021[18]).

Many Fijians moved back from urban areas to their villages, relying on the ocean for subsistence. With increased unemployment and reduced wages, many Fijians had to turn to subsistence activities to satisfy basic needs. Urban communities frequently have smaller backyards and insufficient space for farming, which makes them more reliant on markets as a source of food. Many people previously employed in the tourism sector returned to their villages and survived on fishing and farming activities for self-consumption. The Ministry of Fisheries provided free licences for inshore fisheries, which come with requirements on fishing practices. They also provided training so people would stop unsustainable fishing practices, such as the use of dynamite for fishing.

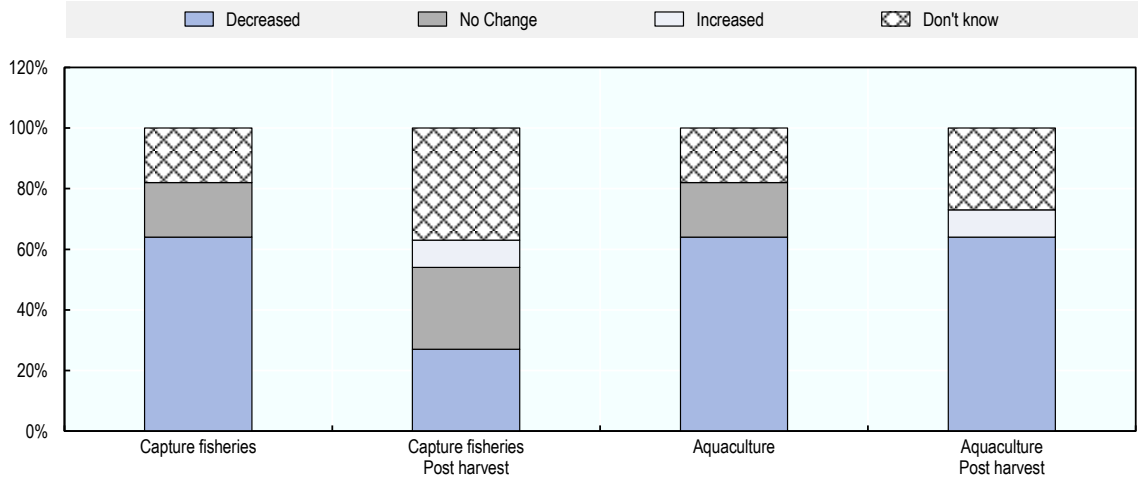
Tuna exports suffered from reduced demand and increased costs. Fiji's offshore fisheries sector, largely driven by tuna exports, has been heavily affected by the COVID-19 crisis. High freight costs with lesser airfreight options out of Fiji, for example, increased operational costs. Lockdowns in the main export markets also led to loss of market demand. As fresh tuna is transported in commercial flights, almost all the fleet was grounded. This resulted in widespread unemployment among fishing crew and processing factory staff. This occurred despite the introduction of government measures, such as the extension of offshore fishing licences up to 20 years. In fact, regional fishery advisory bodies expressed concerns about the impact of COVID-19 on employment and working conditions. More than half reported an expected decrease in employment of capture fisheries and aquaculture in 2020 (Figure 3.5). For one domestic fishing operator that also owns a processing factory, all six fishing boats have been tied up with their crew no longer employed. In addition, more than 60% of its factory staff were left unemployed due to the decrease in fresh tuna exports. The company has also sold at least one fishing vessel, and is looking to sell others to stay afloat. It has not resumed fishing operations. To date, there has been little recovery since the onset of the crisis in early 2020. However, due to the opening of international borders combined with increasing airfreight options, it is expected the fresh tuna fishery in Fiji will continue to recover in 2022 as it becomes more profitable to service international markets.

Frozen tuna processing was less severely affected. Pacific Fishing Company (PAFCO) saw greater raw material coming into its processing factory. This led to more production shifts and higher employment of staff for processing lines. The supply chain for frozen tuna catch relies on sea freight. While delays have affected the supply chain, it has not seen the high increases in freight costs experienced by air freight. Fresh tuna prices in the United States, an important market for Fiji's tuna, are recovering from the shocks of the COVID-19 crisis. The price of albacore tuna has recovered to pre-crisis levels.

Aquaculture production decreased owing to the decline in demand and dependence of imported feed. Shortage of inputs such as feed, seed and equipment had a negative impact on aquaculture production, disrupting production cycles (SPC FAME, 2021[19]). Reduced demand for fish owing to the tourism shutdown resulted in reduced staff, which has aggravated the economic effects of COVID-19 on the industry. Fijian aquaculture was also affected by reduced prices for pearls on Asian market, which resulted in further reduction in aquaculture production (FAO, 2020[9]).

Figure 3.5. Impacts on employment conditions

Distribution of respondents from 19 regional fisheries advisory bodies



Note: The 19 regional bodies that responded to the survey are: Central Asian and Caucasus Regional Fisheries and Aquaculture Commission (CACFish); Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR); Commission for the Conservation of Southern Bluefin Tuna (CCSBT); Inter-American Tropical Tuna Commission (IATTC); International Commission for the Conservation of Atlantic Tunas (ICCAT); Indian Ocean Tuna Commission (IOTC); International Whaling Commission (IWC); Lake Victoria Fisheries Organization (LVFO); Northwest Atlantic Fisheries Organization (NAFO); North Atlantic Salmon Conservation Organization (NASCO); North-East Atlantic Fisheries Commission (NEAFC); North Pacific Anadromous Fish Commission (NPAFC); North Pacific Fisheries Commission (NPFC); Pacific Salmon Commission (PSC); Regional Commission for Fisheries (RECOFI); South East Atlantic Fisheries Organization (SEAFO); South Indian Ocean Fisheries Agreement (SIOFA); South Pacific Regional Fisheries Management Organization (SPRFMO); and Western and Central Pacific Fisheries Commission (WCPFC).
Source: Authors' representation based on data from UNCTAD and FAO (2020[9]).

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High levels of informality in key sectors pose challenges for government assistance. Informal workers are commonly excluded from national social protection coverage and other services available to those employed in the formal labour sector. In addition, informal workers usually have limited access to information and to finance. They even have less access to national documents such as birth certificates, citizenship cards and voter registration, which makes them more vulnerable to economic shocks (ILO, 2021[20]). In an attempt to support these workers, Fiji's government announced a one-off payment of FJD

150 to informal sector workers holding a street trader or hawker licence in lockdown areas (KPMG, 2020[13]). On top of that, Fijians in the informal sector who tested positive for the virus were eligible for a one-off sum of FJD 1 000 (KPMG, 2020[13]). Work seasonality, employment of foreign crews and relatively high levels of informality and self-employment have also made general stimulus packages less effective for fisheries and aquaculture (FAO, 2020[9]). In Fiji, as well as in Tonga and Vanuatu, seasonal workers do not qualify for government financial support. This means they lost not only the remittance revenue but also had limited ways to get by (IOM, 2020[21]).

Targeted support for the local fishing industry was announced in 2021. For the next two years, the government will provide free inshore fishing licences, benefiting registered fishers and boat owners. Annual registration fees, annual boat survey fees and boat licences will now be valid for five years. Owing to prolonged impacts of the COVID-19 crisis, further support to workers in the formal and informal sector was announced in 2021. Workers with insufficient liquidity and those affected in the informal sector are eligible for FJD 120 per month for six months. This assistance is only available for those Fijians who received their first dose of vaccination before the first week of August. The "Stronger Together" and "Jobs for Nature" schemes provide additional government support to the informal sector for the latter. Fiji's government is providing wage subsidies for a three-month period to help the unemployed undertake reforestation-related jobs such as planting of mangroves and sea grass (Ministry of Economy Fiji, 2021[4]).

Box 3.1. Empowering Fijian women in fisheries for a sustainable recovery

A worsening of women's conditions during the COVID-19 crisis

In Fiji, the condition of women has worsened during the COVID-19 pandemic. Growing unemployment and economic insecurity added to pre-existing inequalities linked to lower wages and more precarious work conditions for women. In addition, during the COVID-19 crisis, women and girls have taken on additional labour, caring for repatriated relatives and children out of school. Women's unpaid household labour has increased as people have moved from urban to rural areas. Women are expected to care for migrating and returning extended family and to meet traditional family and community obligations. Lastly, women and girls have experienced increased risks of men's physical and sexual violence during COVID-19, while their access to sexual and reproductive health was disrupted.

The positive example of the Women in Fisheries Network

Women in Fisheries Network Fiji was established in 1993 to promote women's meaningful participation in fisheries. The Network brings together scientists, researchers, gender and development scholars and practitioners from business, government and non-governmental agencies. It operated until 2004 when it became inactive due to lack of resources and personnel to co-ordinate activities effectively. In 2012, the Network became operational again with grant support from the Wildlife Conservation Society and the Australian Department of Foreign Affairs and Trade.

The focus is on helping build an environmentally sustainable, socially appropriate and economically viable fisheries sector in Fiji that recognises the role of women. The Network provides workshops and training targeted to women but open to all genders. These include financial literacy and business training, and workshops on policies and legislation pertaining to protecting and empowering women in Fiji, among others.

Women in Fisheries Network support during COVID-19

Women in Fisheries Network – Fiji (WiFN-Fiji) is implementing COVID-19 Financial Assistance to Women Fishers. The target provinces to benefit from this financial assistance are women fishers from Tailevu,

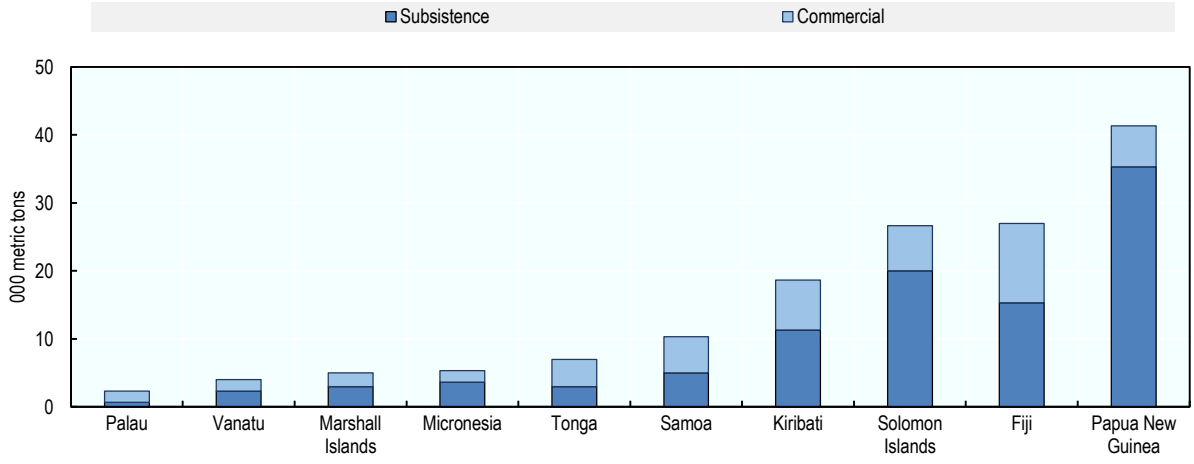
Rewa, Ra and Ba. These were affected by COVID-19 due to the Suva and Lautoka lockdown in 2020. The project aims to provide financial assistance to both women fishers who have participated in Network activities and those who have not.

A total of 950 women fishers will benefit from this financial assistance with FJD 140 per person. The first group will include those that have attended a training/workshop hosted by WiFN-Fiji; are current Network members; and who were interviewed in the COVID-19 market survey from Suva, Nausori and Laqere market in May 2020. This financial support is meant to assist them with buying essential food items and other household necessities.

Source: Authors' representation based on (Women in Fisheries Network, 2014[22]).

An increase in subsistence fisheries risks increasing pressure on coastal resources. Subsistence fishing already accounted for more than half of Fiji's annual coastal harvest prior to COVID-19 (Figure 3.6), and with more people actively engaging in subsistence fishing, more pressure is added to coastal resources. However, as commercial fishing decreased at the same time that subsistence fishing increased, the precise effect on fish stocks remains unknown. In fact, it could take over a year for the impacts on stocks to reveal. Sustainable management of coastal fisheries is essential to ensure future food security and improve nutrition and livelihoods (ADB, 2021[23]).

Figure 3.6. Annual coastal fishing harvest, 2014



Source: Authors' representation based on ADB (2021[24]).

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While illegal, unreported and unregulated (IUU) fishing in the Pacific is in decline, the regional co-operation making this possible has been negatively affected by COVID-19 restrictions. A recent study showed positive signs that IUU fishing is decreasing with stronger co-operation among Pacific Island countries. It reported that most concerns faced by the licensed fleet were being addressed (MRAG Asia Pacific, 2016[25]). COVID-19 has limited technical support and training provided by regional fisheries organisations like Pacific Islands Forum Fisheries Agency (FFA), The Pacific Community (SPC), and the Western and Central Pacific Fisheries Commission (WCPFC) to fisheries administrations in the region due to the closure of international borders. This has forced support and training, like the Pacific Fisheries Leadership Programme, to be delivered virtually. This training is usually held in Fiji and often has the greatest number

of participants from Fiji's fisheries sector. While these types of programmes can continue to be run virtually, there have been challenges to build stronger relationships in person, a hallmark of Pacific fisheries for decades and an important perceived feature for the future of the fisheries sector.

3.3. International assistance to counter the COVID-19 crisis

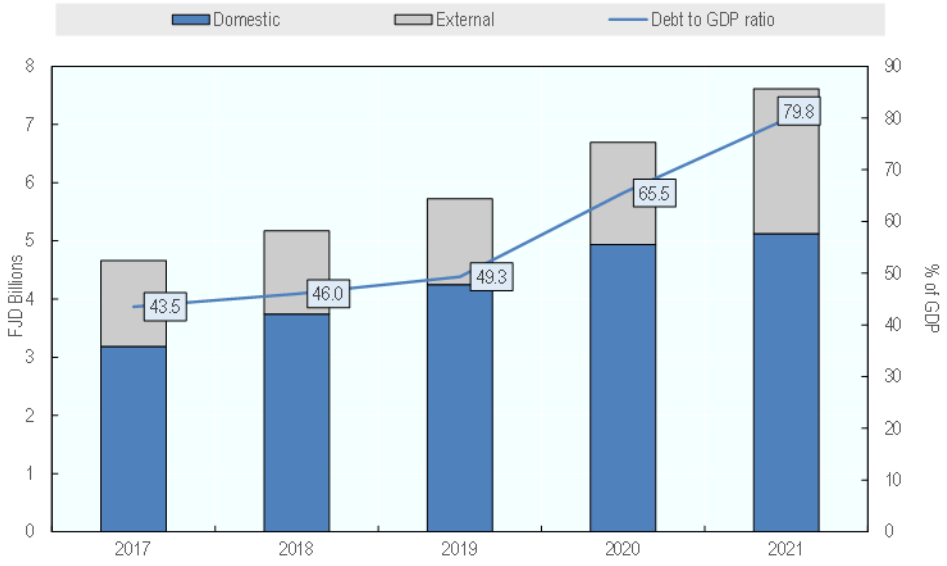
The cost of the pandemic continues to exceed the budgetary capacity of many SIDS, including Fiji. Fiji has experienced record revenue losses resulting from the COVID-19 pandemic. Increased health and social spending accompanied by tax and tariff cuts to mitigate the economic effects of the COVID-19 crisis on companies and businesses have led to a sharp increase of central government debt. Budget support grants from key development partners boosted non-tax revenues and helped reduce the projected debt in 2020/21 (Table 3.1). Fiji received FJD 250 million (or USD 115.5 million) in cash budget support grants from key development partners, such as Australia, New Zealand and the European Union, among others (Ministry of Economy Fiji, 2021[4]). Yet, the debt-to-GDP ratio jumped from 49% in 2019 to 80% in 2021 (Figure 3.7). The variants of the COVID-19 virus continue to spread and a return to normal remains uncertain. Protracted exceptional public spending combined with the collapse of revenues from key sectors risks depressing public investment and constraining recovery responses. Therefore, access to support from the international development community and alternative sources of foreign exchange revenues and of financing become vital to service external debt, pay for imports and continue to implement much-needed recovery measures.

Table 3.1. Fiji's fiscal framework 2021/22

	2019/20 (Actual)	2020/21 (Budget)	2020/21 (Revised)	2021/22 (Budget)
Revenue	2 716.70	1 673.60	2 111.20	2 085.10
% of GDP	25.3	16.9	22	21.1
Tax revenue	2 194.00	1 465.70	1 410.90	1 597.60
Non-tax revenue	522.7	207.9	700.3	487.5
Expenditure	3 353.70	3 674.60	3 216.70	3 690.50
% of GDP	31.2	37.1	33.5	37.3
Net Deficit	-637	-2 001.00	-1 105.50	-1 605.40
% of GDP	-5.9	-20.2	-11.5	-16.2
Debt	6 686.00	8 256.40	7 606.00	9 061.40
% of GDP	62.3	83.4	79.2	91.6
GDP at market prices	10 739.60	9 905.30	9 598.10	9 889.20

Source: Ministry of Economy (2021[4]).

Figure 3.7. Evolution of Fiji's debt pre- and post-COVID-19 outbreak



Source: Government of Fiji (2021[26]), 2020/2021 Annual Debt Report, https://www.economy.gov.fj/images/Resources/DebtReport/2020-2021_Annual_Debt_Report.pdf.

StatLink https://stat.link/xtnz3k

Regional partnerships have been critical in helping Fiji overcome the adverse effects of the pandemic. Under the leadership of the Pacific Island Forum, which includes Pacific SIDS as well as Australia and New Zealand, the Pacific Humanitarian Pathway on COVID-19 (PHP-C) was established as a regional response mechanism. It aims to improve health infrastructure and provide protective medical equipment to a range of Pacific SIDS, including Fiji, Papua New Guinea, New Caledonia and French Polynesia. In June 2020, Fiji, French Polynesia and New Caledonia each received 50 000 face masks, 10 000 medical gloves, 2 000 protective suits, 30 forehead thermometers and 3 ventilators under the co-ordination of the PHP-C (Pacific Islands Forum, 2020[27]).

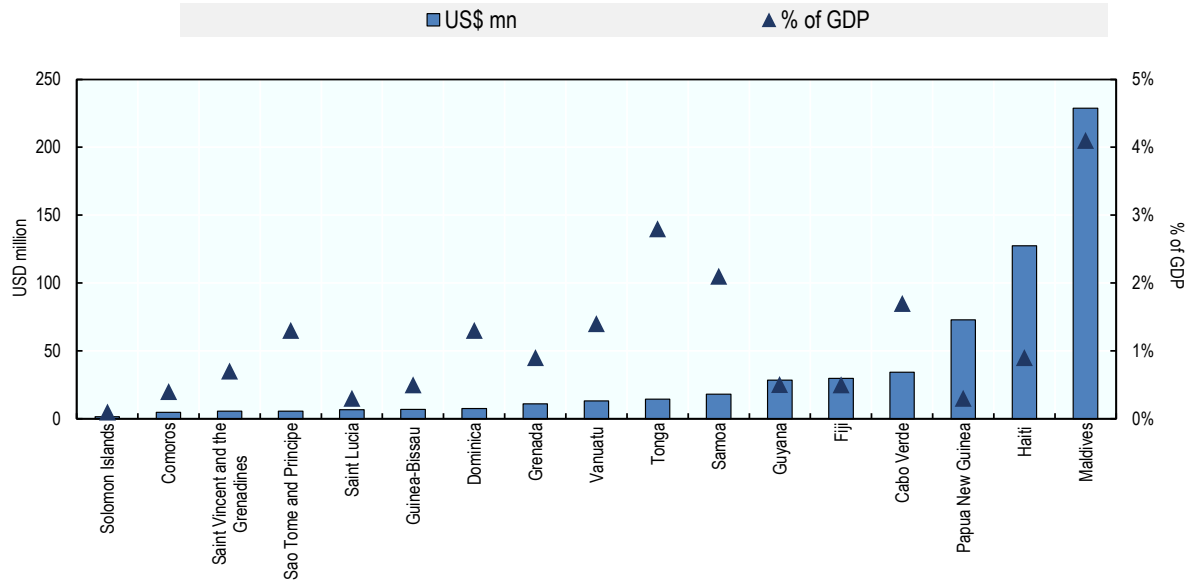
The Debt Service Suspension Initiative (DSSI) provided critical fiscal space to Fiji, but debt challenges remain. The G20-Paris Club DSSI for poorest countries (G20, 2020[28]) was established in 2020 to provide a temporary suspension in interest payments on debt-service to 73 eligible developing countries. Its main objective is to create fiscal space to channel funds into COVID-19 responses in the form of social, health and economic programmes. Initially, the suspension period was set to end on 31 December 2020 with the possibility of extension throughout 2021. Due to prolonged impacts of the pandemic, Fiji has benefitted from DSSI extended assistance until December 2021 by which point it had saved USD 29.6 million in total debt service payments to creditors (

Figure 3.8). Multilateral creditors include the World Bank, Asian Development Bank (ADB), Asian Infrastructure Investment Bank, European Development Bank and the International Fund for Agricultural Development. Bilaterally, the People's Republic of China (hereafter "China") and Japan have also waived Fiji's debt repayments temporarily.

Despite the suspension of debt repayment by the DSSI, Fiji's external debt has increased with the pandemic. The government is struggling to maintain an external to domestic debt ratio of 30:70 (+/-5) (Government of Fiji, 2021[26]). The pressures on external debt show that some SIDS may need a more comprehensive approach to debt (OECD, 2021[1]). This could either take the form of debt relief initiatives or a Sovereign Debt Resolution Mechanism, a framework designed to provide a long-term solution to

collective action and creditor co-ordination problems. Both the International Monetary Fund and the United Nations Conference on Trade and Development produced proposals for such mechanisms. However, they have encountered opposition and were never implemented (Lastra and Bodellini, 2018[29]).

Figure 3.8. Benefits from accessing the Debt Service Suspension Initiative



Source: Authors' representation based on World Bank (2022[30]), Debt Service Suspension Initiative, https://www.worldbank.org/en/topic/debt/brief/covid-19-debt-service-suspension-initiative.

StatLink https://stat.link/4q3boy

Multilateral partners have been key in assisting Fiji's recovery. Worldwide, COVID-19 related restrictions have crushed the international aviation industry. As with most airlines around the world, Fiji Airways faced liquidity problems. Since March 2020, the company has been facing unprecedented stress with flights barely operating. To help the company through the international travel downturn and to support its return to profitable operation, the ADB approved a USD 65 million COVID-19 Liquidity Support Facility for Fiji's Air Pacific Limited, which operates as Fiji. The financing comprises a USD 40 million loan from the ADB and a further USD 25 million loan from the Leading Asia's Private Infrastructure Fund, which will be administered by the ADB (ADB, 2020[31]).

Fiji's government is receiving assistance from the World Bank's concessional arm to help mitigate the impact of the COVID-19 crisis on the income of the unemployed and the underemployed. The World Bank's concessional arm, the International Development Association (IDA), provided USD 50 million (FJD 102.7 million) to the Fiji Social Protection COVID-19 Response and System Development Project. The project supports the unemployed and vulnerable by providing retroactive financing of cash payments to the unemployed who lost jobs or livelihood in formal and informal sectors due to the COVID-19 pandemic (World Bank, 2022[32]). The World Bank is also supporting Fiji's recovery from crisis and natural disasters. Fiji has signed a USD 145 million (FJD 299 million) operation with the World Bank to promote private sector-led economic recovery. The operation also aims at enhancing social resilience to climate disasters and to strengthen debt and public financial management. This also includes USD 110 million from the IDA Crisis Response Window. In addition, it includes a regular IDA credit of USD 10 million under the Catastrophe-Deferred Drawdown Option. This is available for immediate pay-out in the event of a significant climate-related or public health disaster, an earthquake or a tsunami. The operation also

provides a USD 25 million loan from the International Bank for Reconstruction and Development (World Bank, 2021[33]).

Bilateral assistance was also decisive to help Fiji protect the most vulnerable. In December 2021, New Zealand's government announced USD 40 million (FJD 58 million) in budgetary support to help the Fijian government address the socio-economic impacts of the COVID-19 crisis (New Zealand Foreign Affairs & Trade, 2021[34]). Further support was given to vaccination in Fiji to which New Zealand has funded 100 000 doses of the AstraZeneca vaccine and Australia has committed AUS 16.9 million over three years (2020-23) for COVID-19 vaccine access. The contribution includes delivery support and vaccine procurement, drawing on Australia's Regional COVID-19 Vaccine Access and Health Security Initiative. The vaccines started to arrive in Fiji on 4 August 2021; as of April 2022, 70% of Fijians were fully vaccinated (Ritchie et al., n.d.[35]). Australia and the United States are also key contributors to building resilience in Fiji. The "Fiji-Australia Vuvale Partnership", established in September 2019, is based on three main pillars: health security, stability and economic recovery (Australian Government Department of Foreign Affairs, n.d.[36]). Through this partnership, Australia aims to support Fiji's COVID-19 response plan by increased public sector efficiency. To that end, it will help Fiji seek profitable diversified investment opportunities, while working towards fiscal sustainability. In addition, Fiji has received Australia's largest transfer in the Pacific directed to Fiji's social welfare schemes as part of Fiji's response to tropical cyclone Harold. In parallel, the United States has provided USD 1.9 million to help Pacific SIDS manage the effects of the COVID-19 pandemic. The assistance is directed to UNICEF Pacific, which is headquartered in Fiji. It aims to provide both emergency supplies to Fiji, as well as vaccine technical assistance to countries throughout the Pacific (USAID, 2021[37]).

Beyond the members of the OECD Development Assistance Committee (DAC), or so-called traditional donors, China and the United Arab Emirates (UAE) provided support to Fiji's COVID-19 response. Following the outbreak of the pandemic, China announced a nearly USD 4.6 million cash donation and shipments of medical aid to Fiji and other Pacific SIDS. China has also provided additional medical supplies to Papua New Guinea, Vanuatu, Fiji and the Federated States of Micronesia. The UAE has also assisted Fiji with medical supplies such as personal protective equipment and testing kits to help medical professionals.

References

ADB (2021), *Asian Development Outlook 2021 – Update: Transforming Agriculture in Asia*, Asian Development Bank, Mandaluyong, The Phillipines, https://www.adb.org/publications/asian-development-outlook-2021-update (accessed on 15 April 2022). [7]

ADB (2021), *Fiji: Country Classification*, Asian Development Bank, Mandaluyong, The Philippines. [2]

ADB (2021), "Fiji: Tropical Cyclone Harold Emergency Response Project", webpage, https://www.adb.org/projects/54229-001/main (accessed on 24 February 2022). [14]

ADB (2021), *Pacific Economic Monitor*, https://www.adb.org/sites/default/files/publication/757271/pem-december-2021.pdf. [24]

ADB (2020), *Fiji Airways COVID-19 Liquidity Support Facility: Report and Recommendation of the President December 2020*, Asian Development Bank, Mandaluyong, The Philippines, http://www.adb.org/projects/documents/fij-54311-001-rrp. [31]

ADB, A. (2021), "Pacific Economic Monitor – December 2021:Reopening and Rebuilding for a resilient recovery", https://www.adb.org/publications/pacific-economic-monitor-december-2021. [23]

Australian Government Department of Foreign Affairs (n.d.), *Fiji-Australia Vuvale Partnership*, webpage, https://www.dfat.gov.au/geo/fiji/fiji-australia-vuvale-partnership (accessed on 26 April 2022). [36]

Doan, D. et al. (2020), *Pacific Labor Mobility, Migration and Remittances in Times of COVID-19: Interim Report*, World Bank Group, Washington, DC. [17]

FAO (2020), "The impact of COVID-19 on fisheries and aquaculture – A global assessment from the perspective of regional fishery bodies", *Initial Assessment*, No. May, Food and Agriculture Organization of the United Nations, Rome, https://doi.org/10.4060/ca9279en. [9]

Fiji Bureau of Statistics (2021), *COVID-19 Business Impact in Fiji*, Fiji Bureau of Statistics, Suva. [18]

G20 (2020), "Communiqué G20 Finance Ministers and Central Bank Governors Meeting 15 April 2020", G20, https://g20.org/en/media/Documents/G20_FMCBG_Communiqu%C3%A9_EN%20(2).pdf. [28]

Government of Fiji (2021), *2020/2021 Annual Debt Report*, Government of Fiji, Suva, https://www.economy.gov.fj/images/Resources/DebtReport/2020-2021_Annual_Debt_Report.pdf (accessed on 8 February 2022). [26]

IFC (2021), *Fiji TC YASA Business Survey*, webpage, http://www.ifc.org (accessed on 11 April 2022). [16]

IFC (2020), *Fiji Covid-19 Tourism Survey – Tourism Focus*, International Finance Corporation, Washington, DC, https://www.ifc.org/wps/wcm/connect/4fc358f9-5b07-4580-a28c-8d24bfaf9c63/Fiji+COVID-19+Business+Survey+Results+-+Tourism+Focus+Final.pdf?MOD=AJPERES&CVID=ndnpJrE (accessed on 1 February 2022). [5]

ILO (2021), "We have the power to change lives", *COVID-19 and the World of Work*, 6 June, International Labour Organization, Geneva, https://www.ilo.org/suva/public-information/WCMS_799622/lang--en/index.htm. [20]

IMF (2021), "Republic of Fiji", *Country Report*, No. 21/257, International Monetary Fund, Washington, DC. [3]

IMF (2021), *World Economic Outlook Database*, October (database), https://www.imf.org/en/Publications/WEO/weo-database/2021/October/download-entire-database (accessed on 22 March 2022). [6]

IOM (2020), *Rapid Assessment of the Socioeconomic Impacts of COVID-19 on Labour Mobility in the Pacific Region*, International Organization for Migration, Geneva, https://publications.iom.int/books/rapid-assessment-socioeconomic-impacts-covid-19-labour-mobility-pacific-region (accessed on 3 February 2022). [21]

KPMG (2020), "Fiji- Measures in Response to COVID-19", webpage, https://home.kpmg/xx/en/home/insights/2020/04/fiji-government-and-institution-measures-in-response-to-covid.html (accessed on 8 March 2022). [13]

Lastra, R. and M. Bodellini (2018), *"Soft Law and Sovereign Debt"*, United Nations Conference on Trade and Development, Geneva, https://unctad.org/system/files/non-official-document/SOFT%20LAW%20AND%20SOVEREIGN%20DEBT.pdf. [29]

Ministry of Economy Fiji (2021), *Economic and Fiscal Update to the 2021-2022 Budget*, Ministry of Economy, Republic of Fiji, Suva, https://www.economy.gov.fj/images/Budget/budgetdocuments/supplements/Budget_Supplement_2021-2022_Web.pdf (accessed on 10 March 2022). [4]

MRAG Asia Pacific (2016), *Towards the Quantification of Illegal, Unreported and Unregulated (IUU) Fishing in the Pacific Islands Region*, MRAG Asia Pacific, Toowong Qld, Australia, https://www.ffa.int/files/FFA%20Quantifying%20IUU%20Report%20-%20Final.pdf. [25]

New Zealand Foreign Affairs & Trade (2021), *Support for Fiji's 2021 COVID-19 outbreak*, webpage, http://www.mfat.govt.nz/fr/aid-and-development/humanitarian-action/support-for-fijis-2021-covid-19-outbreak/ (accessed on 26 April 2022). [34]

OCHA (2020), "Tropical Cyclone Harold", webpage, https://reliefweb.int/disaster/tc-2020-000049-vut (accessed on 11 April 2022). [15]

OECD (2021), "COVID-19 pandemic: Towards a blue recovery in small island developing states"*, OECD Policy Responses to Coronavirus (COVID-19)*, OECD Publishing, Paris, https://doi.org/10.1787/241271b7-en. [1]

OECD (2018), *Making Development Co-operation Work for Small Island Developing States*, OECD Publishing, Paris, https://doi.org/10.1787/9789264287648-en. [11]

OECD (2018), *Making Development Co-operation Work for Small Island Developing States*, OECD Publishing, Paris, https://doi.org/10.1787/9789264287648-en. [10]

Pacific Islands Forum (2020), "Pacific humanitarian pathway on COVID-19 continues delivery of medical supplies", 30 June, Pacific Islands Forum, https://www.forumsec.org/2020/06/30/pacific-humanitarian-pathway-on-covid-19-continues-delivery-of-medical-supplies/. [27]

Ritchie, H. et al. (n.d.), *Coronavirus (COVID-19) Vaccinations*, (database), https://ourworldindata.org/covid-vaccinations?country=OWID_WRL (accessed on 14 April 2022). [35]

SPC FAME (2021), "Synthesis of COVID-19 impacts on fisheries and aquaculture in the Pacific"*, Information Paper*, No. 5, 13th SPC Heads of Fisheries Meeting, https://lmmanetwork.org/resources/covid/ (accessed on 14 March 2022). [19]

UNOHRLLS (forthcoming), *Financing for Development of SIDS*. [8]

USAID (2021), "United States provides additional $1.9 for urgent COVID-19 assistance in the Pacific Islands", 25 October, Press Release, United States Agency for International Development, Washington, DC, https://www.usaid.gov/pacific-islands/press-releases/10-25-2021-us-provides-additional-1-point-9-million-urgent-covid19-assistance-pacific-islands. [37]

Vula, T. (2021), "RBF: Fiji records increased inward remittances", 1 September, The Fiji Times, https://www.fijitimes.com/. [12]

Women in Fisheries Network (2014), *The role and engagement of Women in Fisheries in Fiji*, http://womeninfisheriesfiji.org/wp-content/uploads/2016/10/The-Role-Engagement-of-Women-in-Fisheries-in-Fiji.pdf (accessed on 18 May 2022). [22]

Word Bank (2022), *Debt Service Suspension Initiative*, https://www.worldbank.org/en/topic/debt/brief/covid-19-debt-service-suspension-initiative (accessed on 18 May 2022). [30]

World Bank (2022), "Fiji Social Protection COVID-19 Response and System Development Project Additional Financing Environmental and Social Management Framework (ESMF)", webpage, https://projects.worldbank.org/en/projects-operations/project-detail/P175206 (accessed on 8 February 2022). [32]

World Bank (2021), "World Bank Group's new Country Partnership Framework for Fiji (2021-2024)", *Brief*, 29 January, World Bank, Washington, DC, https://www.worldbank.org/en/country/pacificislands/brief/world-bank-groups-new-country-partnership-framework-for-fiji-2021-2024#:~:text=The%20World%20Bank. [33]

Notes

[1] Unless originally informed in USD by the source, all values provided in dollars in this chapter were converted using BSP calculator (www.bsp.com.fj/business-banking/exchange-rates/calculator/) with an approximate rate of 1 FJD = USD 0.4622.

[2] According to Fiji's Bureau of Statistics, the total labour force captures by the Employment and Unemployment Survey 2015/16 was equal to 346 214.

4 Governance architecture and policy tools for Fiji's sustainable ocean economy

The interconnected nature of marine resources and the economic sectors they support means that more holistic approaches are needed to ensure policy coherence, identify and manage trade-offs between the sectors, and take advantage of synergies where policies can deliver benefits to multiple sectors. This chapter examines ocean policy governance in Fiji, including efforts to develop a National Ocean Policy for a more strategic, co-ordinated and integrated approach. It looks specifically at policy instruments in marine protection, sustainable fisheries management, maritime transport, living and non-living marine resources, and tourism.

4.1. Institutional architecture and governance

The ocean is a central resource in Fijian society and cultural affairs, and well represented in many of the ministerial mandates (Republic of Fiji, 2021[1]). Nearly all of the ministries of Fiji hold some form of mandate relevant to the ocean. The primary ocean management areas include fisheries, waste management, tourism, shipping, environmental protection, maritime/marine pollution, non-living marine resources, coastal infrastructure and cultural resources (Republic of Fiji, 2021[1]). Many of these issues are managed by a number of stakeholders, as shown in the matrix below (Figure 4.1).

Figure 4.1. Mapping of responsibilities across ministries

	Fisheries	Waste management	Maritime/marine pollution	Tourism	Shipping	Environmental protection	Coastal infrastructure	Non-living marine resources	Cultural resources
Ministry of Economy	■	■	■	■	■	■	■	■	■
Ministry of Fisheries	■					■			
Ministry of Forests						■			
Ministry of Environment	■	■	■			■	■		
Ministry of iTaukei Affairs	■								■
Ministry of Commerce, Trade, Transport and Tourism		■	■	■	■				
Ministry of Local Government		■	■						
Ministry of Lands and Mineral Resources			■		■		■	■	

The fragmentation of ocean responsibilities, globally, has led to ineffective management and an accumulation of pressures upon natural resources that underpin much of the core ocean economic interests, including tourism and fisheries. Integrated ocean management is the most effective approach to account for the many ocean stakeholders and resource interests whilst accounting for external pressures such as climate change (Underdal, 1980[2]). The management approach is a core tenet of the headline commitment to sustainably manage 100% of the Exclusive Economic Zones (EEZ) made by the members of the Ocean Panel, including Fiji (Ocean Panel, 2020[3]; Ocean Panel, 2021[4]).

In 2020, the Ministry of Economy established the National Ocean Policy Steering Committee (NOPSC) to support a more strategic, co-ordinated and ultimately integrated approach to ocean governance. The committee seeks to steer the political and economic ocean agenda in a participatory manner (Republic of Fiji, 2021[1]). However, this group does not replace the ocean-related ministerial mandates or technical committees. Instead, it aims to create coherence between ministerial priorities towards sustainable ocean management.

The National Ocean Policy (NOP) and the NOPSC at large provides a structure to organise the previous policy mandates and technical committees under a single co-ordinating body (Republic of Fiji, 2021[1]). Within the NOPSC, the various ministerial actors retain their leaderships of, and positions within, committees established by previous legislative mandates. This approach to governance provides the potential to focus these groups and mandates towards national targets that account for the ocean more holistically, agreed by a super majority of the NOPSC members. The technical committees under the

NOPSC are focused on thematic interests at the core of the mandates of their ministerial leads and participants.

The Protected Area Committee (PAC), headed by the Ministry of Environment, was formed under the Environment Management Act 2005 (Republic of Fiji, 2005[5]).The committee is composed of ministerial actors that hold mandates for sustainable environmental management and protection from the land to the ocean. It includes non-governmental NGO stakeholders and has a marine-specialist working group focussed on protected areas. This working group leads identification of potential marine protected areas (MPAs) through the application of marine spatial planning processes. The work of the PAC is channelled through the National Environment Council before the Cabinet ultimately makes decisions.

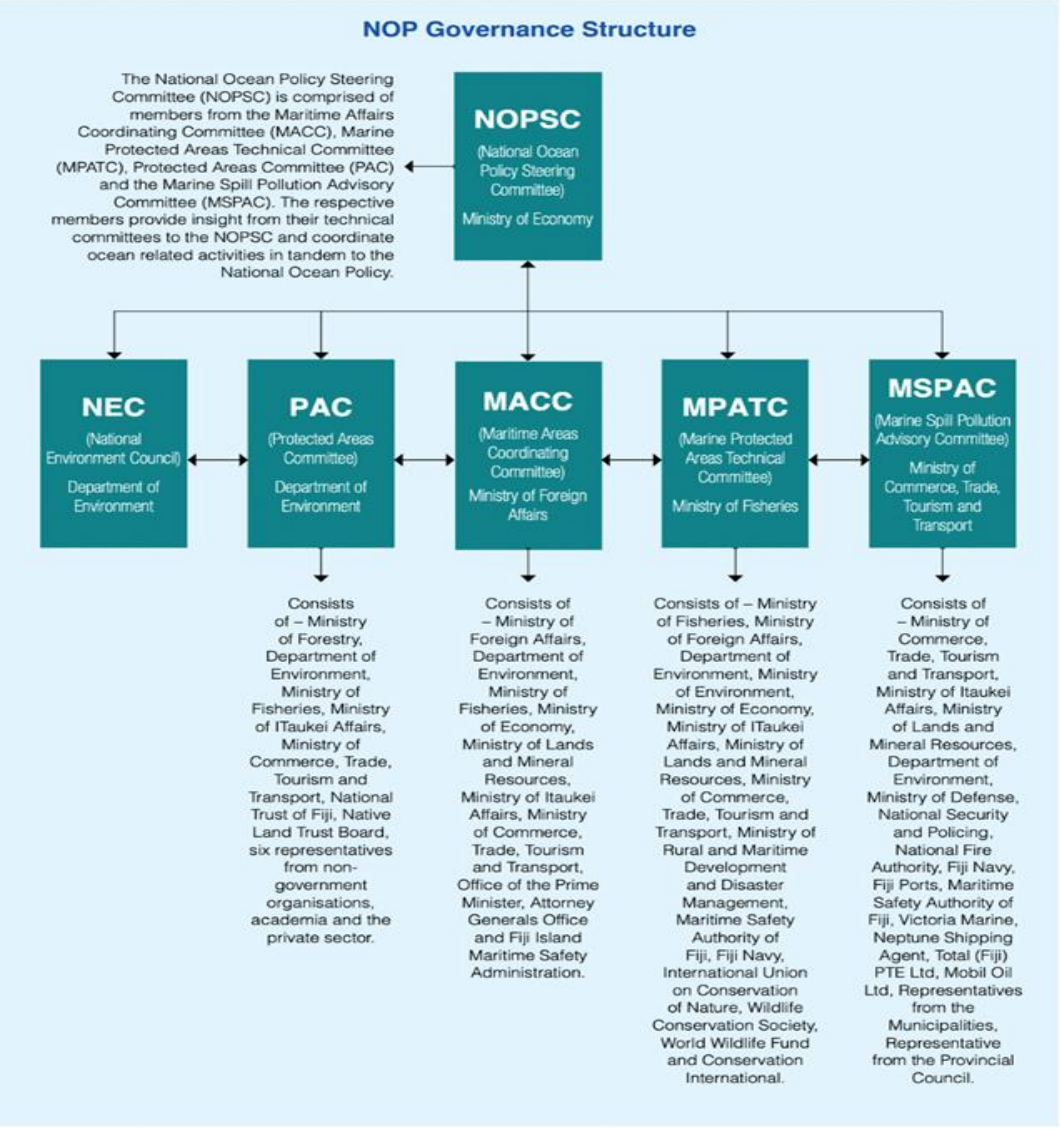
The Marine Protected Areas Technical Committee (MPATC), headed by the Ministry of Fisheries, is formalised by the Offshore Fisheries Management Decree 2012 (Republic of Fiji, 2012[6]). This committee brings together ministerial stakeholders required to achieve its mandate for the sustainable management of the marine area under national jurisdiction. This includes the identification and implementation of MPAs.

The Maritime Areas/Affairs Coordinating Committee (MACC) is led by the Ministry of Commerce, Trade, Transport and Tourism. It includes many of the ministerial stakeholders that operate offshore, as well as members of the Geoscience Division of the The Pacific Community. As one of its primary working areas, the MACC has focussed on formalising the country's maritime boundaries. This includes negotiating treaties between neighbouring countries to resolve disputes and arrange for the submission of claims to extend the Exclusive Economic Zone (EEZ) to the limit of the continental shelf. The MACC also reviews legislation that affects the management of marine resources, ranging from The Continental Shelf Act 1970 (Republic of Fiji, 1970[7]) through to the National Ocean Policy (Republic of Fiji, 2021[1]).

The Marine Spill Pollution Advisory Committee is led by the Ministry of Commerce, Trade, Transport and Tourism. It includes ministerial stakeholders and a number of private industry representatives from the shipping and oil and gas sectors. It was established under the Maritime Transport Decree 2013, which domesticated Fiji's obligations under the Conventions of the International Maritime Organization (IMO) (International Maritime Organization & International Conference on Training and Certification of Seafarers, 1993; International Maritime Organisation, 1992 and 1999). The committee primarily manages the National Oil Pollution Pool, a fund created by levies collected from actors that could potentially produce marine spills.

The National Environment Council (NEC), led by the Ministry of Environment, was established under the Environment Management Act 2005 (Republic of Fiji, 2005[5]). The NEC co-ordinates the formulation of policies and planning documents related to the environment, including but not limited to the ocean. In particular, the NEC ensures that environmental plans and policies include the perspectives of resource users, whether from private industry or the public.

Figure 4.2. National ocean policy governance structure



Source: National Ocean Policy, Republic of Fiji (2021[1]).

4.2. Policy instruments to grow Fiji's ocean economy more sustainably

Marine protection and sustainable management

The ocean can provide the energy, food, and cultural connections that humans require, but it requires effective protection and sustainable management. Fiji and the rest of the South Pacific Island Countries and Territories (PICTs) have long been advocates for the sustainable management and protection of the ocean.

> *"Fijians have been at the forefront of ocean action and leadership because it is our responsibility as an oceanic people. Our very culture, our traditions, values and customs are intimately linked to the marine ecosystems that have sustained us since time immemorial. As a "large ocean state" it is our right and our privilege to be stewards of our exclusive economic zone of approximately 1.3 million square kilometers." Hon. Aiyaz Sayed-Khaiyum (Republic of Fiji, 2021, p. 6[1])*

Putting this cultural ethos in action, the country has recently taken two key policy actions that have reaffirmed Fiji's position as a global leader in ocean affairs. First, as a member of the High Level Panel for a Sustainable Ocean Economy, it made the headline commitment of sustainably managing 100% of its EEZ guided by an overarching policy document, the Sustainable Ocean Plan (SOP) (Ocean Panel, 2021[4]). Second, it produced a new NOP that outlines national priorities, such as 100% sustainable management and protecting 30% of the ocean by 2030 (Republic of Fiji, 2021[1]).

The NOP covers many ocean policy positions, but it is rooted in one key goal: the co-ordinated 100% sustainable management of the ocean area under national jurisdiction (Republic of Fiji, 2021[1]). The creation of the policy and the earlier establishment of the NOPSC institutionalised the Ocean Panel headline commitment. In addition, producing the NOP through an inclusive and participatory process led the Ocean Panel secretariat to recognise the policy as a suitable SOP (Ocean Panel, 2021[4]).

The NOP, the National Biodiversity Strategy and Action Plan 2020-2025, and the preceding Green Growth Framework have outlined a staged and multistakeholder approach to protect 30% of Fiji's EEZ by 2030 (Republic of Fiji, 2021[1]; Department of Environment, Government of Fiji, 2020[8]; Ministry of Strategic Planning, National Development and Statistics, 2014[9]). The responsibility for implementing and managing MPAs lies primarily with the Ministries of Fisheries with support from the Ministry of Environment; Fiji Policy Force; Ministry of Defence and National Security; and the Ministry of iTaukei Affairs. Each stakeholder plays an essential role in marine protection through its existing policy mandates, which the NOP has aggregated into an integrated strategy.

MPA identification and implementation

The Ministry of Fisheries through the Offshore Fisheries Management Decree 2012 assumes responsibility for the designation of protected areas. The Permanent Secretary ultimately designates MPAs. However, the Director of Fisheries identifies and recommends specific areas within the country's marine area under national jurisdiction (EEZ), from the coastline to the maritime boundary (Republic of Fiji, 2012[6]).

The Ministry of Fisheries co-ordinates with the PAC – established under the Environment Management Act 2005 – and leads the MPATC in identifying appropriate areas that can be protected to maximise the benefits of meeting this target. Both the PAC and the MPATC are organised under the NOPSC (Figure 4.2). In pursuit of protecting 30% of the EEZ, the Ministry of Fisheries/MPATC began by engaging the PAC to review marine areas that had previously been recognised as significant. This effort expands upon the prior inventory of marine sites of ecological, geological, biological, landscape, recreational and/or geomorphological significance that were identified as a part of the National Environment Strategy (Fiji and IUCN, 1992[10]). The MACBIO programme has accelerated identification of priority areas for protection. A MACBIO report (Sykes et al., 2018[11]), identified "Special, Unique Marine Areas" (SUMAs) that contribute significantly to marine biodiversity in the country. These SUMAs update and expand the inventory of important marine areas. However, they are not a list of areas that should or will necessarily be protected. Rather, they are a set of priority areas with a ranking between 5 and 12, with higher ranks indicating a greater priority for management.

Expanding the inventory of priority areas based on a set of criteria that recognises attributes that make them unique. This process is one small part of the exercise to identify areas that should be protected based on their role as biodiversity hotspots, climate regulation and nutrient cycling, among many other services. The country has undertaken a data-driven process to identify the ultimate MPA network that will make up 30% of the EEZ. It is pursuing this goal with the assistance of stakeholders, including the International Union for Conservation of Nature (IUCN) and the Wildlife Conservation Society (WCS). The SUMAs were identified as one of more than 100 data layers to identify priority areas for protection. The process is based on a wide range of criteria to ensure that marine areas of national significance are

protected. At the same time, it seeks to maintain access to important sustainably managed resources, including the tuna fishery.

The identified network of areas, which is undergoing rounds of public consultation, would be a roadmap for the protection of 30% of the EEZ by 2030. The NOP outlines key milestones (Republic of Fiji, 2021[1]) for the designation of 5% of the EEZ by 2023 and 10% by 2025. The plan would be implemented gradually, giving Fiji eight years to achieve its 30% target. It would become an example of best practice to guide other countries pursuing similar targets for marine protected areas.

MPA challenges: Monitoring and enforcement

The primary governance challenge inherent to this commitment is the surveillance and monitoring of the area-based management tools, and the enforcement of the MPA regulations. The EEZ of Fiji is about 1.29 million km^2 – an approximate figure due to disputed boundaries and ongoing claims to extend the EEZ due to the continuity of the continental shelf in the north and south of the country. Protecting 30% of this total area equates to the management of 387 000 km^2; or, an increase in MPA coverage of about 375 000 km^2 over that which is currently protected under an internationally recognised designation. Such a scaling-up requires an evolution in the capacity and resources available to the National Environment Security Taskforce (NEST) and Ministry of Defence and National Security at large to conduct monitoring and enforcement as mandated by the NOP.

Other countries with large coastal areas and total EEZ have focused on leveraging the tourism assets of the protected seascapes to generate the revenue necessary for monitoring and enforcement – whether for vessel procurement and maintenance, or legal representation. In the Philippines, this model, in the form of the National Implemented Protected Area System (NIPAS) Act (Republic of the Philippines, 1992[12]), also known as Republic Act 7586, has proven to be successful. In this case study, large seascapes have been protected and, where possible, marketed as national tourism hotspots in collaboration with the national tourism agency and regional tourism associations. The revenue generated is centralised into the national Department of Environment and Natural Resources and disbursed to Protected Area Management Bureaus associated with each of the NIPAS areas. This provides a relatively stable source of finance for monitoring and enforcement for these areas. Otherwise, they would struggle to generate enough baseline funding for management.

The MPA management funding model could be replicated to some extent in Fiji to leverage the value of tourism assets in the more accessible of the proposed areas. Such leveraged assets could generate revenue to help the Ministries of Economy and Defence and the NEST acquire and maintain the necessary technology and resources. The primary challenge of this approach in Fiji is the offshore MPA strategy, with the distance from shore and the depth of ecosystems being prohibitive to tourism access. Coastal biodiversity and protected areas may provide an opportunity to generate revenue in collaboration with local communities that are integrated into coastal zone management. However, generating revenue at the scale necessary from coastal assets, and in an equitable manner, remains a challenge.

The NOP outlines an updated approach to raise capacity to ensure the protected areas are well managed and that the entire EEZ is sustainably managed:

- Increase national maritime domain awareness among national agencies (such as the Ministry of Fisheries, Maritime Safety Authority of Fiji, Water Police and Fiji Navy), private sector (such as tourism operators and shipping lines) and local communities, as well as relevant regional and international partners and governments to further embed multidimensional security into the 100% sustainable management of areas within national jurisdiction.
- Enhance inter-agency information management and work delivery across multidimensional security issues.

- Expand co-ordination among agencies to safeguard the ocean from land-based threats through establishment of a protocol and communication procedure through a national focal point.
- Increase enforcement through surveillance of the ocean, including designated area-based management tools and fishing hotspots, and ensure compliance of all marine activities.
- Strengthen regulations and mandated legislative powers where necessary, including for emergencies and use all available means to legally pursue all infringements.

The capacity enhancement process prioritises distributed awareness of the regulations, strengthened cross-ministry information management and sharing, and enhanced technology and capacity for surveillance, and adopts a more litigious and resourced stance towards rule breakers. The key challenges in this set of objectives, for the area represented by 30% of the EEZ, is surveillance and compliance. All the objectives require investment, whether in communications technology or in-house legal representation. However, given the scale of the area, surveillance and compliance will require innovative applications of technology and vessel co-ordination. To date, the Ministry of Defence is already using a number of remote sensing technologies. This includes Vessel Monitoring Systems coupled with use of technology such as Geofencing and Global Fishing Watch as a means to co-ordinate response. A deeper evaluation is needed to create cost-effective processes for co-ordinating vessels responses through a larger space based on vessel tracking and behavioural alerts.

Informal marine protection

The NOP recommits to the goal of protecting 30% of the EEZ by 2030, and progress has been made towards that end through the efforts of the Ministry of Fisheries, the MPATC and external partners. However, the country also has a large area of informally protected marine areas throughout the coastal zone. These could be leveraged for more equitable and inclusive benefits in achieving the national target of marine protection. The coastal zone in Fiji is managed by several different stakeholders:

- The Ministry of Environment, through the Environment Management Act 2005 (Republic of Fiji, 2005[5]), is responsible for reducing environmental pollutions and pursuing legislative action to compensate those affected by environmental degradation caused by pollution.
- The Ministry of Fisheries, through the Offshore Fisheries Management Decree 2012 (Republic of Fiji, 2012[6]), is responsible for the development and sustainable management of the fishery, including the regulation of commercial fishing enterprise through a licensing programme.
- The Ministry of iTaukei Affairs advocates for the traditional and cultural rights of Indigenous Peoples of Fiji, the iTaukei. It pursues these objectives through the iTaukei Lands and Fisheries Commission (TLFC), a composite statutory body formed under the iTaukei Land Act 1905 (Republic of Fiji, 1905[13]), and The Fisheries Act 1941 (Republic of Fiji, 1941[14]). It advocates for maintaining the many natural access rights, including the right to access and subsist off coastal resources through non-commercial enterprises.
- The Ministry of Local Government and the Local Councils are responsible for managing waste and providing the necessary services for the removal and processing of waste to prevent environment degradation through pollution.

The primary synergies are between the Ministry of Environment and Local Government Councils. These groups work together to ensure that infrastructure is sufficient to prevent land-based sources of pollution driving coastal degradation. While potentially contrary management responsibilities exist between the Ministry of Fisheries, which has a mandate to regulates the extraction of living coastal and marine resources and the Ministry of iTaukei Affairs, which maintains an unrestricted – though limited to coastal areas adjacent to communities – traditional access right to the fishery for the iTaukei people.

The iTaukei people have held a customary marine tenure, which includes coastal living resources, for millennia. This right is a shared community resource, wherein fisherfolk harvest marine resources for

the subsistence of their families or for community functions where required. The goods are not sold throughout the community instead, being shared as a community resource. Each village maintains a social and cultural association with nature, including the marine and coastal areas adjacent to their community. This area is managed by groups of related communities, and the Ministry of iTaukei Affairs represents these rights in the formation of policy and planning documents at the national level (Republic of Fiji, 1941[14]).

This distribution of responsibility creates a challenge in protecting marine areas to a degree recognised by international standards such as the typology created by the IUCN (IUCN, 2013[15]) **– namely the aim to establish areas from which no resources can be extracted**. It is not possible to create a "fully protected area" or a permanent "no-take zone" and maintain the cultural access right to resources for subsistence, unless it is the community that closes the area. However, it is possible to create effective area-based management tools that regulate when fishing occurs, the species targeted and the technology that can be applied. This can include temporary or permanently protected areas, should the community choose. These area-based management tools, applied at a very local level, usually by engaging local leaders as the project proponent/ resource owner, are often referred to as Locally Managed Marine Areas (LMMA) (Govan et al., 2008[16]).

Fiji has been an early adopter and successful case study of the LMMA. A review of the extent of the coastal zone covered by LMMAs found (Govan et al., 2009[17]) **that LMMAs had been implemented over ~10 000 km^2, covering 22% of the coastal zone**. Of this figure, at the time, 600 km^2 of the total were community designated '*tabu*', or no-take areas. [1]

Fiji's network of LMMAs makes a small contribution towards protecting 30% of the EEZ. However, it is the most effective way to represent local community needs in marine management and potentially leverage these assets for the further enrichment of coastal communities. Yet, the LMMA is not eligible in accounting towards international targets, including Aichi Target 11, or the potential "30 by 30" target in the Post-2020 Biodiversity Framework Zero Draft for negotiation at the Convention for Biological Diversity (CBD) Conference of Parties in 2022.

LMMAs could potentially be counted as "Other Effective Conservation Measures" towards targets established under the CBD. However, the communities that are a part of the LMMA network would first need to be consulted and build consensus on whether there was a local desire for their efforts to contribute towards national and international targets. The contributions of LMMAs and other indigenous systems of management in national accounting can bring many benefits, including enhancing community resilience to environmental and social disasters.

Waste management

The pollution of the coastal zone and the movement of pollution from the coast into the open ocean is one of the most significant and long-standing threats to ecological health and the social well-being that relies upon it. Pollution comes in many forms and from many sources, which places it among the most difficult of the many ocean management challenges.

Fiji has developed many policies to manage pollution, in collaboration with regional partners that have held a primary target of managing pollution. These include partners such as the South Pacific Regional Environment Programme (SPREP) - with ongoing work through the PacWastePlus project (SPREP, 2020[18]). Waste in Fiji comes from many sources, with different land uses often associated with different waste management challenges. The growing urban population in Fiji, for example, generates a challenge across the waste management process, including industrial waste, solid and liquid and a small range of hazardous waste.

The NOP notes that challenges to effective waste management processes that can limit the quantity of waste moving into the coastal zone is one of five major threats to the ocean identified by

stakeholders and assessments (Republic of Fiji, 2021[1])**.** The policy recognises that better co-ordination and awareness of how waste enters and affects the ocean will be required to change the behaviours driving this problem. Of particular importance is the use of the legislative tools to enforce compliance through the Environment Management Act 2005 (Republic of Fiji, 2005[5]) and the Litter Act 2008 (Republic of Fiji, 2008[19]). The Clean Environment Policy, launched in 2019, will be a key tool to proactively raise awareness among the public about how behaviours relate to the pollution of the marine environment.

Marine pollution is a pervasive issue that spreads throughout the country's EEZ and beyond, requiring integration and co-operation, even across borders, to resolve. The Environment Management Act 2005 (Republic of Fiji, 2005[5]) is the central policy document to address waste management and pollution control measures. Working through the Marine Spaces Act 1977 (Republic of Fiji, 1977[20]), it introduces measures that encompass the entire EEZ. Within waste management, the policy landscape includes a number of cross-ministerial action areas and policy measures:

- The Fiji National Solid Waste Management Strategy 2011-2014 (Republic of Fiji, 2011[21]),
- National Plan for the Implementation of the Stockholm Convention on Persistent Organic Pollutants in Fiji Islands (2006),
- Climate Change and Health Strategic Action Plan 2016-2020 (Republic of Fiji, 2016[22]): Recognising waste management as a strategy to reduce disease risk,
- Environment and Climate Adaptation Levy Act (Republic of Fiji, 2015[23]): With specific regulations/levies around the use of plastic bags,
- iTaukei Affairs Act (Republic of Fiji, 1944[24]): Allowing local councils to create bylaws for the management of waste,
- National Liquid Trade Waste Policy (Republic of Fiji, 2017[25]).

The country has made significant progress recently to enhance the policy foundation for actions to reduce plastic waste pollution, including the following:

- the plastic bag levy and 2020 ban legislated through the Environment Management Act 2005 (Republic of Fiji, 2005[5]),
- the styrofoam/polystyrene ban, covering the use, import and manufacture of expanded polystyrene.

Plastic levies and bans are critical steps in managing solid waste. However, the challenge of waste management is significantly larger than that of plastic waste. Using plastic as an international rallying point will help resolve challenges in solid waste management at large. However, liquid and hazardous waste produce many of the most significant waste-related impacts upon marine ecosystems. These affect water quality habitat viability is affected itself (IRP, 2021[26]). While the policy landscape is robust and covers many waste sources, major challenges lie in developing the distribution and density of waste management infrastructure. This includes incentivised recycling centres and water treatment plants (Republic of Fiji, 2021[1]); (SPREP, 2020[18]).

The management of waste and its impact upon the coastal zone and beyond can be managed through mitigation *and* prevention. Towards those ends, Fiji is relatively advanced through its adoption and institutionalisation of Integrated Coastal Zone Management (ICZM) approaches. ICZM is a systems-based management practice that covers a range of approaches that vary globally with the ecological and social contexts. ICZM aims to identify the many stakeholders connected to the coastal zone, and the connectivity between land and ocean biomes. In this way, it helps harmonise sustainable and prosperous practices across the land-sea interface (Thia-Eng, 1993[27]). Fiji established its ICZM Framework in 2011 and has used much of the framework's language and aims to develop the NOP's integrated ocean management principles (Republic of Fiji, 2021[1]). The WCS has spearheaded some of the major ICMZ-based successes in the country. It has worked extensively on watershed management, ridge to reef

approaches, and on ICZM plans to enhance environmental management, including the mitigation of pollution (Makino et al., 2013[28]).

Sustainable fisheries management

Fisheries are a core resource derived from the ocean and tidal areas around the world. The content for fisheries herein encompasses both catch fisheries by vessels in the coastal and open ocean, and aquaculture and mariculture practices that occur in or adjacent to the tidal area and coastal zone.

The Ministry of Fisheries, established in 2018 as an independent ministerial entity, holds a mandate for the sustainable management and protection of the marine and coastal resources. Its strategic objectives include sustainable harvest fisheries from the coastal and offshore zones; aquaculture development; and research and innovation. The ministry administers the Offshore Fisheries Management Decree 2012. It also develops new policies and development plans for the industry (Republic of Fiji, 2012[6]), including the forthcoming National Fisheries Policy (Republic of Fiji, 2020[29]).

Offshore fisheries

Fiji, the South Pacific High Seas Pocket, and many of the Pacific Island Countries and Territories (PICTs) are home to the world's largest tuna fishery. Management of offshore fisheries, primarily focused on tuna, is governed directly by the Offshore Fisheries Management Decree 2012 (Republic of Fiji, 2012[6]).

Fiji has the most developed fisheries capacity in the region, allowing it to access and utilise the fisheries resources to a higher degree than many of the other PICTs. In 2020, Fiji maintained 86 longline vessels as part of its national fleet. However, the ministry caps licences for the right to fish within the EEZ to 60 vessels. Of the remaining, 20 vessels fish exclusively in the high seas (High Seas Pocket and international waters), with 6 licensed to fish in Fiji's archipelagic and territorial seas (Hare et al., 2021[30]) Those fishing within the High Seas Pocket are regulated under the Regional Fisheries Management Organisation: the Western Central Pacific Fisheries Commission, with co-operation from the Forum Fisheries Agency (FFA) (WCPFC, 2000[31]).

The greatest challenge of the ministry in offshore fisheries management is monitoring and surveillance of illegal, unregulated, and unreported fisheries (IUU) to ensure IUU practices are not degrading the health of the fish stock. To this end, it has put in place several measures and partnerships, including greater representation of observers on vessels; and a collaboration with the World Wide Fund for Nature (WWF), the FFA and the Fiji Fishing Industry Association that has led to re-establishment of Fiji's Marine Stewardship Certification in 2018 (Akroyd and McLoughlin, 2017[32]).

Inshore fisheries

The Offshore Fisheries Management Decree 2012 includes provisions for the management of the inshore fishery through a licensing programme. However, there is a distinction between fisheries activities and their practitioners, and the licensing requirements (Republic of Fiji, 2012[6]). The ministry registers each fisher that extracts marine living resources with the intent to sell them (Republic of Fiji, 2012[6]). There is a distinction between those that sell resources, and those that use them for subsistence and cultural purposes. This distinction divides line between the licensing responsibility of the ministry and the rights of the iTaukei people to utilise marine and coastal resources (Republic of Fiji, 1941[14]).

The regulatory line between subsistence and commercial purposes is occasionally crossed, and a licensing process is proactively pursued to ensure that penalties against indigenous communities are avoided, as was observed during the COVID19 pandemic. During the pandemic, many citizens

returned to the coastal zone, relying upon coastal resources to ensure food and economic security. This led to the sale of living resources collected from coastal areas by those with access rights. Observers reported this practice to the Ministry of Fisheries triggered a licensing process and reform – characterised by the lifting of the licence fee for a period of three years for small-scale operators.

Aquaculture (including mariculture)

Aquaculture is in its nascence in Fiji; however, the industry has been recognised as a potential source of food security and a significant opportunity for sectoral growth in Fiji's 5-year and 20-year National Development Plan (Ministry of Economy, 2017[33]). While the sector is a target for growth, the Ministry of Economy has recognised the industry has observed slow growth to date (Ministry of Economy, 2017[33]). The forthcoming National Fisheries Policy is expected to provide the necessary guidance to support investment and expansion.

The country holds two major emerging policy tools to develop the sector: the 2016 Aquaculture Bill (Republic of Fiji, 2016[34])**, and the forthcoming National Fisheries Policy** (Republic of Fiji, 2020[29]). The draft National Fisheries Policy draws much of the aquaculture bill under its remit. It will act as the primary policy instrument to guide development of the sector in alignment with the National Development Plan (Ministry of Economy, 2017[33]) and the Strategic Development Plan 2019-2029 (Ministry of Fisheries, 2019[35]).The goal for aquaculture is to use the industry as a means for economic growth and a stable source of nutrition. Targets will be primarily focused in the tidal zone for brackish water production (Ministry of Fisheries, 2019[35]).

Coastal efforts are focused on fish aggregation and the identification of successful, scalable enterprises, while work is ongoing in the tidal zone to build capacity for the larger scale production of tilapia and shrimp (Ministry of Fisheries, 2019[35])**.** Development of coastal products may include increasing pearl production, identifying opportunities for seaweed production, and sea cucumber harvesting and processing (bêche-de-mer). However, unsustainable extraction of high-value sea cucumber species (*H. scabra*, sandfish) led to a species-specific export ban in 1988 (Pakoa et al., 2013[36]), a broader prohibition of compressors or SCUBA gear in harvesting in 2016 and a total commodity export ban in 2017.

The Strategic Plan 2019-2029 and the 5-year & 20-year National Development Plan highlight a rapid growth strategy for the industry (Ministry of Fisheries, 2019[35]; Ministry of Economy, 2017[33])**.** Growth, as highlighted in the 5-year & 20-year National Development Plan, will be catalysed by providing support in:

- promoting for private sector investment (through public-private partnership, tax incentives and research and development),
- incentivising commercial-scale developments for commodities, including prawn/shrimp, tilapia and seaweed,
- providing support to grow small-scale aquaculture enterprises to enhance the role of the industry as a source of food and economic security,
- improving access to training, advice, quality seed and feed, and financial support,
- upgrading support facilities that provide brood and feed stocks and evaluating the fee structure for these resources,
- evaluating the aquaculture value chain of specific species to identify value-adding techniques and processes and to create marketing strategies, including further exploring the potential to develop capacity in niche markets such as sea cucumber, sea grapes and marine fish culture.

The development trajectory targets both commercial-scale growth and small-scale producers as a source of sectoral growth and food/economic security, respectively. The commodities targeted as

the drivers for industry development, shrimp/prawn and tilapia, utilise either ponds and/or tanks (Ministry of Fisheries, 2019[35]). Both the pond and tank approaches require a cross-ministry approach for management due to the distribution of responsibilities for coastal land-use change and waste management. Pond aquaculture is typically concentrated in low-lying tidal plains with regular tidal inundation and hydrological inputs from the land, creating a brackish environment (Boyd and Tucker, 2012[37]). These tidal areas are often occupied by salt marsh and mangrove ecosystems (Spalding, 2010[38]), which are frequently converted into ponds for aquaculture. Mangrove and marsh conversion into aquaculture ponds has been the primary driver of the decline of mangroves in the Asia-Pacific region for the past 70 years (Goldberg et al., 2020[39]).

I**n Fiji, mangroves are managed by three ministries: Lands and Mineral Resources, Forests, and Environment.** Fiji's tidal area and foreshore are classified as state land and fall into the management jurisdiction of the Ministry of Lands and Mineral Resources. Mangroves, occupying the tidal area and foreshore, therefore fall into the remit of the Ministry of Lands and Mineral Resources (Republic of Fiji, 1945[40]); however, the Ministry of Forests can still designate appropriate mangrove areas as forest reserves and license commercial extractive activities (Republic of Fiji, 1992[41]). The Ministry of Forests licensing process protects mangrove ecosystems by requiring licences for activities that degrade the forest, including the felling of trees. However, these regulations do not extend to subsistence use of forest goods (Republic of Fiji, 1992[41]). The Ministry of Environment, through the Environment Management Act 2005, requires that developers of areas occupied by mangrove forests conduct an environmental impact assessment (EIA) prior to converting land or commencing construction. They must then present results to nearby communities for consultation (Republic of Fiji, 2005[5]).

A Mangrove Management Plan, was drafted in 1985 as an ecosystem evaluation and management framework, but never institutionalised as law in Fiji (Watling, 1985[42])**.** An update was drafted in 2013 but was not institutionalised either. The draft Mangrove Management Plan 2013 aims to ensure that mangroves are managed through a robust EIA process. This should allow for development and mangrove conversion but only after an accepted and consultative EIA and mitigation process (Watling, 2013[43]). As such, to create fishponds and grow the pond-based industry at large, the Ministry of Fisheries would be required to support small-scale practitioners navigate this process to obtain conversion licences for pond aquaculture where necessary. However, in 2012, the Ministry of Lands and Mineral Resources called for a hold on developments that would affect mangroves until after consultations on the Mangrove Management Plan 2013.

The forthcoming National Fisheries Policy aims to centralise some of the aquaculture establishment process, specifically regarding licensing (Republic of Fiji, 2020[29]). It is unclear whether the Ministry of Fisheries will create a Fishpond Lease Agreement mechanism, prevalent in many Southeast Asian (SEA) countries with large and distributed aquaculture industries (Adan, 2000[44]). The policy aims to:

> "Ensure legislation provides an effective permit and licensing system for the administration and control of the aquaculture industry, and that provides secure tenure" (Republic of Fiji, 2020, p. 14[29]).

The tenure element suggests a process to centralise some of the land zoning and management responsibility for coastal areas which is held within the Ministry of Environment and Ministry of Lands. Without centralising, a stakeholder would be required to apply for a land conversion licence with the Ministry of Lands. This, in turn, would be contingent upon an approved EIA with the Ministry of Environment to obtain a licence and/or tenure for aquaculture from the Ministry of Fisheries. These regulatory barriers would stifle the growth of the industry, especially at the small-medium enterprise level.

Consequently, efforts to generate policy coherence while retaining environmental standards for aquaculture has been identified as a key policy mechanism for industry growth (Beveridge et al., 2010[45]).

An additional governance barrier to pond aquaculture growth is the right of the Traditional Fishing Rights Owner (TRFO), established under Cabinet Paper 74(204) – registered by the iTaukei Fisheries Commission in the Register of iTaukei Customary Fishing Rights (Republic of Fiji, 1941[14]). The TRFO instituted the right for traditional rights owners to receive compensation for the loss of fishing rights that could occur through the degradation of natural resources which underpin the health of local fisheries. Mangroves contribute significantly to the health of nearby fisheries (O'Garra, 2012[46]). As such, each conversion would result in some form of damages to nearby rights holders. These would need to be factored into the mitigation strategies of the EIA and licence arrangements for aquaculture ponds.

Tank-based aquaculture requires co-ordination with the Ministry of Local Government and the Local Councils where the enterprise is established. This is primarily for the management of liquid waste that builds up in tanks due to unused feed and excrement. This waste, with high concentrations of nutrients, can be an environmental toxin (Dauda et al., 2019[47]). Water treatment facilities and waste transport must be co-ordinated with the local councils, which hold a jurisdiction-based responsibility to manage liquid and solid waste.

Waste management is a core demand in aquaculture and mariculture and has been a global challenge for the industry as investment has fuelled its growth (Dauda et al., 2019[47]). The concentration of living resources in relatively small spaces generates a variety of waste pollutants. Of particular significance to the nearby environment is the localised eutrophication potential that a high density of live organisms can generate through leftover feed and excrement. In addition, other waste, including medications, antifoulants and disinfectants can enter the environment and affect local ecosystems. Their impacts depend upon the concentration and volume of chemicals and the volume of the polluted waterbody (Dauda et al., 2019[47]).

Maritime transport

The Pacific is the largest ocean on Earth, with the EEZs of the PICTs alone representing a significant proportion of the world's ocean area under national jurisdiction. The "small" island states of the South Pacific are ocean states with immense ocean jurisdictions. The ocean connects each of the countries and the islands within. Moreover, the entire region relies heavily on maritime transport in the same way that many continents and countries rely on land transport for national and cross-border trade.

In the region, Fiji acts as a major transport hub with a relatively developed port infrastructure for short- and long-distance shipping of goods. Additionally, maritime transport is a critical transport and trade link between Fijian islands, particularly where the end destination does not yet have airport infrastructure.

The maritime transport sector is governed by the Ministry of Transport, situated within the Ministry of Commerce, Trade, Tourism and Transport. The Ministry of Transport administers the Maritime Transport Act 2013 (Republic of Fiji, 2013[48]), and guides development in accordance with the Maritime Transport Policy 2015 (Ministry of Infrastructure and Transport, 2015[49]). The primary goals of the policy are to:

- Maintain and enhance maritime security and safety.
- Provide sustainable and affordable domestic shipping.
- Domesticate international maritime commitments to the IMO.
- Reduce the environmental impacts of the industry, particularly with regards to greenhouse gas emissions from vessels and infrastructure.

The primary environmental/sustainability outcomes of the policy are generated through the domestication of IMO policies, which include provisions to reduce marine and port sources of pollution; and the goal to reduce the climate impacts of the shipping industry, which highlights the importance of low carbon fuel substitutes and improving energy efficiency and the potential for a shift toward renewable energy sources in alignment with the Green Growth Framework (Ministry of Strategic Planning, National Development and Statistics, 2014[9]) and the National Energy Policy (Republic of Fiji, 2013[50]).

Growth in the sector will require two major streams of work: developing port infrastructure further for international and regional trade; and enhancing inter-island connectivity to link more of the nation's distributed communities to trade opportunities. Both of these efforts require cross-ministerial and public-private collaboration, as the ports are managed by a separate entity. Fiji Ports, first established under the Ports Authority of Fiji Act 1985 (Republic of Fiji, 1985[51]), was later incorporated as Fiji Port Corporation Limited under the Seaports Management Act 2005 (Republic of Fiji, 2005[52]). The Government of Fiji and the National Provident Fund, holds the majority stake in the corporation but it is a private enterprise. The entity owns and operates Fiji's four major ports and identifies development opportunities separate from, though in alignment with, the Ministry of Commerce, Trade, Tourism and Transport. As such, reducing the carbon footprint of the sector will require collaboration with, and incentivisation of, the private port stakeholder and the private entities that operate within its remit.

The key lever towards sustainable and transformative growth in the sector is the commitment to reduce its carbon footprint by incentivising and encouraging the uptake of low-carbon technologies. The policy does not commit to a zero-carbon target, gross or net, or the complete decarbonisation of the industry. Instead, its language suggests an aim to reduce the carbon intensity of the sector at large, and invest in, identify, and develop low-carbon technologies. The policy does not offer an indicator at which emissions reduction would be achieved. However, it does commit the country to developing capacity and technology to monitor emissions. It also loosely commits the government to evaluate and produce requirements to address fuel emissions from ships in alignment with MARPOL Convention Annex VI (International Maritime Organization, 1992; Ministry of Infrastructure and Transport, Government of Fiji, 2015).

The key challenge in reducing the carbon footprint of the sector, while enhancing connectivity is the subsidies required to maintain services along non-profitable routes. The current fuel-focussed subsidy structure could be reformed and applied as a direct subsidy per passenger transport. This approach would retain an incentive for innovation, in the form of the input costs of fuel, though should only be pursued once there are available and competitive technologies in the region for low carbon or zero carbon transport. The carbon footprint could still be reduced along profitable routes where the government has committed to remove public competition to private services and support the development of private sector capacity. In addition, the Maritime Transport Policy recognised that price control should be a last resort (Ministry of Infrastructure and Transport, 2015[49]). The National Ocean Policy (Republic of Fiji, 2021[1]) does not build upon the stance towards price control or subsidies for the transport sector. It offers only a commitment to reduce harmful subsidies in the offshore fishing sector to reduce the artificially inflated capacity to fish.

The National Ocean Policy (Republic of Fiji, 2021[1]) **emphasises the country's commitment to reduce emissions from the sector, and outlines specific indicators that align with the Maritime Transport Act 2013** (Republic of Fiji, 2013[48]). These indicators focus on mitigating the effects of pollutants with collaboration across the NOPSC. They also draw on contributions of the Ministry of Commerce, Trade, Tourism and Transport to enhancing security, including indirect actions that enhance protected area management and the broader goal of sustainable managing 100% of the EEZ (Republic of Fiji, 2021[1]). Six key outputs of the National Ocean Policy Strategy are noted below:

- Output 2.8: “Constantly review and update Fiji’s catalogue on dangerous synthetic chemical and pollutants for farming/industrial use and implement a phase-out of these pollutants” (Republic of Fiji, 2021, p. 53[1]).
- Output 3.1: “Increase national maritime domain awareness among national agencies (such as the Ministry of Fisheries, Maritime Safety Authority of Fiji, Water Police and Fiji Navy), private sector (such as tourism operators and shipping lines) and local communities, as well as relevant regional and international partners and governments to further embed multidimensional security into 100% sustainable AWNJ management.” (Republic of Fiji, 2021, p. 54[1]).
- Output 3.2: “Enhanced inter-agency information management and work delivery across multidimensional security issues” (Republic of Fiji, 2021, p. 55[1]).
- Output 3.3: “Expand co-ordination among agencies to safeguard the ocean from land-based threats through establishment of a protocol and communication procedure through a national focal point” (Republic of Fiji, 2021, p. 56[1]).
- Output 3.4: “Increase enforcement through surveillance of the ocean, including designated area based management tools and fishing hotspots, and ensure compliance of all marine activities” (Republic of Fiji, 2021, p. 57[1]).
- Output 3.5: “Strengthen regulations and mandated legislative powers where necessary, including for emergencies and use all available means to legally pursue all infringements” (Republic of Fiji, 2021, p. 58[1]).

Mineral and non-living marine resources

Mineral resources on the seafloor have become among the more discussed and contentious topics of the decade. The most commonly discussed minerals centre around three primary interests:

- manganese nodules that primarily exist within abyssal plains,
- seafloor massive sulphides (SMS), which accrete near to hydrothermal vents,
- cobalt crusts, which are found in seamounts (Herzig, 1999[53]).

These minerals are available on land, though the high social and environment costs of mining and the costs required for mineral imports have shifted a portion of national exploratory interests offshore (ISA, 2021[54]). Terrestrial mining has a broad footprint with the mine sites themselves representing extensive land conversion and the distribution infrastructure including road networks, port infrastructure adding to the land conversion pressure. However, many of the environmental and health risks of terrestrial mining come from the use and, often unintended, release of chemicals into the nearby environment, including those with head neurological degenerative effects such as mercury and lead, and others that are toxic including arsenic (Worlanyo and Jiangfeng, 2021[55]). From a social perspective the challenges are concentrated in the land rights and the equitable distribution of the benefits of mining a countries natural resources, with local labour often not being engaged and compensated to the same extent as foreign labour and child labour being prevalent in the mining industry in the developing world (Mancini and Sala, 2018[56]). The interest in mining these minerals is due to the key roles they play in renewable energy technologies primary in the production of batteries for the storage of power from renewable energy sources and for electric cars (Ecorys, 2012[57]); and as a source of base metals including gold, copper, and zinc, in the case of SMS (Van Dover, 2010[58]).

In the context of a SIDS, minerals that make up part of the supply chain of key technologies for the future represent a significant opportunity for economic growth. Yet, the terrestrial deposits of minerals such as cobalt are not evenly distributed around the world. Much of the activity is concentrated in reclaiming cobalt from tailings in Central African mines. Ocean deposits of cobalt represent an entry point for many countries into the market, removing the barriers of high costs for mineral imports (ISA, 2021[54]). However, the environmental cost of mining does not go away when extraction is shifted offshore

(Stratmann and et al, 2018[59]), due to the concentration of minerals near key biodiversity hotspots and the impacts that disturbing the seabed can have on benthic habitats and vulnerable marine ecosystems. Nor does the practice resolve equitability issues or align with social values either, with key challenges identified in ensuring that revenue generation is equitably distributed and that the industry accounts for and builds local capacity and skills, and additional challenges in respecting traditional values held in the integrity of the seabed (Feichtner, 2019[60]); (Folkersen, Fleming and Hasan, 2019[61]).

The authority responsible for minerals at large is the Ministry of Lands and Mineral Resources. Under the Mining Act 1965 (Republic of Fiji, 1965[62]), which was amended in 2010 to allow for the exploration of deep-sea minerals, the ministry can grant licences to industry stakeholders with capacity to explore the seabed. In Fiji, the primary mineral interest is in SMS. These mineral resources within Fiji's EEZ are, under international law, available for extraction by the nation and its partners (UNGA, 1982[63]). Fiji has granted three exploration licences, although it has cancelled one of them.

The legality of deep-sea minerals within an EEZ lies with the country, but the president of Fiji imposed a ten-year moratorium on the extraction of mineral resources from the ocean for 2020-30. The moratorium will allow the licence holders to explore the EEZ for minerals. However, they cannot test any technologies on the collection of those minerals until the moratorium lapses or is overturned.

Once the moratorium period ends, the NOP outlines a requirement for economic sectors and opportunities to mitigate or reduce the effects of their activities on the ocean. This strategy comes with a strategic indicator that would mandate ministries to identify seabed mining exclusion areas, and a dedicated sustainability indicator:

> "Ensure that all seabed mineral activities within and beyond national jurisdictions comply with robust environmental standards." (Republic of Fiji, 2021, p. 61[1])

As there are no national definitions of environmental standards for deep-sea mineral extraction, or science-based consensus feeding into internationally accepted standards, the future of deep-sea mining is unclear. Environmental standards will need to be developed to guide future mineral extraction enterprises. With the current state of mining technologies and likely proximity of mineral interests to environmental resources, the regulation of activities within targets for sustainable ocean management and environmental standards will be a key barrier to industrial growth.

Tourism

Tourism is the primary driver of Fiji's economy, which inevitably means coastal tourism with the vast majority of infrastructure and hotspots located close to the ocean. The development of the industry was guided by Fiji Tourism 2021, administered by the Ministry of Tourism within the Ministry of Commerce, Trade, Tourism and Transport. The Ministry of Tourism is, as of writing, undergoing a strategic development process. It expects to produce an updated tourism management and development framework with a longer-term focus (over five to ten years).

The most detailed tourism plans from the government are in the 5-year and 20-year National Development Plan (Ministry of Economy, 2017[33]). The National Development Plan outlines two aims: expand the range of tourism products and market Fiji as a provider of niche, high-value tourist opportunities including diving; and enhance access to the tourism market among local communities.

Tourism in Fiji is dominated by large-scale operators, and the NOP recognises the need to help local communities enter and claim some of the market share (Republic of Fiji, 2021[1]). The NOP

identifies tourism as a major development opportunity, and a central contribution to the country's economy. It has two primary goals: mitigate the environment impacts of tourism; and develop sustainable tourism opportunities that are inclusive.

The inclusivity of the tourism industry in Fiji has been recognised as a challenge since the redevelopment of the sector and production of the Tourism Development Plan in 2003 while the industry was growing rapidly (Levett and McNally, 2003[64]). The strategic environmental assessment of the plan found that, among many challenges, a critical limitation to the equitable benefit from the tourism industry in the country was the effective utilisation of governmental instruments to ensure that tourism developments were inclusive. This finding is encapsulated in the NOP's strategic outputs and indicators for the industry:

- Strategic Output 5.2, Indicator 3: "Develop inclusive sustainable tourism that addresses climate change and pollution, regenerates ecosystems, builds resilience and reduces inequality" (Republic of Fiji, 2021, p. 61[1]).
- Strategic Output 5.2, Indicator 4: "Strengthen participatory local and international stakeholder engagement in tourism management systems to improve environmental and social outcomes" (Republic of Fiji, 2021, p. 61[1]).

References

Adan, R. (2000), "Requirements for fishpond lease: Things you need to know and do", *SEAFDEC Asian Aquaculture*, Vol. 22/2, pp. 13-14, http://repository.seafdec.org.ph/bitstream/handle/10862/1652/Adan2000-requirements-for-fishpond-lease.pdf?sequence=1 (accessed on 14 April 2022). [44]

Akroyd, J. and K. McLoughlin (2017), "MSC sustainable fisheries certification – Fiji albacore and yellowfin tuna longline: Final report", report commissioned by Fiji Fishing Industry Association MSC, Acoura, January. [32]

Beveridge, M. et al. (2010), "Barriers to aquaculture development as a pathway to poverty alleviation and food security", OECD Workshop Paris, 12-16 April, Worldfish Center, https://www.oecd.org/greengrowth/fisheries/45035203.pdf (accessed on 14 April 2022). [45]

Boyd, C. and C. Tucker (2012), *Pond Aquaculture Water Quality Management.*. [37]

Dauda, A. et al. (2019), "Waste production in aquaculture: Sources, components and managements in different culture systems", *Aquaculture and Fisheries*, Vol. 4/3, pp. 81-88, https://doi.org/10.1016/J.AAF.2018.10.002. [47]

Department of Environment, Government of Fiji (2020), *National Biodiversity Strategy and Action Plan 2020–2025*, Department of Environment, Government of Fiji, Suva, https://www.cbd.int/doc/world/fj/fj-nbsap-v2-en.pdf. [8]

Ecorys (2012), *Blue Growth - Scenarios and Drivers for Sustainable Growth from the Oceans and seas*, https://webgate.ec.europa.eu/maritimeforum/system/files/Subfunction%203.6%20Marine%20mineral%20resource_Final%20v120813.pdf (accessed on 22 April 2022). [57]

Feichtner, I. (2019), "Sharing the Riches of the Sea: The Redistributive and Fiscal Dimension of Deep Seabed Exploitation", *European Journal of International Law*, Vol. 30/2, pp. 601-633, https://doi.org/10.1093/EJIL/CHZ022. [60]

Fiji, R. and IUCN (1992), *National Environment Strategy*. [10]

Folkersen, M., C. Fleming and S. Hasan (2019), "Depths of uncertainty for deep-sea policy and legislation", *Global Environmental Change*, Vol. 54, pp. 1-5, https://doi.org/10.1016/J.GLOENVCHA.2018.11.002. [61]

Goldberg, L. et al. (2020), "Global declines in human-driven mangrove loss", *Global Change Biology*, Vol. 26/10, pp. 5844-5855, https://doi.org/10.1111/GCB.15275. [39]

Govan, H. et al. (2008), "Locally managed marine areas: A guide to supporting community-based adaptive management", Locally-Managed Marine Area Network, https://agris.fao.org/agris-search/search.do?recordID=GB2013203237. [16]

Govan, H. et al. (2009), *Status and potential of locally-managed marine areas in the Pacific Island Region: meeting nature conservation and sustainable livelihood targets through wide-spread implementation of LMMAs*, https://www.researchgate.net/publication/46446261_Status_and_potential_of_locally-managed_marine_areas_in_the_Pacific_Island_Region_meeting_nature_conservation_and_sustainable_livelihood_targets_through_wide-spread_implementation_of_LMMAs (accessed on 14 April 2022). [17]

Hare, S. et al. (2021), *The western and central Pacific tuna fishery: 2020 overview and status of stocks.*. [30]

Herzig, P. (1999), "Economic potential of sea-floor massive sulphide deposits: Ancient and modern", *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences*, Vol. 357/1753, pp. 861-875, https://doi.org/10.1098/RSTA.1999.0355. [53]

IRP (2021), "Governing coastal resources: Implications for a sustainable blue economy", *Report of the International Resource Panel*, United Nations Environment Programme, Nairobi, https://researchportal.port.ac.uk/en/publications/governing-coastal-resources-implications-for-a-sustainable-blue-e. [26]

ISA (2021), *Small Island Developing States and the Law of the Sea*, https://isa.org.jm/files/files/documents/SIDs_and_the_law_of_the_sea.pdf (accessed on 14 April 2022). [54]

IUCN (2013), "Guidelines for Applying Protected Area Management Categories", webpage, http://www.iucn.org/pa_guidelines (accessed on 14 April 2022). [15]

Levett, R. and R. McNally (2003), *A Strategic Environmental Assessment of Fiji's Tourism Development Plan*, WWF, Gland, Switzerland. [64]

Makino, A. et al. (2013), "Integrated planning for land–sea ecosystem connectivity to protect coral reefs", *Biological Conservation*, Vol. 165, pp. 35-42, https://www.sciencedirect.com/science/article/pii/S0006320713001778. [28]

Mancini, L. and S. Sala (2018), "Social impact assessment in the mining sector: Review and comparison of indicators frameworks", *Resources Policy*, Vol. 57, pp. 98-111, https://doi.org/10.1016/J.RESOURPOL.2018.02.002. [56]

Ministry of Economy (2017), *5-Year & 20-Year National Development Plan*, Ministry of Economy, Republic of Fiji, Suva, https://www.fiji.gov.fj/getattachment/15b0ba03-825e-47f7-bf69-094ad33004dd/5-Year-20-Year-NATIONAL-DEVELOPMENT-PLAN.aspx (accessed on 14 April 2022). [33]

Ministry of Fisheries (2019), *Strategic Development Plan 2019 – 2029*, Ministry of Fisheries, Republic of Fiji, Suva, https://www.fisheries.gov.fj/images/STRATEGIC_PLAN_2019-_2029.pdf. [35]

Ministry of Infrastructure and Transport (2015), *Maritime Transport Policy*, Ministry of Infrastructure and Transport, Republic of Fiji, Suva. [49]

Ministry of Strategic Planning, National Development and Statistics (2014), *A Green Growth Framework for Fiji*, Ministry of Strategic Planning; National Development; Statistics, Republic of Fiji, Suva. [9]

Ocean Panel (2021), *100% Sustainable Management: An Introduction to Sustainable Ocean Plans*, report commissioned for High Level Panel on a Sustainable Ocean Economy. [4]

Ocean Panel (2020), *Integrated Ocean Management*, webpage, http://www.oceanpanel.org/blue-papers/integrated-ocean-management (accessed on 14 April 2022). [3]

O'Garra, T. (2012), "Economic valuation of a traditional fishing ground on the coral coast in Fiji", *Ocean & Coastal Management*, Vol. 56, pp. 44-55, https://doi.org/10.1016/J.OCECOAMAN.2011.09.012. [46]

Pakoa, K. et al. (2013), "The status of sea cucumber resources and fisheries management in Fiji", Secretariat of the Pacific Communiity, Noumea (New Caledonia), https://agris.fao.org/agris-search/search.do?recordID=XF2016002122. [36]

Republic of Fiji (2021), *National Ocean Policy 2020-2030*, Republic of Fiji, Suva, https://library.sprep.org/sites/default/files/2021-05/Fiji-National-Ocean-policy-2020-2030.pdf (accessed on 14 April 2022). [1]

Republic of Fiji (2020), *National Fisheries Policy*, Republic of Fiji, Suva, https://www.fisheries.gov.fj/images/National_Fisheries_Policy_draft_June_2020.pdf (accessed on 14 April 2022). [29]

Republic of Fiji (2017), *National Liquid Trade Waste Policy – For Discharges to Wastewater Systems Owned and Operated by Water Authority of Fiji*, Republic of Fiji, Suva. [25]

Republic of Fiji (2016), *Aquaculture Bill 2016*, Republic of Fiji, Suva. [34]

Republic of Fiji (2016), *Climate Change and Health Strategic Action Plan*, https://www.health.gov.fj/wp-content/uploads/2018/03/Climate-Change-and-Health-Strategic-Action-Plan-2016-2020.pdf. [22]

Republic of Fiji (2015), *Environment and Climate Adaptation Levy Act 2015*, Republic of Fiji, Suva. [23]

Republic of Fiji (2013), *Fiji National Energy Policy 2013-2020*, Republic of Fiji, Suva. [50]

Republic of Fiji (2013), *Maritime Transport Act*, Republic of Fiji, Suva, https://laws.gov.fj/Acts/DisplayAct/2799 (accessed on 14 April 2022). [48]

Republic of Fiji (2012), *Offshore Fisheries Management Decree*, Republic of Fiji, Suva. [6]

Republic of Fiji (2011), *National Solid Waste Management Strategy*, Republic of Fiji, Suva. [21]

Republic of Fiji (2008), *Litter Act 2008*, Republic of Fiji, Suva, https://www.laws.gov.fj/Acts/DisplayAct/725 (accessed on 14 April 2022). [19]

Republic of Fiji (2005), *Environment Management Act*, Republic of Fiji, Suva. [5]

Republic of Fiji (2005), *Sea Ports Management Act*, Republic of Fiji, Suva. [52]

Republic of Fiji (1992), *Forest Act 1992 – Laws of Fiji*, Republic of Fiji, Suva, https://www.laws.gov.fj/Acts/DisplayAct/636 (accessed on 14 April 2022). [41]

Republic of Fiji (1985), *Ports Authority of Fiji Act*, Republic of Fiji, Suva, http://www.paclii.org/fj/legis/consol_act_OK/paofa281/. [51]

Republic of Fiji (1977), *Marine Spaces Act*, Republic of Fiji, Suva. [20]

Republic of Fiji (1970), *Continental Shelf Act 1970 - Laws of Fiji*, https://www.laws.gov.fj/Acts/DisplayAct/752. [7]

Republic of Fiji (1965), *Mining Act 1965 – Laws of Fiji*, Republic of Fiji, Suva, https://www.laws.gov.fj/Acts/DisplayAct/3039 (accessed on 14 April 2022). [62]

Republic of Fiji (1945), *State Lands Act 1945 – Laws of Fiji*, Republic of Fiji, Suva, https://www.laws.gov.fj/Acts/DisplayAct/354 (accessed on 14 April 2022). [40]

Republic of Fiji (1944), *iTaukei Affairs Act 1944 – Laws of Fiji*, Republic of Fiji, Suva, https://laws.gov.fj/Acts/DisplayAct/3252 (accessed on 14 April 2022). [24]

Republic of Fiji (1941), *Fisheries Act 1941 - Laws of Fiji*, Republic of Fiji, Suva, https://www.laws.gov.fj/Acts/DisplayAct/628 (accessed on 14 April 2022). [14]

Republic of Fiji (1905), *iTaukei Lands Act 1905 – Laws of Fiji*, Republic of Fiji, Suva, https://www.laws.gov.fj/Acts/DisplayAct/400 (accessed on 14 April 2022). [13]

Republic of the Philippines (1992), *Republic Act No. 7586*, Republic of the Philippines, Manila, https://www.officialgazette.gov.ph/1992/06/01/republic-act-no-7586/. [12]

Spalding, M. (2010), *World Atlas of Mangroves*, Routledge, https://doi.org/10.4324/9781849776608/WORLD-ATLAS-MANGROVES-MARK-SPALDING. [38]

SPREP (2020), *Stocktake of Existing and Pipeline Waste Legislation: Republic of Fiji*, 16 March, Secretariat of the Pacific Regional Environment Programme, https://www.sprep.org/sites/default/files/documents/publications/waste-legislation-fiji.pdf. [18]

Stratmann, T. and et al (2018), "Abyssal plain faunal carbon flows remain depressed 26 years after a simulated deep-sea mining disturbance", *bg.copernicus.org*, https://bg.copernicus.org/articles/15/4131/2018/ (accessed on 14 April 2022). [59]

Sykes, H. et al. (2018), *Biophysically Special, Unique Maine Areas of Fiji*, MACBIO (GIZ, IUCN, SPREP), Wildlife Conservation Society and Fiji's Protected Area Committee (PAC), Suva, http://macbio-pacific.info/wp-content/uploads/2018/09/Fiji-SUMA-digital-small.pdf. [11]

Thia-Eng, C. (1993), "Essential elements of integrated coastal zone management", *Ocean & Coastal Management*, Vol. 21, pp. 81-108, http://seaknowledgebank.net/sites/default/files/essential-elements-of-integrated-coastal-zone-management_0.pdf. [27]

Underdal, A. (1980), "Integrated marine policy: What? Why? How?", *Marine Policy*, Vol. 4/3, pp. 159-169, https://doi.org/10.1016/0308-597X(80)90051-2. [2]

UNGA (1982), *United Nations Convention on the Law of the Sea*, United Nations General Assembly, New York. [63]

Van Dover, C. (2010), "Mining seafloor massive sulphides and biodiversity: What is at risk?", *ICES Journal of Marine Science*, Vol. 68/2, pp. 341-348, https://doi.org/10.1093/ICESJMS/FSQ086. [58]

Watling, D. (2013), *Mangrove Management Plan for Fiji 2013*, report commissioned by the National Mangrove Management Committee. [43]

Watling, D. (1985), *Mangrove Management Plan 1985.*. [42]

WCPFC (2000), *Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean*, Western & Central Pacific Fisheries Commission, https://www.wcpfc.int/doc/convention-conservation-and-management-highly-migratory-fish-stocks-western-and-central-pacific. [31]

Worlanyo, A. and L. Jiangfeng (2021), "Evaluating the environmental and economic impact of mining for post-mined land restoration and land-use: A review", *Journal of Environmental Management*, Vol. 279, p. 111623, https://doi.org/10.1016/J.JENVMAN.2020.111623. [55]

Note

[1] 'Tabu' is an expression in the local language and it stands for no take areas.

5 Financing for a sustainable ocean economy and blue recovery

As a small island developing state, Fiji faces specific challenges both in mobilising public finance and attracting private investments. This chapter provides a short comparative analysis of Fiji's government revenues. It discusses the innovative financing mechanisms, such as green bonds, blue bonds, and environmental taxes, which Fiji is using to mobilise more public and private finance. The chapter also provides original estimates of Official Development Assistance directed in support of the ocean economy of Fiji, detailing its scope, nature and destinations.

5.1. Public finance

As a small island developing state (SIDS), Fiji faces specific challenges to mobilise the public finance required for promoting a sustainable ocean economy and achieving sustainable development.

Compared to other developing countries, SIDS display on average more volatile domestic revenues, owing to the relatively narrow productive bases concentrated in sectors that are exposed to external fluctuations (OECD, 2018[1]). SIDS that rely on natural resource rents or tourism as their primary export sectors are especially prone to fluctuating domestic and tax revenues. This is also true for Fiji, whose domestic revenues strongly rely on tourism receipts, accounting for over 51% of exports (Table 5.1).

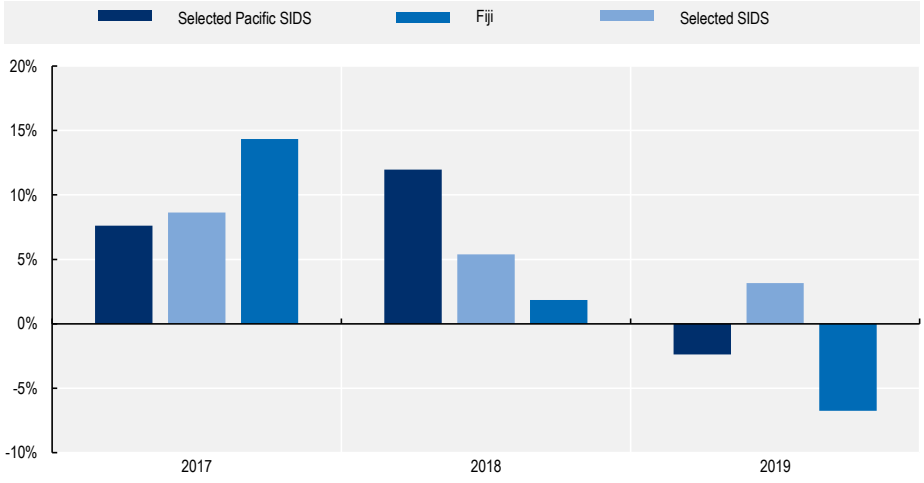
Besides limited domestic revenue generation, the high unit costs of public service provision, as well as severe climate events and natural disasters, have a significant effect on public finances. On average in Pacific SIDS, where small populations are often scattered across a multitude of islands, government expenses account for 29% of gross domestic product (GDP) compared to 22% in other developing countries (Horscroft, 2014[2]).

Severe climate events and natural disasters also tend to have heavy fiscal impacts. Financing humanitarian responses, recovery and reconstruction divert scarce public resources from essential social and economic expenditures, as well as from development investments. In Fiji, the average asset losses due to tropical cyclones and floods are estimated at more than FJD 500 million per year (USD 231 million), equivalent to 5% of Fiji's GDP (GGGI, 2019[3]).

The COVID-19 crisis, combined with the impacts from two tropical cyclones, has confirmed these fragilities and the issues linked to such domestic revenue volatility. In 2019, Fiji's total government revenue dropped by 7% relative to the previous year (Figure 5.1) whereas total revenue saw a slight increase in other SIDS. Fiji's supplement to the 2021/22 budget notes that tax revenue collections have been almost 50% lower compared to pre-COVID-19 levels.

Figure 5.1. Fiji's total government revenues plummet in 2019

Year to year variation of revenues (tax and non-tax)



Note: Selected SIDS include Belize, Cuba, Dominican Republic, Guyana, Jamaica, Saint Lucia, Maldives, Nauru, Papua New Guinea, Samoa, Solomon Islands, Vanuatu, Cabo Verde, Mauritius. Selected Pacific SIDS include Nauru, Papua New Guinea, Samoa, Solomon Islands and Vanuatu.
Source: Authors' representation based on OECD (2022[4]).

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Table 5.1. Tax-to-GDP ratio and tourism receipts, 2018

	Tax-to-GDP ratio	International tourism receipts (% exports)	Commodities (% merchandise exports)
Belize	29.7	45.46	80
Cabo Verde	21.2	54.41	68
Cook Islands	29.8	..	..
Cuba	42.3	..	64
Dominican Republic	13.2	37.45	43
Fiji	23.7	51.32	77
Guyana	27.4	1.75	85
Jamaica	27.8	53.38	92
Mauritius	20.4	38.69	47
Nauru	35.4	5.14	50
Papua New Guinea	12.1	0.15	96
Saint Lucia	20.0	81.27	60
Samoa	25.8	62.57	48
Solomon Islands	30.4	13.52	98
Vanuatu	18.0	62.84	58

Source: OECD (2022[4]).

Despite these challenges, Fiji has improved its domestic revenues and developed innovative financing instruments for promoting sustainable green and blue investments. While susceptible to year-on-year variations, Fiji's domestic revenues (tax and non-tax) overall more than doubled between 2008 and 2019, from FDJ 3.044 billion to FDJ 1.245 billion (OECD, 2022[4]). Both tax and non-tax revenues have increased over 2008-19, with tax revenues representing the bulk of domestic revenues (87% in 2019). Fiji has also stepped up efforts to develop a suite of innovative fiscal instruments to increase financing for climate action. These include an environment and climate levy such as the Environment and Climate Adaptation Levy (ECAL) and Fiji's first sovereign green bond. Fiji continues to show strong leadership for the development of innovative products to mobilise resources for sustainable investments. It is also developing its first sovereign blue bond. These instruments are described below.

Fiji introduced ECAL to mobilise funding for environmental protection, carbon footprint reduction and climate change adaptation. This consortium of taxes on prescribed services, items and income was created to finance selected projects in the National Budget. ECAL's five sources are listed in Table 5.2; prescribed services, which predominantly includes tourism-related businesses, represented the biggest source of ECAL's revenues. Interviews revealed criticism of ECAL, mostly from tourism operators who argued it does not target the most polluting sectors (Table 5.2). Criticism was in part related to the communications around the use of revenues collected. Interviewees noted the climate adaptation and resilience benefits resulting from ECAL-funded investments were not always clear. Nevertheless, the tax seemed aligned with similar approaches exploring the potential to harness tourism sector revenues for climate (and possibly ocean) action. A recent example is Mexico's parametric coral reef insurance financed by the Quintana Roo State through government taxes collected from the tourism industry (OECD, 2020[5]). Between 2017 and 2019, most ECAL funds targeted infrastructure development (60%) and rehabilitation (27.5%) following Tropical Cyclone Winston (Table 5.3). However, the 2021/22 revised budget removes the ECAL on prescribed services, personal income, white goods, motor vehicles, superyacht charters and plastics.[1] The ECAL on prescribed services was incorporated into VAT. The ECAL on plastic bags was renamed as "plastic bag levy" and ECAL on super yachts renamed as "superyacht charter fee".

Table 5.2. Environment and climate adaptation levy (ECAL)

FJD by levy source in 2018

	Aug-Oct Q1	Nov-Jan Q2	Feb-Apr Q3	Year to date Aug-Apr
10% ECAL on prescribed services	45 546 742	38 228 997	26 595 732	110 371 472
10% tax on imports of luxury vehicles with engine capacity exceeding 3 000 cc	46 202	40 516	40 278	126 997
20 cents levy on plastic bags	1 699 874	2 027 802	1 799 736	5 527 412
Miscellaneous – inclusive of 10% ECAL on super yachts	323 159	40 000	-	363 159
10% income tax on chargeable income of more than FJD 270 000	963 329	1 390 507	966 376	3 320 212

Source: Government of Fiji (2019[6]).

Table 5.3. ECAL use by thematic area

Infrastructure development	60.00%
Tropical Cyclone Winston rehabilitation	27.50%
Agricultural development	5.00%
Sustainable resource management	2.00%
Disaster relief and response	1.00%
Meteorology services	1.00%
Rural development	1.00%
Urban development	1.00%
Energy conservation	1.00%
Environmental conservation	0.50%

Source: Government of Fiji (2019[6]).

In November 2017, Fiji became the first developing country in the world to issue a green bond. Fiji is increasingly recognised as a global climate advocacy leader and a pioneer of innovative public finance instruments to support its sustainability commitments. It issued its first sovereign green bond in 2017, which totalled FJD 100 million (about USD 46.2 million). Its first tranche drew unprecedented demand from investors and was oversubscribed by more than double that amount; all bond issuances were oversubscribed (Ministry of Economy, 2019[7]). Approximately USD 75.4 million worth of bids were submitted and bonds were split into two tenors: 5 years at 4% coupon and 13 years at 6.3% coupon (Ministry of Economy, 2019[7]). The bond created a new way to mobilise finance for climate-resilient development. It also generated a market for private capital investors seeking opportunities that support climate resilience and adaptation. The green bond also tapped into a growing global market; internationally, issuance of green, social, sustainability and sustainability-linked bonds reached USD 600 billion in 2020 (Environmental Finance, 2021[8]). However, without any credit enhancement, the green bond was more expensive for Fiji than a conventional issuance. The international development co-operation supported Fiji's green bond through technical assistance.

In 2022, Fiji plans to issue its first blue bond. The goal is to raise USD 50 million targeting sustainable blue economy projects that create jobs and help protect Fiji's ocean and biodiversity. The issuance will focus on raising capital market finance to support projects in four priority sectors: i) greening the shipping sector; ii) sustainable fisheries; iii) blue innovation financing; and iv) sustainable waste management. In

parallel, the Building Back Blue initiative, a partnership between the United Nations Development Programme (UNDP), UN Capital Development Fund initiatives and "Drua Incubator" (Box 5.1) is developing a pipeline of investment-ready blue economy opportunities.

5.2. Private finance

More than other countries, SIDS face remarkable challenges in accessing private finance. These trends are due to the formidable barriers to access international capital markets through bonds, other securities or debt caused by the high risk perception of investors and the limited size of possible transactions. SIDS also often have limited appeal to foreign investors due to their remoteness from markets and shipping lanes, and their poor penetration in global value chains. Finally, many SIDS, especially in the Pacific, lack the creditworthiness to raise funds in capital markets. Many others, especially in the Caribbean, have recently experienced a deterioration in international capital market ratings due to their large debt burdens.

Among Pacific SIDS, investors tend to be risk averse, reflecting historically limited investor education and strong emphasis on safeguarding capital. Domestic private investors in the Pacific region were found to be risk averse and with limited knowledge of alternative investments (Emose and UN.ESCAP, 2021[9]). Moreover, capital controls limit the ability of Pacific investors to transfer domestic savings into offshore currencies. As a result, they tend to prefer local currency investments. Given the characteristics of regional financial markets, institutional investors would most probably respond to well-structured fixed income products such as sustainability bonds.

Foreign direct investment (FDI) is volatile and concentrated in few sectors. Foreign investments in SIDS are low and often weigh lightly on their overall external financing. In Fiji, FDI flows represent a large portion of external finance (Figure 5.2). However, FDI remain half of the average figure for ASEAN (USD 469 million for Fiji and at 3.2% of average GDP for the region pre-pandemic in 2018). Australia accounted for the bigger share of FDI in Fiji (49%) in 2019 (IMF, 2021[10]). However, Fiji's FDI is volatile and mostly concentrated on high-end tourism, followed by the financial sector and manufacturing. Under the 1999 Investment Act, foreign investors interested in doing business in Fiji must apply for a Foreign Investment Registration Certificate.[2] Additionally, foreign investors must ensure that investment activity does not fall under the reserved and restricted activities, i.e. activities reserved for Fiji citizens. The new Investment Act, published on 3 June 2021, replaces the Foreign Investment Act of 1999. It introduces a broader range of treatment and protection guarantees for foreign investors. It also removes the requirement to apply for a Foreign Investor Registration Certificate and imposes the same reporting obligations on foreign and local investors (UNCTAD, 2021[11]).

Local, regional, bilateral and multilateral organisations are working to improve the investment climate, address investment barriers and risks, and stimulate private sector development in Fiji. However, FDI remains under potential. Aside from FDI, unlocking and deploying the myriad public and private funds targeted at sustainable (blue and green) development initiatives is often constrained by capacity challenges and a dearth of readily investable projects. Overcoming these constraints will require policy commitment, grant or concessional financing to de-risk and eventually leverage private investment. Fiji's largest investor – Fiji National Provident Fund – is one major option. However, it will need clearer evidence for a return on investment before stepping into this space. Building capacity and preparing investable projects are not straightforward, requiring long-term dedication and resources. This is evident from existing initiatives working towards these goals in Fiji and the region.

Box 5.1. Drua Incubator: The Pacific Climate Finance and Insurance Incubator

Developing tailored insurance products for vulnerable and low-income households

Launched in 2017 within the Ministry of Economy, the Drua Incubator aims to guide the development of affordable, durable and scalable financial solutions to help mitigate growing climate and disaster risks, acting as the Pacific's Climate Finance and Insurance Incubator. By bringing together leaders in finance, investment and insurance, it is helping develop and "incubate" transformational financial products that meet the specific requirements of Pacific SIDS. Luxemburg's government provided initial funding of EUR 1 million. The Asian Development Bank (ADB) is another financial partner of the Drua.

The stringent compliance requirements of existing products make it too expensive for Fiji and other Pacific nations to be properly insured. By developing innovative financial solutions, the Drua Incubator wants to increase access to affordable climate change insurance for Pacific Island countries and communities. Developing pilot insurance products and a national crisis and disaster risk financing strategy are among the solutions provided by the Drua.

Helping attract private sector climate finance to the Pacific

The Drua Incubator will further aim to develop partnerships to help encourage information exchange and promote financial innovation in the Pacific region. Under the Drua framework, actors can share knowledge and co-ordinate initiatives on risk financing. Under the responsibility of the Ministry of Economy, the Drua will receive institutional support from the COP 23 Presidency Secretariat based in Suva, including special advisers from a regulatory and legislative point of view. The incubator has been working closely with the Food and Agriculture Organization of the United Nations and the Forest Stewardship Council on implementing an agricultural crop loss insurance pilot scheme.

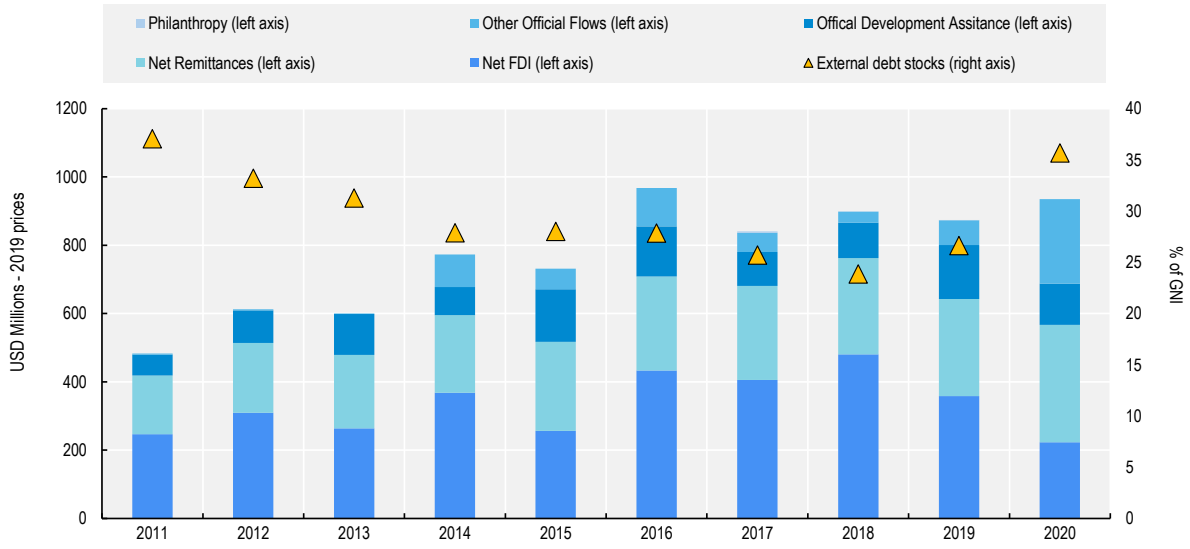
Source: Authors elaborations based different sources, including materials shared by the Ministry of Economy, COP23 (2017[12]), Fiji (2018[13]).

5.3. International development finance flows

Official development assistance (ODA) represents an important part of Fiji's external finance, accounting for 19% of external finance flows[3] in 2015-19 (Figure 5.2). Net FDI flows account for a larger share (49%) over the same period, followed by remittances (32%). In 2019, Fiji received USD 173.7 million of net ODA, representing 2.7% of the country's gross national income (GNI). ODA has been a fairly stable external flow to Fiji, averaging USD 85.4 million between 2010-14 and USD 138.2 million between 2015-19 – a 60% increase.[4]

Personal remittances have reached record levels during the COVID-19 pandemic. Personal remittances represent a stable source of inflows. Between 2010 and 2020, personal remittances averaged 4.9% of Fiji's GDP (ADB, 2021[14]). With almost one-quarter of its population living abroad, Fiji has become the biggest recipient of remittances in the Pacific in response to the pandemic, receiving USD 295.2 million in 2019 and USD 355.4 million in 2020, according to the World Bank.[5] Unlike in many other countries, remittance inflows in Fiji peaked following COVID-19's outbreak as Fijians living abroad increased assistance to their families back home (Reserve Bank of Fiji, 2020[15]).

Figure 5.2. Fiji's official development assistance compared to other external flows



Note: External debt stock accounts for the sum of public, publicly guaranteed and private nonguaranteed long-term debt, use of credit and short-term debt of the International Monetary Fund. Personal remittances refer to the net value, i.e. discounted of remittances outflows. Official Development Assistance is defined as government aid that promotes and specifically targets the economic development and welfare of developing countries. Other Official Flows include grants to developing countries for representational or essentially commercial purposes; official bilateral transactions intended to promote development, but having a grant element of less than 25%; and, official bilateral transactions, whatever their grant element, that are primarily export-facilitating in purpose. Data are in USD 2019 prices. For FDI and remittances series, values were deflated using price index (CPI) in USD also extracted from the World Bank Development Indicators.
Source: Authors' calculations based on the OECD (2022[16]) and World Bank (2022[17]).

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The COVID crisis had strong effects on Fiji's external debt stock, which reached its lowest level in 2018 (Figure 5.2). Relative to 2018, the stock of external debt as a percentage of Fiji's GNI increased by 50% in 2020 (from 24% to 36%). The main holder of Fiji's external debt is the Asian Development Bank (38.5%), followed by the World Bank Group (26.8%), EXIM China (18.4%), the Japan International Cooperation Agency (12.0%), Asian Infrastructure Investment Bank (4.3%) and the International Fund for Agricultural Development (0.03%) (Government of Fiji, 2021[18]). Domestically, debt is concentrated within the Fijian National Provident Fund, which holds 70.8% of government bonds. In addition, contingent liabilities have surged during the pandemic, posing a quasi-fiscal risk (IMF, 2021[19]). Despite the increase in external debt, most of Fiji's total debt remains denominated in domestic currency with long term maturity and mainly concessional. Meaning that it is not liable to refinancing risks and changes in short-term lending conditions. In addition, the country disposes of high amounts of foreign assets, which contributes to mitigate balance sheet risks.

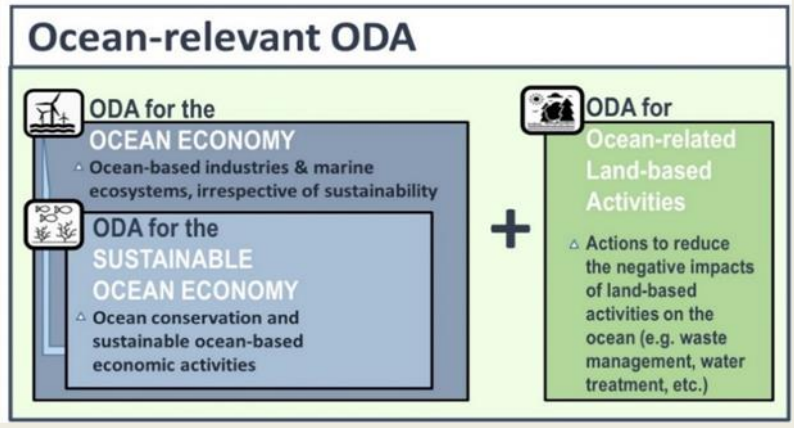
Box 5.2. Indicators and definitions used to analyse ocean-related official development assistance

Evidence on global finance for the ocean from its various sources – private, public, domestic and international – remains scarce and scattered. It is not possible to have a comprehensive view of how much finance reaches ocean-based sectors and what percentage can be considered sustainable. To help fill this gap and as part of the Sustainable Ocean for All initiative, the OECD has begun to quantify and track global development finance for the ocean. To that end, it details the scope, sources and destinations of this finance, providing estimates of the share that is sustainable. Development finance estimates are also produced for funding towards land-based activities that reduce negative impacts on the ocean (e.g. waste management and water treatment). The tracking of ocean-relevant official development assistance (ODA)[6] is based on the statistical data made available by the OECD DAC Creditor Reporting System, which provides a unique and comprehensive source of activity-level development finance. As there is no marker or immediate way to retrieve data on ODA for the ocean, a specific methodology was developed to generate the first official estimates of ocean-relevant ODA.

Ocean-relevant ODA estimates are organised around three key indicators:

- **ODA for the ocean economy:** This is ODA in support of ocean-based industries and marine ecosystems, irrespective of whether the support explicitly considers sustainability. For instance, fisheries projects with no specific focus on sustainable development would be included, as would projects in support of offshore oil and gas.
- **ODA for the sustainable ocean economy**: This is a subset of ODA for the ocean economy. It identifies ocean conservation activities, as well as support for ocean-based industries that integrates sustainability concerns. For instance, projects in support of sustainable coastal tourism, greening of the shipping sector and sustainable fisheries would be included, as well as projects on mangroves restoration and marine conservation.
- **ODA for reducing ocean pollution from land:** This indicator captures land-based activities that reduce negative impacts and/or have a positive impact on ocean, such as water treatment and waste management projects. This indicator is included in recognition of the strong interrelation between land-based and marine activities and the fact that most ocean pollution originates from land-based activities.

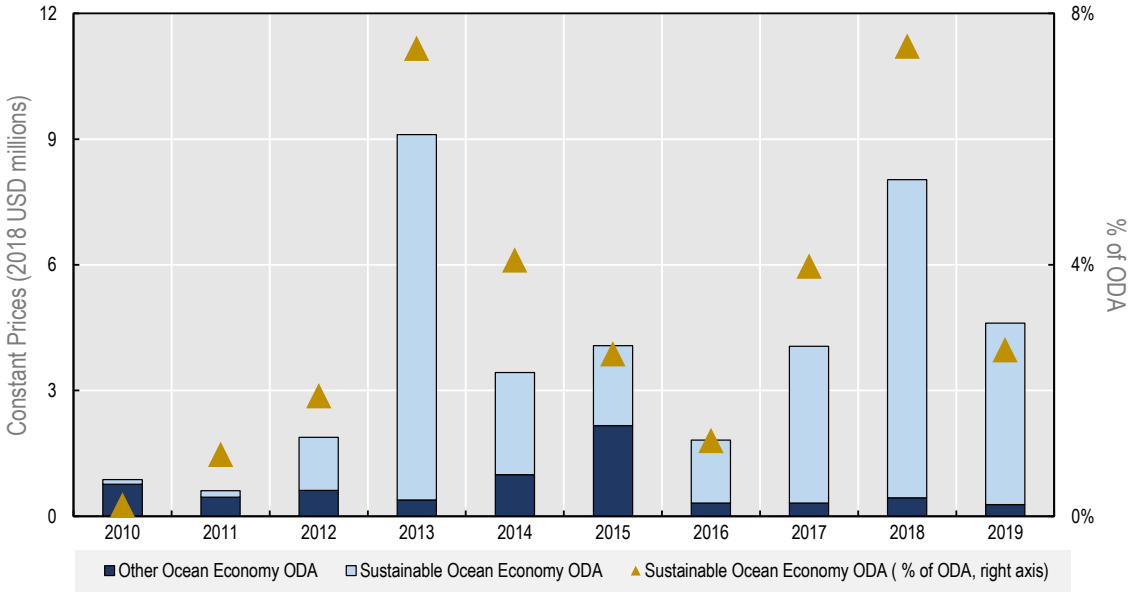
Infographic 5.1. Ocean-relevant ODA indicators



ODA targeting Fiji's ocean economy is still small, totalling USD 4.3 million in 2019 and representing only 2.65% of total ODA received that year (Figure 5.3). This compares to 6.5% for all SIDS and 1.4% globally. ODA for the ocean economy has also been fairly volatile, with significant year-on-year variations in 2010-19. Ocean economy ODA to Fiji peaked in 2013 and reached a second high in 2018 (Figure 5.3). In 2013, 80% of Fiji's ocean economy ODA was due to a single record contribution from the Global Environment Facility (GEF), extended as part of the Pacific Ridge to Reef project. In 2018, Korea provided 40% of ocean economy ODA committed to Fiji (USD 2.69 million). It aimed to help Fiji improve management of its marine waters through a hydrographic survey vessel.

Unlike for many other countries, most of ocean economy ODA to Fiji incorporates sustainability concerns. In 2017-19, 94% of the ocean economy ODA to Fiji explicitly integrated marine conservation and/or sustainable economic activities relating to the ocean (i.e. "Sustainable Ocean Economy ODA"). This figure compares to 71% in other SIDS and to 59% globally, over the same period.

Figure 5.3. ODA targeting Fiji's ocean economy is still small and erratic



Source: Authors' calculations developed as part of the OECD Sustainable Ocean for All Initiative, based on the OECD Creditor Reporting System (2022[16]) and OECD Data platform on the Ocean (2022[20]).

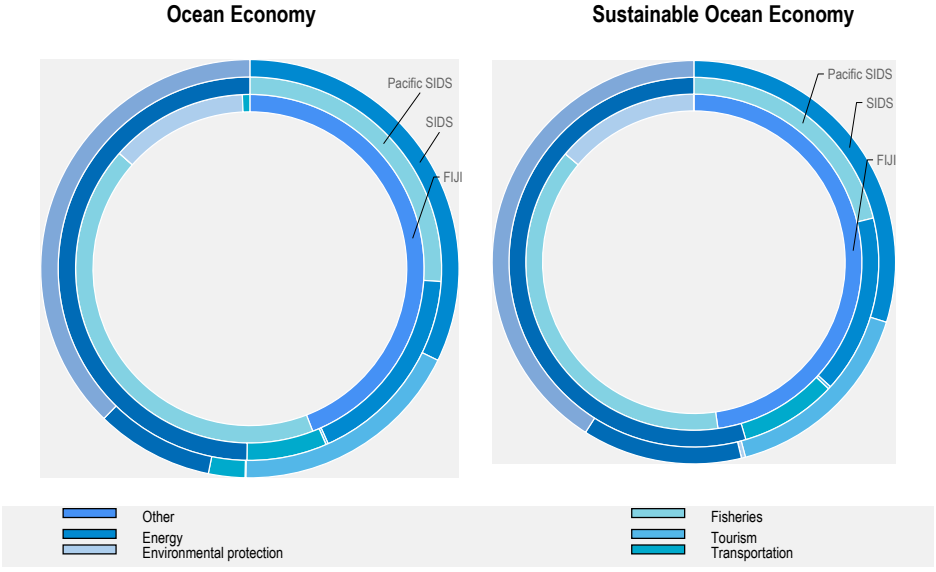
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In Fiji, ODA to the ocean economy largely focuses on fisheries (42% in 2017-19), compared to an average of less than 20%for SIDS and Pacific SIDS (Figure 5.4, left panel). A large share of Fiji's ocean economy ODA is multisector ("Other"), targeting mainly environmental research and management. Fiji receives more multisectoral ODA than SIDS (30%) and Pacific SIDS (21%).When looking at the sustainable ocean economy ODA, the share dedicated to sustainable fisheries becomes slightly smaller at 38% of the total sustainable ocean economy ODA (Figure 5.4, right panel). Marine protection represents an important share of Fiji's sustainable ocean economy ODA, at 14% in 2017-19. This share is larger than in other SIDS and Pacific SIDS, where the share of sustainable ocean economy ODA for marine protection stands at 13% and 9% respectively.

Despite the urgent need to upgrade Fiji's maritime transport fleet, maritime transport receives limited attention by development co-operation providers. Maritime transportation represented only 1% of total ocean economy ODA in Fiji between 2017 and 2019 (Figure 5.4). This contrasts with other SIDS and Pacific SIDS, where maritime transport represents a significantly higher share of ocean economy ODA, at 38% and 51%, respectively. Among Pacific SIDS, maritime transportation (including shipping) relies on old vessels that are replaced by other old vessels, which makes the industry highly polluting and fuel-intensive. Additionally, owing to elevated costs of acquiring new fleets for most Pacific SIDS, the inter-island transport system is underdeveloped and incapable of meeting demand (ADB, 2007[21]). One study found 59% of domestic vessels from Kiribati, Vanuatu, Fiji, Solomon Islands, Samoa and Marshall Islands of Pacific are over 20 years old and 38% over 30 years old (SPC, 2019[22]).

Figure 5.4. Composition of ocean economy ODA and of sustainable ocean economy ODA in Fiji– average 2017 to 2019

Average ODA targeted at Ocean Economy and Sustainable Ocean Economy in 2017-19



Note: Pacific SIDS include only ODA eligible countries: Fiji, Marshall Islands, Nauru, Papua New Guinea, Solomon Islands, Tonga, Vanuatu, Kiribati, Micronesia, Samoa and Tuvalu. Values correspond to the average committed ODA in USD 2018 prices targeted at each sector for 2017-19.

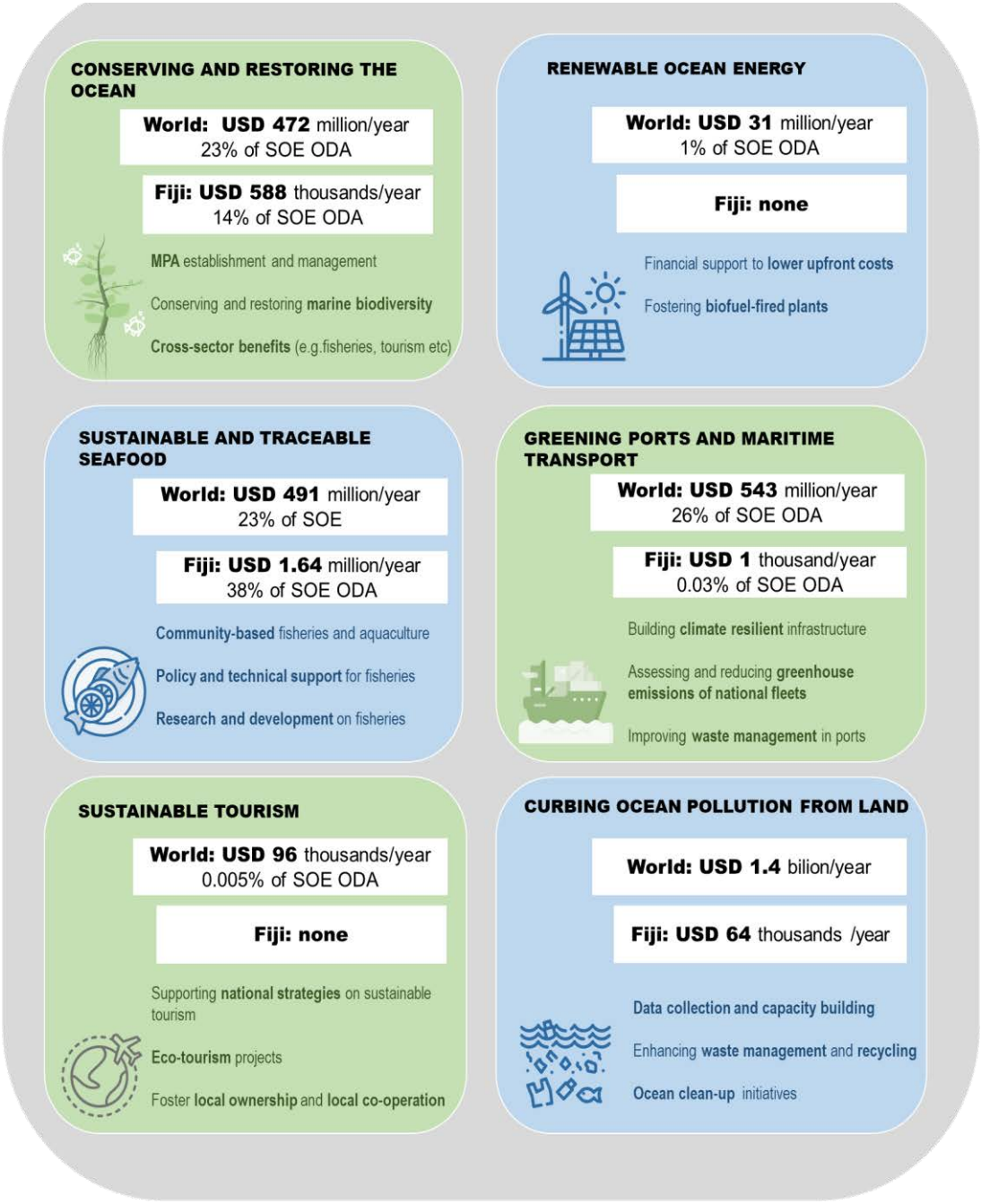
Source: Authors' calculations developed as part of the OECD Sustainable Ocean for All Initiative, based on the OECD Creditor Reporting System (2022[16]) and OECD Data platform on the Ocean (2022[20]).

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A comparison between the allocation of ODA globally and in Fiji with regards to six main areas of the sustainable ocean economy reveals significant differences but also similarities (infographic 5.1). These six areas are: conserving and restoring the ocean; renewable ocean energy; sustainable and traceable seafood; greening ports and maritime transport; sustainable tourism; curbing ocean pollution from land. Sustainable ocean economy ODA in Fiji focused more on sustainable and traceable seafood (38%) compared to the global average (23%), but significantly less on conserving and restoring the ocean (14% in Fiji vs 23% at the global level). ODA focuses on promoting renewable ocean energy to a limited extent. In 2017-19, the sector accounted for 1% of sustainable ocean ODA globally and in Fiji no resources

were allocated to this sector. ODA investments in sustainable tourism are even smaller, amounting to only USD 96,000 on average per year globally in 2017-19, and with no such ODA investments in Fiji. Over the same period, greening ports and maritime transport represented 26% of global sustainable ocean economy ODA, but only 0.03% in Fiji.

Infographic 5.2. How is development co-operation helping enhance sustainability of the ocean economy in Fiji and in the world?



Note: Values correspond to 2017-19 averages. SOE ODA stands for Official Development Assistance targeted at the Sustainable Ocean Economy.

Source: Source: Source: Authors' calculations developed as part of the OECD Sustainable Ocean for All Initiative, based on the OECD Creditor Reporting System (2022[16]) and OECD Data platform on the Ocean (2022[20]).

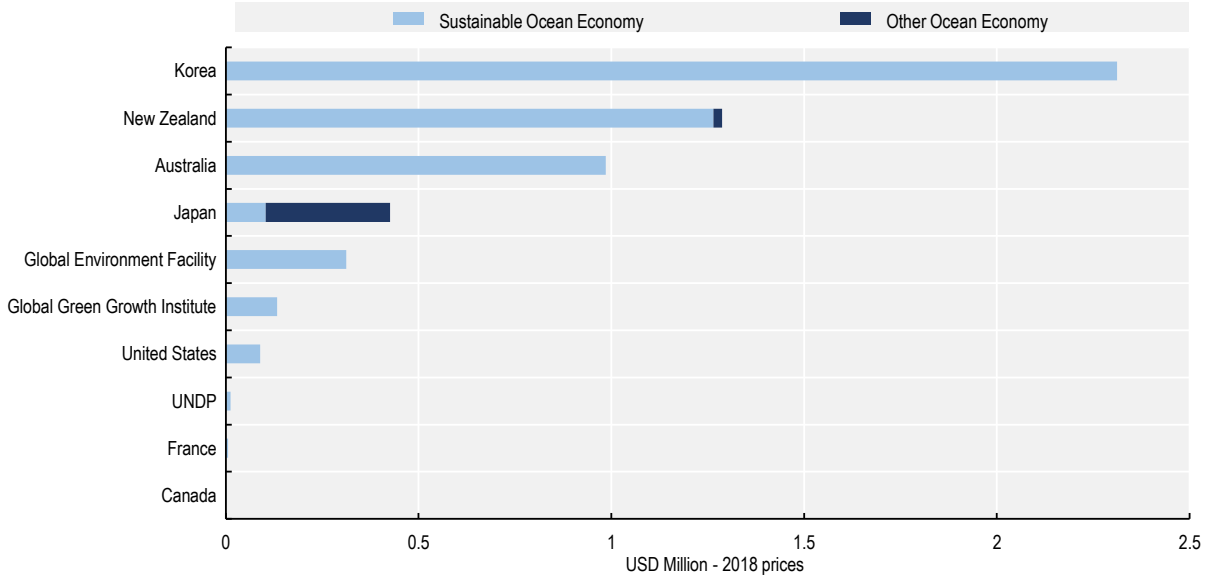
Eight development co-operation providers support a sustainable ocean economy in Fiji. In 2010, only four donors extended sustainable ocean economy ODA to Fiji, but this number doubled in 2019. However, the concentration of ocean economy ODA is still high, as in 2019 90% of total ocean economy ODA came from three providers. Korea, New Zealand and Australia were the top providers of development co-operation to Fiji's ocean economy over 2017-19 (Figure 5.5). Development co-operation providers focus on sustainability to different extents when providing ocean economy ODA. Between 2017 and 2019, Korea and Australia have focused 100% of their ocean economy contributions on sustainability.

Different providers of development co-operation focus their support on different segments of Fiji's ocean economy. Korea has been the main contributor to ocean-related disaster prevention and preparedness in 2017-19 (Figure 5.6). Four main donors targeted fisheries in 2017-19 with New Zealand and Japan accounting for more than half of the ocean ODA in the sector. Six donors are targeting marine protection in Fiji. Australia, France, the GEF, the Global Green Growth Institute, UNDP and the United States have been helping Fiji preserve its ecosystems. Among the main initiatives, the partner support a Ridge to Reef approach to improve climate resilience, and scholarships to support maritime research and coastal management systems.

The Blue Prosperity programme, formalised in 2021 between Fiji and the Waitt Institute, aims at supporting inclusion, equity and traditional knowledge. The goal is to improve long-term economic stability, livelihoods and ocean ecosystems by protecting 30% of Fiji's waters from 0-200 nautical miles and supporting ocean management in three core areas: marine spatial planning, blue economy and sustainable fisheries.

Figure 5.5. Main partners target sustainability of the ocean economy to different extents

Constant USD million, 2017-19 average

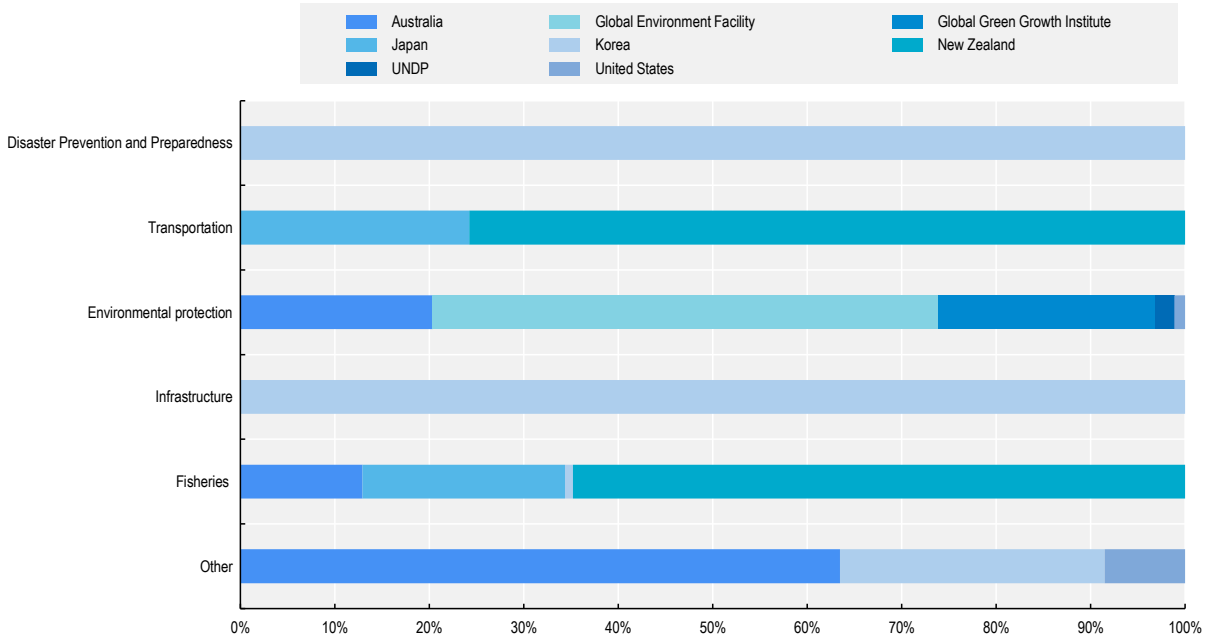


Note: Values refer to the average of total committed value donor in USD 2018 prices over 2017-19.
Source: Authors' calculations developed as part of the OECD Sustainable Ocean for All Initiative, based on the OECD Creditor Reporting System (2022[16]) and OECD Data platform on the Ocean (2022[20]).

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Figure 5.6. Mapping the ODA engagement of development co-operation providers across the sectors of Fiji's Sustainable Ocean Economy – 2017 to 2019

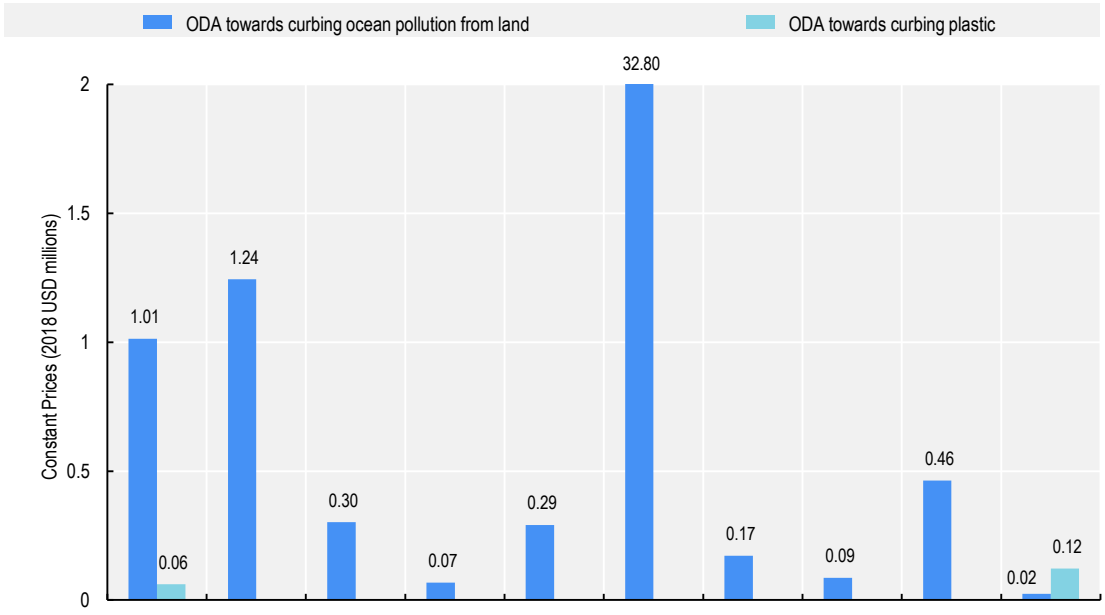
Average of commitments between 2017 and 2019, constant prices



Note: Values do not reflect total ODA figures but rather total ocean ODA figures. Values correspond to the average ocean economy ODA committed by each donor in USD 2018 prices targeted at specific sectors for 2017-19. Each bar represents the total committed in the sector.
Source: Authors' calculations developed as part of the OECD Sustainable Ocean for All Initiative, based on the OECD Creditor Reporting System (2022[16]) and OECD Data platform on the Ocean (2022[20]).

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Figure 5.7. ODA targeting plastics and pollution from land is still small and volatile



Source: Authors' calculations developed as part of the OECD Sustainable Ocean for All Initiative, based on the OECD Creditor Reporting System (2022[16]) and OECD Data platform on the Ocean (2022[20]).

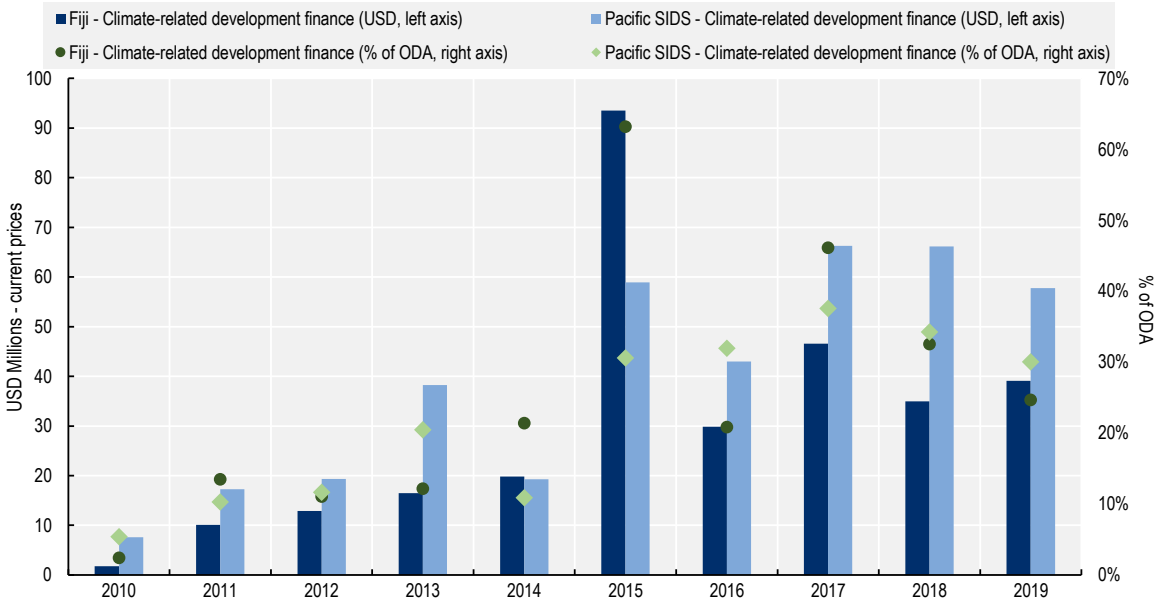
StatLink https://stat.link/tdcare

ODA towards plastics and solid waste management is still small in Fiji. Like ODA targeting ocean pollution from land, plastics and solid waste management, ODA has been volatile in the past decade (Figure 5.7). Fiji and most Pacific SIDS acknowledge waste management as a pressing issue. Improper waste management can have spillover effects to the environment, affecting local communities, health and food security, and key economic activities such as tourism and trade. In Fiji, improper treatment of plastics and solid waste in general result in waste thrown in open dumpsites, or illegally disposed of in the sea or on unused land, in the streets or being burnt in piles in the backyard. Yet, plastic and solid waste management represented less than 1% of total ODA over the last decade. Australia, Japan and the United States were responsible for the contributions targeting plastics management in Fiji. ODA curbing pollution from land spiked in 2015 lead by the Green Climate Fund's Urban Water Supply and Wastewater Management Project in Fiji.

The share of climate-related development finance in total ODA is larger in Fiji than in most Pacific SIDS (Figure 5.8). The average amount of climate-related development finance received by Fiji in 2017-2019 was equal to USD 39.8 million, more than twice the average amount received in 2011-2013. Most of Fiji's climate- related development finance is concessional and developmental, with Australia, Japan, Korea and New Zealand as the most frequent providers for both Fiji and Pacific SIDS. Between 2011 and 2019, Fiji's climate- related development finance oscillated greatly, from 11% to 63% of total committed ODA. Conversely, for most Pacific SIDS this oscillation stayed between 11% and 36% (Figure 5.8). The increase in 2015 is explained by contributions from the World Bank, the Global Climate Fund, Australia and Sweden that targeted mainly transport and storage, education, water supply and emergency response. In 2018, as identified by Fiji's Climate Finance Snapshot, the Global Green Growth Institute and the Fijian Ministry of Infrastructure and Transport have partnered to promote electrification of Fiji's vehicle fleet and implement infrastructure requirements for the transition. There is room for improvement in the use of climate-related development finance towards the ocean economy, especially regarding the accurate assessment of funding needed to enhance resilience in ocean sectors (Ministry of the Economy, 2019[23]).

Figure 5.8. Fiji attracts relatively more climate-related development finance as a share of total ODA than other Pacific SIDS

Climate-related development finance, recipient's perspective



Note: The average for Pacific SIDS includes the ten ODA eligible countries: Marshall Islands, Nauru, Papua New Guinea, Solomon Islands, Tonga, Vanuatu, Kiribati, Micronesia, Samoa and Tuvalu. ODA and climate-related development finance amounts are reported in 2019 prices.
Source: Authors' calculation based on OECD (2022[24]).

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References

ADB (2021), *Fiji: Country Classification*, Asian Development Bank, Mandaluyong, The Philippines. [14]

ADB, A. (2007), *Oceanic Voyages: Shipping in the Pacific*, Pacific Studies Series, Asian Development Bank, Mandaluyong, The Philippines, http://www.adb.org. [21]

COP23 (2017), *Initiative to Develop Pacific Finance and Insurance Products Launched with €1 Million Support from Luxembourg*, https://cop23.com.fj/initiative-develop-pacific-finance-insurance-products-launched-e1-million-support-luxembourg/ (accessed on 19 May 2020). [12]

Emose, G. and UN.ESCAP (2021), "Sustainability bond for the Pacific feasibility study", *MFDP Working Paper Series*, UN.ESCAP, https://hdl.handle.net/20.500.12870/3432. [9]

Environmental Finance (2021), *Sustainable Bonds Insights*, Environmental Finance. [8]

Fiji (2018), "Climate Resilience & Agricultureal Risk", *Workshop Report*, https://www.innov4agpacific.net/wp-content/uploads/2018/08/Fiji-Forum_Weather-Risk-Insurance_Workshop-Report_Simon-Cole_WEB-2.pdf. [13]

GGGI (2019), *Project Reference Profiles – Fiji(FJ07) Green Growth Governance – Enhancing Access to Climate Finance in Fiji*, webpage, https://gggi.org/project/project-reference-profiles-fijifj07-green-growth-governance-enhancing-access-to-climate-finance-in-fiji/ (accessed on 25 April 2022). [3]

Government of Fiji (2021), *Fijian Government 2020/2021 Annual Debt Report*, Government of Fiji, Suva, https://www.economy.gov.fj/images/Resources/DebtReport/2020-2021_Annual_Debt_Report.pdf (accessed on 8 February 2022). [18]

Government of Fiji (2019), *ECAL in Action: How your environment and climate adaptation levy is building a better, stronger Fiji*, June, Government of Fiji, Suva, https://www.fiji.gov.fj/getattachment/e71b8d61-ce72-48fc-bca2-eeeff2d8739b/Environment-Climate-Adaptation-Levy.aspx (accessed on 11 March 2022). [6]

Horscroft, V. (2014), "Public sectors in the Pacific Islands: Are they 'too big' and do they 'crowd out' the private sector?", *Policy Research Technical Papers*, World Bank Group, Washington, DC, https://doi.org/10.1596/1813-9450-7102. [2]

IMF (2021), *Coordinated Direct Investment Survey*, (database), https://data.imf.org/?sk=40313609-F037-48C1-84B1-E1F1CE54D6D5&sId=1482331048410 (accessed on 24 March 2022). [10]

IMF (2021), *IMF Country Report No. 21/257*, International Monetary Fund, Washington, DC. [19]

IOM (2020), *Migration in the Republic of Fiji: A Country Profile 2020*. [26]

Ministry of Economy (2019), *The Fiji Sovereign Green Bond – 2019 update*, MInistry of Economy, Suva, https://www.rbf.gov.fj/wp-content/uploads/2020/03/Fiji-Sovereign-Green-Bond-Impact-Report-2019.pdf (accessed on 16 February 2022). [7]

Ministry of the Economy (2019), *Fiji Climate Finance Snapshot 2016-2019*, Ministry of Economy, Suva. [23]

OECD (2022), *Climate Change: OECD DAC External Development Finance Statistics*, https://www.oecd.org/dac/financing-sustainable-development/development-finance-topics/climate-change.htm (accessed on 19 May 2022). [24]

OECD (2022), *Creditor Reporting System (CRS)*, https://stats.oecd.org/Index.aspx?DataSetCode=crs1 (accessed on 19 May 2022). [16]

OECD (2022), *Data Platform on Development Finance for the Sustainable Ocean Economy*, https://oecd-main.shinyapps.io/ocean/ (accessed on 19 May 2022). [20]

OECD (2022), *Global Revenue Statistics Database*, (database), https://www.oecd.org/tax/tax-policy/global-revenue-statistics-database.htm#:~:text=The%20Global%20Revenue%20Statistics%20Database,110%20countries%20from%201990%20onwards. (accessed on 15 April 2022). [4]

OECD (2021), *Revenue Statistics 2021: The Initial Impact of COVID-19 on OECD Tax Revenues*, OECD Publishing, Paris, https://www.oecd.org/tax/revenue-statistics-2522770x.htm (accessed on 15 April 2022). [25]

OECD (2020), *Sustainable Ocean for All: Harnessing the Benefits of Sustainable Ocean Economies for Developing Countries*, The Development Dimension, OECD Publishing, Paris, https://doi.org/10.1787/bede6513-en. [5]

OECD (2018), *Making Development Co-operation Work for Small Island Developing States*, OECD Publishing, Paris, https://doi.org/10.1787/9789264287648-en. [1]

OECD (n.d.), *Official Development Assistance (ODA)*, https://www.oecd.org/dac/financing-sustainable-development/development-finance-standards/official-development-assistance.htm (accessed on 20 May 2022). [27]

Reserve Bank of Fiji (2020), *International remittances and Fiji's unsung heroes abroad 24 December*, webpage, https://www.rbf.gov.fj/international-remittances-and-fijis-unsung-heroes-abroad-24-december-2020/ (accessed on 8 March 2022). [15]

SPC (2019), *National Technology Needs Assessment Report*, Secretariat of the Pacific Community. [22]

UNCTAD (2021), *Fiji adopts a new Investment Act*, Investment Policy Hub, United Nations Conference on Trade and Development, Geneva, https://investmentpolicy.unctad.org/investment-policy-monitor/measures/3717/fiji-adopts-a-new-investment-act (accessed on 9 March 2022). [11]

World Bank (2022), *World Bank Development Indicators*, https://databank.worldbank.org/source/world-development-indicators (accessed on 19 May 2022). [17]

Notes

[1] The so called "white goods" correspond to most electrical and electronic appliances, and more recently include static and mobile network and telecommunication devices and accessories.

[2] Applications for a FIRC and payment of the requisite application fee of USD 1 336 (FJD 2 725) needs to be submitted to Investment Fiji, www.state.gov/reports/2021-investment-climate-statements/fiji/.

[3] This is a sub-set of all financial flows and only includes FDIs, ODA and remittances.

[4] The discussion is not exhaustive of all financial flows targeting Fiji's economy.

[5] Values for remittances are described in the text in current prices as available at the World Bank Development Indicators database. In 2019, Fiji had 25% of its population living abroad, the fourth largest share in the Pacific (IOM, 2020[26]).

[6] The definition of ODA is available at www.oecd.org/development/financing-sustainable-development/development-finance standards/officialdevelopmentassistancedefinitionandcoverage.htm.

6 Setting sail for sustainability: Opportunities and tools for fostering a blue recovery

The global COVID-19 pandemic has severely affected Fiji, hitting at the heart of its backbone economic sectors, such as international tourism and export fisheries. However, the COVID-19 crisis has also brought to the fore the need to embark on a more sustainable model of development and is offering an opportunity to shift to a new, more sustainable development trajectory. This chapter provides an initial mapping of promising initiatives and actions that could be further explored, developed and scaled up, as part of a sustainable blue recovery. These initiatives focus on four key areas that show the potential to generate benefits across the broader economy and to drive a sustainable recovery: sustainable fisheries, sustainable tourism, green shipping and marine conservation. It also highlights examples of innovative financing mechanisms that could advance these ambitions.

The global COVID-19 pandemic has severely affected Fiji, hitting at the heart of its backbone economic sectors, such as international tourism and export fisheries. The government was able to put in place response measures, including thanks to international support and relief. Combined with increased spending to counter the pandemic, the international funding alleviated the pressure produced by unprecedented revenue losses. The population showed great resilience, and was able to stay afloat thanks to government measures, as well as access to traditional resources, such as subsistence fisheries and subsistence farming, and mutual solidarity. However, the COVID-19 pandemic brought to the fore the need to embark on a more sustainable model of development. Such a model needs to rest on a more diversified economy, more diffused socio-economic benefits across the population, and a sustainable use of natural capital that considers the growing impacts from climate change and other anthropogenic pressures. As in many other countries, the COVID-19 pandemic is providing Fiji with a wake-up call and an opportunity to shift to a new, more sustainable development trajectory.

This shift, however, will not happen by itself. It will need to be steered by a coherent, unified vision and direction for a recovery that is truly sustainable. Fiji's National Ocean Policy provides critical guidance in this respect, and its ambition and vision now need to consider opportunities and challenges stemming from the COVID-19 crisis. Ocean economy sectors, which are the foundation of Fiji's economy, can be the centre of the recovery. They can lead a transformation that will generate positive change across economic and social areas of the whole economy. This will require policy measures and actions that take into account the complexity of inter-sectoral interactions and integrate environmental, social and economic values (OECD, 2021[1]). This will also require mobilising adequate resources across sectors, from both public and private sources, through a financing strategy that incorporates a coherent range of financial instruments and approaches.

This chapter provides an initial mapping of promising initiatives and actions that could be further explored, developed and scaled up, as part of a sustainable blue recovery. These initiatives focus on four key areas that show the potential to generate benefits across the broader economy and to drive a sustainable recovery. These areas also show strong linkages across them, reaffirming the need for integrated, cross-sectoral policy making and actions. For instance, efforts to green the shipping sector in Fiji will not only demonstrate leadership towards net zero emissions (although Fiji's emissions are negligible at the global level). They will also reduce the costs of shipping services that depend on expensive imported fuels. In addition, they will create opportunities for enhanced inter-island connectivity that could increase the contribution of local supply to the tourism sector, provide opportunities for greater domestic tourism and generate other market development opportunities. The chapter also provides an initial overview and discussion of promising financing instruments and approaches that could mobilise an array of funding sources to help achieve the ambitions of a blue recovery.

6.1. Sustainable fisheries

The Fijian fisheries sector is largely focused on tuna, specifically catch fisheries within the Exclusive Economic Zone (EEZ). The country has the largest fishing capacity of any nation in the region, with most other Pacific Island Countries and Territories (PICTs) selling fishing rights to distant water fishing nations (SPC, 2021[2]).

The Pacific Community has conducted several stock assessments with the latest finding that the Fijian tuna stock is sustainably managed (Hare et al., 2021[3]) This assessment holds that the current level of effort, regulated primarily by licensing, can ensure that yield does not affect the capacity of the fish population to recover between fishing seasons. However, this finding is rooted in the present, based on past fishing activity (SPC, 2021[2]). Studies suggest that as the climate continues to change, with the ocean surface warming and the distribution of oxygen changing, the tuna population is likely to migrate. This

migration has not been factored into long-term fisheries management and it represents a risk for an undiversified fishing sector (Dey et al., 2016[4]).

Fiji's main interest in tuna is the export of fresh tuna via commercial air carriers, and the trans-shipment of frozen fish. The most lucrative of these products are the fresh fish, with the product consumed primarily in the United States and Japan, with a smaller market in Europe. The pandemic affected both export routes. Commercial air carriers almost ceased international activities completely and shipment schedules became unreliable.

In a post-COVID 19 market, flights are resuming as of February 2022 and shipments are becoming more regular, thereby restoring export channels to cater to the demand that has not declined globally. The secondary interest in tuna is in the cannery industry, with tuna processed in Fiji being canned and shipped around the world. However, this is a lower value product and makes up a small part of the sector.

The climate risks and reliance on export channels show the fisheries sector represents an ideal opportunity for diversification, both for economic growth and enhancing social and economic resilience to global and/or regional catastrophes analogous to COVID-19 (Dey et al., 2016[4]). The Ministry of Fisheries has highlighted an interest in developing its aquaculture capacity. To date, aquaculture has largely been small-scale and focused on the production of pearls for the luxury goods and jewellery industry. The ministry perceives aquaculture (including mariculture) as a means to grow the fisheries sector and provide a source of economic and food security to the local population in times of crisis (Republic of Fiji, 2020[5]).

The role of aquaculture as a secure source of nutrition in times of stress has been a driver of industry development in many Southeast Asian (SEA) countries (Béné et al., 2016[6])**.** Of potential environmental co-benefit is the relationship between aquaculture as a source of food and the maintenance of protected area regulations during times of crisis. During the height of the COVID-19 pandemic, many Fijian mainlanders moved back to island communities and began to place greater fishing pressure upon natural resources. In some cases, this meant breaking protected area rules and, often unintentionally, breaking licensing regulations. Through equitable planning processes and training, aquaculture could provide a source of relief to natural resources under similar circumstances in the future.

In the Asia-Pacific region, the aquaculture industry – with goals focused on enhancing food security – has typically been grown in a public-private partnership format, with government agencies providing subsidies and forms subsidies and forms of supply chain support for operators (Weirowksi and Liese, 2010[7]). The governments of many major aquaculture exporters typically play a role in training stakeholders; provide brood stock; and provide or support access of aquaculturists to feed stocks. . Though their support in acquiring and retaining land tenure rights and accessing subsidies has contributed to the degradation of coastal ecosystems throughout the region, which highlights the need to carefully design any subsidy to ensure that it has robust environmental controls and contingent upon sustainable operations. Such a role for the Ministry of Fisheries has been highlighted in the draft National Fisheries Policy (Republic of Fiji, 2020[5]). However, extensive public developments, or private industry stakeholder investments, will need to scale alongside small-scale stakeholder participation. Many public stakeholders also contribute significantly to research, including in new species, disease control and prevention; pollution control measures; and sustainable low-cost feed stocks, and/or hatchery technologies.

The Ministries of Fisheries and Economy have highlighted a number of products that could be targeted for aquaculture growth in the 5-year and 20-year National Development Plan (Ministry of Economy, 2017[8]) **and the National Fisheries Policy Draft** (Republic of Fiji, 2020[5])**.** These commodities include:

- tilapia (Ministry of Economy, 2017[8]; Republic of Fiji, 2020[5]),
- prawn and shrimp (Ministry of Economy, 2017[8]; Republic of Fiji, 2020[9]),
- seaweed (Ministry of Economy, 2017[8]; Republic of Fiji, 2020[5]),
- niche markets: seagrapes, bêche-de-mer, marine fish (Ministry of Economy, 2017[8]),
- sandfish (Republic of Fiji, 2020[9]),
- carp (Republic of Fiji, 2020[5]),
- reef fish and invertebrates (Republic of Fiji, 2020[5]).

Tilapia and prawns/shrimp are commodities produced intensively by Asian producers, which make up 70% of the market (FMI, 2021[10]). Both groups or organisms require a fresh/brackish water pond or closed systems. Intensive growth in production could result in widespread land conversion or tank development demands. These have driven environmental challenges throughout the Southeast Asia (SEA) region, particularly as a major driver of mangrove degradation and deforestation (Hishamunda et al., 2009[11]). Sustainable production of both groups of organisms requires site selection practices that mitigate or completely avoid the degradation of coastal ecosystems. The environmental impact of specific species of tilapia has been observed to lessen through the application of technologies that use less water/production unit and allow more efficient nutrient use (de Godoy et al., 2022[12]). With regard to habitat loss, the environmental impact assessment (EIA) and licensing process outlined in the Aquaculture Decree 2016 and the forthcoming National Fisheries Policy (Republic of Fiji, 2020[5]) may provide the necessary protections to avoid the widespread ecosystem degradation seen in many SEA countries. However, these mechanisms have not yet been tested extensively.

The sustainability of shrimp and prawn aquaculture is challenged by a series of factors that include land conversion, disease outbreaks, invasive species and wastewater management (Phillips, 1995[13])**.** Recent industry improvements have addressed major concerns in the sustainability and environmental footprint of production. These improvements include pond management techniques to reduce crowding and nutrient and toxin build-up; the recognition of the value of mangroves to shrimps; and incentives to maintain the ecosystem (Macusi et al., 2022[14]). Even among advanced aquaculture industries, not all issues have been resolved. This highlights the challenge in entering a market with a significant stigma generated by environmental impacts. A number of emerging technologies and new developments can be applied to improve economic and environmental sustainability. These include investment in closed systems with careful disease controls (Hishamunda et al., 2009[11]), and exploring the use of biofloc approach to rearing shrimp larvae (Emerenciano, Gaxiola and Cuzo, 2013[15]). However, sustainability in aquaculture requires extensive training, sustainable land-use planning and the necessary investment to ensure availability of appropriate technologies. In addition, research must keep up with challenges, such as tank/pond management, feed sources and disease outbreaks.

Mariculture opportunities include seaweed farming and a potential exploration of expanding pearl production, and an evaluation of the farming of sea cucumbers.

Seaweed farming is a growing form of mariculture in the region (Subasinghe, 2017[16]) **with markets for the product across Asia. However, there are significant variances in species preferences according to the culinary application and the country.** Throughout SEA, seaweed is grown by large-scale and small-scale stakeholders. Growing the local Fijian industry could focus on adding value through intercommunity collaboration, identifying ideal locations for production and linking these areas with ideal locations for drying and processing. However, support will be needed for production and to enhance market access for small-scale stakeholders. The primary consumers of the product are in Asia.

Consequently, significant work will be required to access the market due to the distance between the supplier and the consumer. In addition, local producers will need to be trained to culture the appropriate species and process them to meet consumer demands. Pursuing growth will provide co-benefits, including climate change mitigation through the capacity of seaweed to sequester carbon dioxide from the atmosphere and regulate local dissolved CO2 in the coastal zone. However, shipping will likely cancel out some of the removals.

Sea cucumber farming is growing in popularity to meet the demand of the Chinese market primarily, although sea cucumbers are also consumed throughout the region, including in Fiji. There is a significant variance in value of sea cucumbers. Certain species generate hundreds of dollars per kilo, while others generate much less. For the vast majority of sea cucumber farming practices, the juveniles are collected from the immediate environment and then reared in pens in the tidal zone. As such, it is possible to overexploit the local population. Developing the local industry, particularly as an export commodity, will face legal challenges. Export of sea cumbers has been banned since 2017 in response to local populations dropping to densities below which natural populations can be sustained. The Ministry of Economy's 5-year and 20-year National Development Plan (Ministry of Economy, 2017[8]) and the Ministry of Fisheries' draft National Fisheries Policy (Republic of Fiji, 2020[5]) both identify bêche-de-mer for development. They are perhaps focused on growing the domestic market for the commodity. Blue Ventures has had success in developing local capacity and market access in Madagascar and provides a potential model for replication and scale (Arnull et al., 2020[17]).

To create a strong aquaculture export and domestic market that can compete with others in the region the Ministry of Fisheries must likely play a strong supporting role in the industry, particularly for small-scale stakeholders. The price point for products may not be competitive or profitable if only private stakeholders support the supply chain for the pond/tank rearing of fish. In Fiji there are private fisheries producer that represents an ideal partner for scaling-up of the industry. It could be both a supplier in the export market and a potential provider of basic aquaculture supplies, including brood stock and feed. Investments in these private partners will be critical for industry growth. However, the government will need to fill in gaps to provide a full range of support, while minimising public-private competition and inefficiencies. At the basic level, the ministry will likely play a leading role in providing or subsidising access to feed stock and brood stock for scaling up businesses and incentivising the entry of small-scale producers. The provision of these resources would incur consistent operating costs, including up-front costs in training, personnel, technology and tank infrastructure.

The University of Fiji is conducting a series of aquaculture pilot projects with the support of the Japan International Cooperation Agency, including many on species of interest to the Ministry of Economy (Ministry of Economy, 2017[8]) **and the Ministry of Fisheries** (Republic of Fiji, 2020[5]). The projects are exploring a broad range of aquaculture technologies and applications to identify pilots worthy of further investment and scaling. For its part, the University of the South Pacific through its aquaculture programme is offering a range of courses in aquaculture. It is also supporting development of foundational knowledge and skills to grow the base of practitioners in the country.

6.2. Sustainable tourism

Before the COVID-19 pandemic, the tourism sector had been marked by sustained growth and came to represent the bulk of Fiji's economy, but its prospects are now uncertain, both in Fiji and globally. Different futures are possible. One scenario is the return to pre-pandemic trends. Another possible scenario is a transform towards a more sustainable sector that puts local well-being and revitalisation of natural capital at the centre. Yet another scenario is that the tourism sector could decay, undermined by climate change and the significant reduction of long-haul intercontinental travel due to COVID-19. Some of these scenarios are explored in Yeoman et al. (2022[18]).

For a country like Fiji, each possible future will be affected by a number of external factors. These include developments in the COVID-19 pandemic, health measures and emission targets in other countries. Other factors include the impacts of protracted uncertainty and/or changed environments on international tourists' preferences. Nonetheless, the government of Fiji still retains control over rules, regulations and policies that can shape the future of the tourism sector. One track leads to regeneration of communities, cultures, heritage and natural capital, while the other leads to greater social and environmental unsustainability.

Fiji needs clear targets and requirements, as well as adequate incentives and support, to ensure more sustainable development of the tourism sector in support of a sustainable recovery. This should target a number of critical areas, including energy efficiency, use of renewable energy, waste management systems, use of local supply, zoning and protected areas, labour rules and health requirements. These targets and requirements will aim to foster backward and forward linkages with the rest of the economy, ensure strong local returns and directly contribute to advance the conservation and restoration of natural habitats and wildlife. Currently, the National Development Plan mandates sustainable energy use, enforcement of building codes related to energy efficiency and enhanced waste management in the tourism sector. However, a lack of targets, roadmap and support measures to achieve them seems to have stalled progress.

The tourism sector is composed of a diffused ecosystem of private players. Consequently, the government will need to work closely with tourism associations and private sector representatives to ensure stakeholder ownership and co-operation towards a more sustainable tourism sector. Interviews for this report highlighted that closer consultation and collaboration between the government and the tourism private sector were established during the COVID-19 pandemic. This helped prepare for the opening of borders and to define enhanced safety standards, protocols and COVID-19 mitigation practices needed to improve traveller safety. Fiji can build on this growing relationship by creating a stable mechanism for government and the tourism private sector to collaborate on the definition and monitoring of shared objectives. This will be particularly important in light of the government's emerging strategy for the tourism sector.

The paragraphs below highlight opportunities and examples that can be built upon to develop Fiji's tourism more sustainably for a sustainable blue recovery.

Growing energy efficiency and sustainability: Linking fiscal incentives for hotel renovations under COVID-19 to enhanced sustainability standards

Standards and incentives in the tourism sector can help Fiji move towards a low-carbon, climate-resilient development pathway. Fiji has made several commitments domestically in the national development policy (NDP) and internationally in its Nationally Determined Contribution (NDC), to increase electricity generation from renewable energy sources to 100% by 2036. Additionally, Fiji seeks a 30% reduction in greenhouse gas (GHG) emissions by 2030 from the 2013 baseline (NDP and NDC). Third, it wants to ensure access to affordable, reliable, modern, sustainable energy, increasing the share of renewable energy and expanding infrastructure and upgrading technology for equitably supplying modern and sustainable energy services. Since 2013, however, a number of off-grid resorts have introduced solar and battery systems to cover all or part of their electricity demand. Wind energy, instead, continues to play a small role in electricity generation (UNFCCC, n.d.[19]). To move away from diesel consumption and meet energy generation demand of off-grid hotels, further expansion of solar PV and wind energy have been identified as key priorities.

Investing in energy efficiency in the tourism sector can also underpin economic recovery, as well as create healthy spaces, increase energy security, boost employment and productivity, and move closer to the achievement of climate goals. On 24 March 2022, the Fijian Ministry of Economy announced the 2021-22 revised budget measures. These included a 12-month further extension of the five-year income tax holiday regime for investments in hotel renovations and refurbishments until 31 December 2023. This measure is a valuable contribution to help restart the tourism sector. However, without links to energy efficiency

standards and requirements, this measure misses the opportunity to help shift the trajectory of Fiji's tourism sector and its contribution to a blue recovery.

Besides energy efficiency, the tax holiday regime for investments in hotel renovations and refurbishments could be connected to materials and circular economy. In particular, it could develop closed-loop systems, reduce the use of virgin materials, and increase the potential of bio-based materials (UNEP, 2020[20]). This could further lower energy and cooling demand and provide sustainable cooling solutions for resilience and adaptation.

In September 2020, the Global Alliance for Buildings and Constructions (GlobalABC) issued a call to include building renovation and modernisation in COVID-19 recovery plans. It recommended a massive renovation wave – spurred by tailored support mechanisms and designed with national and local stakeholders – to make the building stock more energy-efficient. The Platform for REDESIGN 2020 highlights examples of such actions. REDESIGN 2020 is an Online Platform on Sustainable and Resilient Recovery from COVID-19 supported by the Japanese Ministry of the Environment, the United Nations Framework Convention on Climate Change and the Institute for Global Environmental Strategies. Examples within REDESIGN 2020 include commitments by the European Union in the Renovation Wave, the United Kingdom in its Public Sector and Social Housing Decarbonisation schemes, and France in its support of public housing and public buildings.

Reducing food import vulnerabilities: The experience of hotels' food gardens and the example of the Contemporary Island Cuisine Training

There is great potential in strengthening the links between the three large sectors of tourism, agriculture and fisheries/aquaculture to maximise economic benefits to the local economy. Fiji's tourism sector relies largely on imported produce because it provides a steady supply, high quality and prices that are sometimes lower than local produce. Overall, however, the food import bill is a significant cost driver for Fiji's tourism sector, estimated at FDJ 794.9 million in 2017 (IFC, 2018[21]). The strong reliance on imported foods also limits opportunities to use touristic experiences for bringing to fruition and strengthening linkages with the culture and heritage of the country. Fiji's arable land stands at 9% of its territory (World Bank, 2022[22]). However, channelling resources to grow or produce certain fresh produce items locally could potentially cut down Fiji's food import bill by FDJ 24.1 million (USD 11.8 million) (IFC, 2018[21]).

The COVID-19 crisis may be giving impetus and accelerating progress in this direction. In the wake of COVID-19, food imports had become both more expensive and more difficult to access. This disruption of value chains has pushed several hotel chains to turn to local production. Several chains have established food gardens and even set targets to achieve larger shares of locally produced food (Table 6.1).

Table 6.1 Sustainable practices implemented by tourism business

Area in which business is building sustainability	Type of sustainable practice	Adaptation or mitigation measure	Frequency of mentions (out of 12)
Energy	Renewable energy	Mitigation	4
	Energy-efficient appliances	Mitigation	5
	Low-energy consumption	Mitigation	3
Transport	Locally sourced produce	Mitigation	10
	Local tourists	Mitigation	4
Infrastructure	Cyclone-resilient infrastructure	Adaptation	4
	walls	Adaptation	2
Water	Efficient water use	Adaptation	2
Nature-based solutions	Reef protection and restoration	Adaptation	6
	Mangrove planting	Both	5
	Forest protection and restoration	Both	4

Source: Toepfer (unpublished[23]), Tourism stakeholder perceptions of climate risk and sustainable tourism transitions in Fiji.

Promoting consumption of local foods will require a change of mindset, a focus on locally grown and produced food, and innovative ways to substitute locally available produce in local and international menus. Moreover, increasing consumption of local production is also an important ally in reducing transportation-related emissions. Raising awareness of tourists, chefs, kitchen staff and purchasing managers will be an important part of fostering greater use of local produce.

The Fijian Ministry of Agriculture and the Ministry of Industry, Trade and Tourism have been working with the Fiji Hotel and Tourism Association to raise awareness through the Contemporary Island Cuisine Training. This annual event showcases innovative Fijian menus to interested budding and experienced local chefs. This initiative promotes use of locally grown produce on resort menus and beverage lists. It also connects farmers and communities with chefs, while introducing Fiji's young chefs to new ways to treat local produce. As they understand the resorts' demand, farmers are then encouraged to plant and supply local produce accordingly. In doing so, they generate more local income for their own livelihoods and their communities.

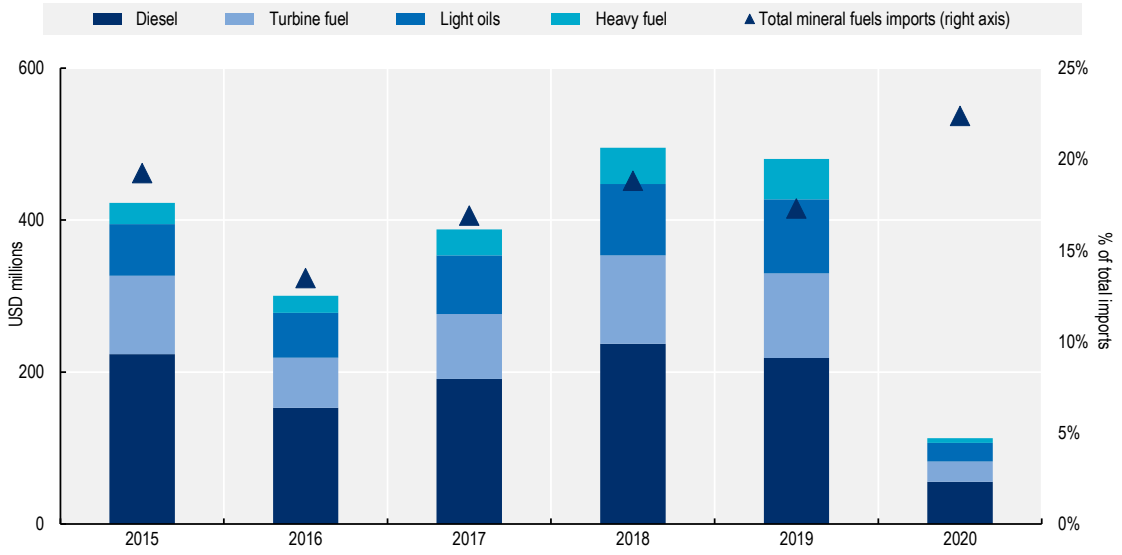
Development co-operation providers could support sustainable sourcing, drawing on positive examples in other countries. In the Seychelles, for instance, the International Fund for Agricultural Development (IFAD) is partnering with hotels and resorts on sustainable agricultural projects. They aim to keep imports to a minimum and ensure these accommodation facilities only source local produce from inclusive and environmentally conscious practices. Through the organic vegetable garden on the resort and the IFAD partnership, for instance, the Hilton Seychelles Labriz Resort & Spa now sources over 80% of its vegetables locally.

6.3. Green shipping

Fiji's fuel imports represent a growing cost on Fiji's import bill and have adverse environmental impacts. In monetary terms, fuel imports represented USD 420 million in 2005 and USD 650 million in 2008 (Holland et al., 2014[24]). In 2020, despite the drop following the COVID-19 pandemic, fuels imports in Fiji accounted for 25% of total imports (Figure 6.1). Maritime transport accounts for over 20% of domestic fossil fuel

imports (Holland et al., 2014[24]). Total emissions from maritime transport in 2016 are estimated at 214 Gg of CO_2e and could reach 342 Gg of CO_2e in 2040 under a business-as-usual scenario (Prasad and Raturi, 2019[25]). The same estimate suggests that fuel consumption could rise from 79 million to 127 million between 2016-40, assuming a 2% annual growth rate in maritime passenger and freight activity. Additionally, Fiji's Low Emission Development Strategy estimates total emissions for the Fiji maritime sector at 174 kt of CO_2 in 2016. Passengers and cargo shipping accounted for more than one-third of total emissions in 2016 (Table 6.2). The contribution of fishing to domestic emissions relates to the use of two-stroke outboard motors, which are cheaper than other options but fuel-intensive, making them the least efficient type of small motor (Newell, 2020[26]).

Figure 6.1. Mineral fuels account for an average of 18% of Fiji's imports



Note: 1 FJD = 0.462 USD. Fiji Bureau of Statistics does not specify if these values are in current or constant prices. Imports by SITC.
Source: Fiji Bureau of Statistics – Key Statistics: December 2019 (n.d.[27]).

StatLink https://stat.link/7ha3ny

Investing in alternative fuels, fuel efficiency measures and clean technologies can reduce dependency on fossil fuels and make Fiji less vulnerable to external shocks.

Substituting fossil fuel in uneconomical routes can reduce dependency on fossil fuels and have positive effects to other segments of Fiji's maritime sector. Fiji has ten uneconomical routes that are unattractive to private operators within the Lau Group islands. These routes are under the Fijian Government Shipping Franchise Scheme (GSFS), which funds 42% of the cost of the fuel originally implemented to attract private operators. Introducing technologies such as the four Flettner rotor can reduce carbon emissions by in 7 327 tons (Table 6.2). Although they account for a small share of Fiji's emissions, they can serve as a first step to diffusing innovative low-carbon and fuel-saving options. For instance, the Flettner rotor and the Greenheart Project vessel have an estimated installation cost of between USD 1-2 million. In 2018/19 alone, the Fijian government spent USD 1.06 million in subsidies for uneconomical routes.[1] Searcy (2017[28]) estimates the gradual reduction of GSFS subsidies more than compensate government's efforts to promote fuel efficiency and can actually result in savings over 20 years. Scaling up such technologies that are at the demonstration and prototype stages as soon as possible is urgent to ensure achievement of zero emissions by 2050.

In addition, according to Prasad and Raturi (2019[25]), implementing fuel-efficient measures such as reducing speed of certain vessels alleviates diesel consumption by 5.2%.[2] Cleaner fuels such as biodiesel blend (B5) can decrease diesel consumption by almost 4%, from 97 to 93 million litres. Fuel products derived from coconut oil can be easily blended with diesel (e.g. coconut-derived biodiesel) and help reduce Fiji's reliance on imported fossil fuel.

Two pilot projects are exploring maritime solar energy across Pacific SIDS. This is part of the Global Maritime Technologies Cooperation Centres (MTCC), funded by the European Union and implemented by the International Maritime Organization (IMO). Vanuatu and Samoa hosted the MTCC-Pacific Pilot projects with cost savings estimated between USD 45 050-48 053 and GHG emissions reductions between 101-135 tonnes annually (Bola, n.d.[29]). Solar systems for vessels can be installed in all vessels in Pacific SIDS, independent of age. Moreover, the technology is already available and could be immediately adopted by Fiji's ageing fleet.

The Sustainable Sea Transport Initiative (SSTI) is another example of efforts in Fiji and in the Pacific to develop an efficient sustainable sea transport. SSTI has developed a pilot project and a first prototype sailing ship in partnership with the University of Queensland.

Table 6.2. Projected fuel savings and CO_2 emissions reductions from uneconomical routes

	Fuel savings	CO_2 emissions reduction		
	20-year cumulative (t)	Annual year 9 and above (t/yr)	20-year cumulative (t)	Annual year 9 and above (t/yr)
Baseline	–	–	–	–
5% fuel savings	457	29	1 465	92
10% fuel savings	914	57	2 931	183
15% fuel savings	1 371	86	4 396	275
25% fuel savings	2 285	143	7 327	458
Zero-emission	8 685	543	27 843	1 740

Source: (Searcy, 2017[28]).

Reviving traditional knowledge is an opportunity to build resilience and reduce dependency on fossil fuels. The use of small canoes and traditional watercraft such as the *camakau* is associated with reduced reliance on fossil fuel and is part of Fiji's national Maritime and Land Transport Policy (Ministry of Infrastructure and Transport, 2015[30]). In the Pacific, several countries have turned to these options. In 2018, the government of the Marshall Islands added its first sailing cargo vessel to service national waters (GIZ, 2021[31]). The acquisition is part of the Transitioning to Low Carbon Sea Transport project formed between the Marshall Islands and GIZ that has been extended to Fiji as announced at COP 26. One objective is to develop and pilot-test low-carbon propulsion technologies in co-operation with partners. The initiative poses a great opportunity to scale prototypes such as the Flettner rotor and the Cerulean project vessel. The Drua is an example of Fijian traditional knowledge that can be used as an alternative to fuel-dependent engines. These vessels are made out of native wood and coconut fibre, and are completely metal free (UNFCCC, 2017[32]). They require two crew members and can carry up to ten passengers.

Regulation and market-based measures are key to increase the appeal of low-carbon alternatives.

Across the Pacific, taxes and levies have been adopted to increase the competitiveness of reducing emissions. For instance, the Marshall Islands and the Solomon Islands proposed a levy of USD 100/tCO_2-eq emitted by vessels starting in 2025. If implemented, the levy would increase either annually or every five years by 30% or 100% (IEA, 2021[33]). Additionally, to ensure that new technologies are effective in reducing Fiji's reliance on fossil fuels, regulation must ensure that imported vessels can incorporate these

innovations. Most 20-year-old vessels, which are the majority of Fiji's fleet, have lower fuel economy, especially if not maintained properly (Prasad and Raturi, 2019[25]). Further, encouraging the purchase of vessels with engines certified to operate on biodiesel or biodiesel blend can help promote decarbonisation of Fiji's maritime fleet.

Bilateral and multilateral partners have been supporting domestic and regional shipping decarbonisation (Table 6.3). Led by the governments of Fiji and the Marshall Islands, the Pacific Blue Shipping Partnership seeks to mobilise USD 500m to foster renewal of domestic fleets across the Pacific until 2030. The governments of Fiji, the Marshall Islands, Solomon Islands, Tuvalu and Vanuatu announced the partnership at the UN Secretary-General's Climate Action Summit in 2019. Scaling up technologies at demonstration and prototype stage is key to modernise fleets across the Pacific, ensuring a 40% reduction in emissions by 2030. The Cerulean project is a joint research and development collaboration between Swire Shipping and the University of the South Pacific's Micronesian Centre for Sustainable Transport. With trials expected by the end of 2022 and 2024, the vessel is expected to deliver GHG emission savings of more than 25% (Maritime UK, 2021[34]).

Table 6.3. Partners active in Fiji's shipping sector – an initial mapping

Partner	Initiative
GIZ	Transitioning to Low Carbon Sea Transport[1]
European Union (EU)	Global Maritime Technologies Cooperation Centres Network, funded by the EU and implemented by IMO
Canada	Initiative on Closing the Investment Gap in Sustainable Infrastructure
Asian Development Bank	Transport Sector Planning and Management
United Kingdom	The Cerulean project

1. https://www.giz.de/en/worldwide/59626.html

6.4. Marine conservation

Marine protection in the country is distributed between three primary mechanisms: the locally managed marine areas (LMMAs), formal marine protected areas (MPAs) and marine conservation agreements (MCAs) between communities and the tourism sector. Most area-based management tools in the country are LMMAs (Techera et al., 2009[35]).With LMMAs, responsibility for management rests with community leaders, who are supported by government ministries and a number of non-governmental organisations (NGOs) and consultants. These areas are managed sustainably by regulating permitted activities to minimise ecological degradation that could otherwise be caused by land-based pollution sources and unsustainable fishing practices. The types of management differ according to the area being managed. Local communities make key decisions with partners engaged for advice. In some cases, the areas are completely closed off to fisheries activities, but the large majority employ regulations that limit damaging practices (Jupiter et al., 2014[36]).

There are four inshore protected areas in Fiji, although the Ministry of Fisheries holds a mandate to designate 30% of the Exclusive Economic Zone (EEZ) as protected areas by 2030. The Protected Area Committee (PAC) has led identification of a network of areas that, if protected, would act to safeguard major hotspots of biodiversity throughout the country. The draft selection of areas is undergoing review and stakeholder consultation.

The emerging blue bond is geared towards funding marine protection as one area. Protecting marine resources generates value indirectly for fisheries. It potentially enhances and replenishes the long-range fisheries stock and enhances stability of the fishery – under effective and science-based management

processes (Garcia, Ye Yimin and Charles, 2018[37]). From a return-on-investment perspective, tourism is the most direct source of economic value that MPAs generally provide. The preservation and maintenance of biodiversity can be used to encourage tourism and direct and indirect revenue. However, the offshore strategy makes it challenging to generate revenue from tourism because it is difficult to access most areas. This, in turn, creates the perception that protection directly generates a return on investment among prospective investors in the bond.

Tourism may be a potential, though small, source of finance for the management of protected areas set up through MCAs between local communities and locally based tourism operators. A draft policy brief by the PAC recommended establishment of a trust fund to pay for Fiji's network of marine and terrestrial protected areas. It suggested potential ideas for generating revenue (e.g. environmental levies, debt-for-nature swaps, etc.) should be further explored. In contrast, employing a tourism-based approach to generate the funding necessary to manage 30% of the EEZ effectively as a no-take zone is difficult given the need to generate tourism interest in and support access to these areas. The management of the broader offshore MPA strategy will require an influx of revenue and technological innovations to reduce the resource demands of effective management.

Centralised funding models from other parts of the world could be modified to fit the demands of the country and meet some of the needs for near-shore, small-scale protected areas management. In the Philippines, the National Implemented Protected Area System (NIPAS) Act established a system where tourism revenue to each of the designated areas is centralised into the Integrated Protected Area Fund. The fund is managed by the Department of Environment and Natural Resources (Republic of the Philippines, 1992[38]). That fund is then used to provide management funding to each of the NIPAS areas to ensure they receive a baseline source of finance with the capacity to cover primary management costs (La Viña, Kho and Caleda, 2010[39]). Each area fundraises on top of this baseline. However, the system ensures that difficult-to-access areas for tourists still receive a level of funding for management that they would otherwise have had to generate through other means. In Fiji, an analogous approach could be applied at a more local level, grouping nearby LMMA managing communities. This could focus on funding management needs and supporting diversification of their marine economic assets. Any fund created in this scenario would likely be better managed through a community-based organisation or partner to ensure flexibility and greater impact.

An analogous system applied in Fiji would likely have to be split into two parts. One part would be managed by the Ministry of Fisheries (for offshore), including all MPAs. The second would cover all the LMMAs. It would be jointly managed by the Ministry of Fisheries and iTaukei Affairs Board (who have appointed conservation officers based in the provincial offices), with a steering group of representative community leaders.

References

Arnull, J. et al. (2020), "Biophysical site-suitability summary for community based sea-cucumber aquaculture, Southwest Madagascar", commissioned by the Prince Albert II of Monaco Foundation, Project No. 2505, Blue Ventures, April. [17]

Béné, C. et al. (2016), "Contribution of fisheries and aquaculture to food security and poverty reduction: Assessing the current evidence", *World Development*, Vol. 79, pp. 177-196, https://doi.org/10.1016/J.WORLDDEV.2015.11.007. [6]

Bola, A. (n.d.), “Low carbon, safe, accessible, and affordable maritime transport”, Maritime Technology Cooperation Centre – Pacific, http:////www.pacificmet.net/sites/default/files/inline-files/documents/3.5%20MTCC-Pacific%20Pilot%20Project%20Update%202021_PICOF_3.5.pdf. [29]

de Godoy, E. et al. (2022), “Environmental sustainability of Nile tilapia production on rural family farms in the tropical Atlantic Forest region”, *Aquaculture*, Vol. 547, p. 737481, https://doi.org/10.1016/J.AQUACULTURE.2021.737481. [12]

Dey, M. et al. (2016), “Economic impact of climate change and climate change adaptation strategies for fisheries sector in Solomon Islands: Implication for food security”, *Marine Policy*, Vol. 67, pp. 171-178, https://doi.org/10.1016/J.MARPOL.2016.01.004. [4]

Emerenciano, M., G. Gaxiola and G. Cuzo (2013), “Biofloc Technology (BFT): A review for aquaculture application and animal food industry”, in *Biomass Now – Cultivation and Utilization*, InTech, https://doi.org/10.5772/53902. [15]

Fiji Bureau of Statistics (n.d.), *Latest Key Statistics Release*, https://www.statsfiji.gov.fj/index.php/latest-releases/key-stats (accessed on 19 May 2022). [27]

FMI (2021), “Tilapia market by source, form & application for 2021–2031”*, Tilapia Market – Analysis, Outlook, Growth, Trends, Forecasts*, Future Market Insights, https://www.futuremarketinsights.com/reports/tilapia-market. [10]

Garcia, S., J. Ye Yimin and A. Charles (2018), “Rebuilding of marine fisheries”*, Fisheries and Aquaculture Technical Paper*, No. 630/1, Food and Agriculture Organization of the United Nations, Rome, https://agris.fao.org/agris-search/search.do?recordID=XF2018002004. [37]

GIZ (2021), *Transitioning to Low Carbon Sea Transport*, GIZ, Bonn, http://www.giz.de/en/worldwide/59626.html. [31]

Hare, S. et al. (2021), *The western and central Pacific tuna fishery: 2020 overview and status of stocks.*. [3]

Hishamunda, N. et al. (2009), “Commercial aquaculture in Southeast Asia: Some policy lessons”, *Food Policy*, Vol. 34/1, pp. 102-107, https://doi.org/10.1016/J.FOODPOL.2008.06.006. [11]

Holland, E. et al. (2014), “Connecting the dots: Policy connections between Pacific Island shipping and global CO2 and pollutant emission reduction”, *Carbon Management*, Vol. 5/1, pp. 93-105, https://doi.org/10.4155/cmt.13.78. [24]

IEA (2021), *International Shipping, Tracking Report November 2021*, webpage, https://www.iea.org/reports/international-shipping (accessed on 23 March 2022). [33]

IFC (2018), *From the Farm to the Tourist’s Table: A Study of Fresh Produce Demand from Fiji’s Hotels and Resorts*, International Finance Corporation, Washington, DC, https://www.ifc.org/. [21]

Jupiter, S. et al. (2014), “Locally-managed marine areas: Multiple objectives and diverse strategies”, *Pacific Conservation Biology*, Vol. 20/2, pp. 165-179, https://doi.org/10.1071/PC140165. [36]

La Viña, A., J. Kho and M. Caleda (2010), *Legal Framework for Protected Areas: Philippines*, International Union for Conservation of Nature, Gland, Switzerland, https://scholar.google.com/scholar?hl=en&as_sdt=0%2C5&q=Legal+Fraemwork+for+Protected+Areas%3A+Philippines.&btnG=. [39]

Macusi, E. et al. (2022), "Environmental and socioeconomic Impacts of shrimp farming in the Philippines: A critical analysis using PRISMA", *Sustainability*, Vol. 14/5, p. 2977, https://doi.org/10.3390/SU14052977. [14]

Maritime UK (2021), "The Cerulean project", 20 September, http://www.maritimeuk.org/priorities/environment/netzeromaritime-showcase/cerulean-project/. [34]

Ministry of Economy (2017), *5-Year & 20-Year National Development Plan*, Ministry of Economy, Republic of Fiji, Suva, https://www.fiji.gov.fj/getattachment/15b0ba03-825e-47f7-bf69-094ad33004dd/5-Year-20-Year-NATIONAL-DEVELOPMENT-PLAN.aspx (accessed on 14 April 2022). [8]

Ministry of Infrastructure and Transport (2015), *Maritime Transport Policy*, Ministry of Infrastructure and Transport, Republic of Fiji, Suva. [30]

Newell, A. (2020), "Emissions from smaller boats need to be addressed", 8 July, Fiji Sun, https://fijisun.com.fj/2020/07/08/emissions-from-smaller-boats-need-to-be-addressed/. [26]

OECD (2021), *COVID-19 pandemic: Towards a blue recovery in small island developing states*, https://www.oecd.org/coronavirus/policy-responses/covid-19-pandemic-towards-a-blue-recovery-in-small-island-developing-states-241271b7/ (accessed on 26 April 2022). [1]

OECD (2020), *Sustainable Ocean for All : Harnessing the Benefits of Sustainable Ocean Economies for Developing Countries*, OECD Publishing, Paris, https://www.oecd-ilibrary.org/sites/bede6513-en/index.html?itemId=/content/publication/bede6513-en (accessed on 26 April 2022). [40]

Phillips, M. (1995), "Shrimp culture and the environment", in *Towards Sustainable Aquaculture in Southeast Asia and Japan*, SEAFDEC Aquaculture Department, Iloilo, The Philippines, https://repository.seafdec.org.ph/bitstream/handle/10862/124/adsea94p037-062.pdf?sequence=1. [13]

Prasad, R. and A. Raturi (2019), "Fuel demand and emissions for maritime sector in Fiji: Current status and low-carbon strategies", *Marine Policy*, Vol. 102, pp. 40-50, https://doi.org/10.1016/J.MARPOL.2019.01.008. [25]

Republic of Fiji (2020), *Draft National Fisheries Policy*, Republic of Fiji, Suva. [5]

Republic of Fiji (2020), *National Fisheries Policy*, Republic of Fiji, Suva, https://www.fisheries.gov.fj/images/National_Fisheries_Policy_draft_June_2020.pdf (accessed on 14 April 2022). [9]

Republic of the Philippines (1992), *Republic Act No. 7586*, Republic of the Philippines, Manila. [38]

Searcy, T. (2017), "Harnessing the wind: A case study of applying Flettner rotor technology to achieve fuel and cost savings for Fiji's domestic shipping industry", *Marine Policy*, Vol. 86, pp. 164-172, https://doi.org/10.1016/J.MARPOL.2017.09.020. [28]

SPC (2021), *The Western and Central Pacific Tuna Fishery : 2020 Overview and Status of Stocks: Oceanic Fisheries Programme*, Secretariat of the Pacific Community. [2]

Subasinghe, R. (2017), "Regional review on status and trends in aquaculture development in Asia-Pacific 2015"*, FAO Fisheries and Aquaculture Circular*, No. 1135/5, Food and Agriculture Organization of the United Nations, Rome. [16]

Techera, E. et al. (2009), "Status and potential of locally-managed marine areas in the South Pacific: meeting nature conservation and sustainable livelihood targets through wide-spread implementation of LMMAs", *SPREP/WWF/WorldFish-Reefbase/CRISP*, pp. 343-354, https://www.researchgate.net/publication/46446261_Status_and_potential_of_locally-managed_marine_areas_in_the_Pacific_Island_Region_meeting_nature_conservation_and_sustainable_livelihood_targets_through_wide-spread_implementation_of_LMMAs. [35]

Toepfer, N. (unpublished), *Tourism stakeholder perceptions of climate risk and sustainable tourism transitions in Fiji*. [23]

UNEP (2020), *2020 Global Status Report for Buildings and Construction: Towards a Zero-emission, Efficient and Resilient Buildings and Construction Sector*, United Nations Environment Programme, Nairobi, https://wedocs.unep.org/bitstream/handle/20.500.11822/34572/GSR_ES.pdf. [20]

UNFCCC (2017), "Fijian canoe as symbol of resilience and unity displayed at COP23", 26 October, UNFCCC News, https://unfccc.int/news/fijian-canoe-as-symbol-of-resilience-and-unity-displayed-at-cop23. [32]

UNFCCC (n.d.), , United Nations Framework Convention on Climate Change, Geneva. [19]

Weirowksi, F. and A. Liese (2010), "Public private partnerships in small-scale aquaculture and fisheries", The WorldFish Center, Penang, http://pubs.iclarm.net/resource_centre/WF_2731.pdf. [7]

World Bank (2022), *Arable land (% of land area), Fiji*, (database), https://data.worldbank.org/indicator/AG.LND.ARBL.ZS?locations=FJ (accessed on 26 April 2022). [22]

Yeoman, I. et al. (2022), *Does Tourism Have a Future in the Pacific Islands?*, Asian Development Bank, Mandaluyong, The Philippines. [18]

Notes

[1] The value is provided in Fijian dollars and converted using FJD 1=USD 0.462 exchange rate. Fijian Parliament, 2020. *Review Report on the Petition for Government to Provide Reliable, Safe and Affordable Shipping Services for the Lau Group,* Parliamentary Paper No. 132/19**,** www.parliament.gov.fj/wp-content/uploads/2020/09/Review-Report-on-the-Petition-for-Government-to-Provide-Reliable-Safe-and-Affordable-Shipping-Services-for-the-Lau-Group.pdf.

[2] The reduction is relative to a business as usual scenario which assumes a 2% rate of increase of vessels' activity level (tkm).

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The global COVID-19 pandemic has severely affected Fiji, hitting at backbone economic sectors, such as international tourism and export fisheries. It has also brought to the fore the need to embark on a more sustainable model of development. This report examines Fiji's economic and sustainability trends, as well as the governance and financing of its ocean economy before and during the COVID-19 crisis. It provides an initial mapping of promising initiatives and funding instruments that can be developed and scaled up to foster a sustainable blue recovery, focusing on four main areas: sustainable fisheries, sustainable tourism, green shipping and marine conservation.

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