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The ocean economy of Samoa: Economic trends, the impact of recent crises and sustainability stressors

This chapter explores the structure and patterns of Samoa's ocean economy, highlighting the crucial roles played by key sectors such as tourism, fisheries and maritime transport. It emphasises their contributions to the overall economic context and assesses the socio-economic impacts of the COVID-19 pandemic, to draw lessons for building a sustainable and resilient ocean economy. The chapter also explores the pressing challenges faced by Samoa's ocean economy, including climate change, overexploitation of marine resources and environmental degradation, and discusses the potential of ocean economy activities to drive long-term economic growth and development.

Key messages

- Despite its structural limitations, characteristic of small island developing states, Samoa has achieved substantial economic development since graduating from the list of Least Developed Countries in 2014.
- Samoa's economy is intrinsically linked to the use of its ocean resources. This is reflected in the country's medium and long-term national development strategies (Pathway for Development of Samoa and *Samoa 2040*), which recognise the potential of ocean-based industries in driving economic growth.
- Recent crises, including the COVID-19 pandemic and climate change, have highlighted the vulnerability of the country's ocean economy to external shocks and natural disasters. This can be attributed in part to the high reliance on the tourism industry, which accounts for a quarter of Samoa's gross domestic product. Looking ahead, while tourism still represents an important economic opportunity, addressing the sector's risks is pivotal for Samoa's economic resilience.
- Ultimately, achieving long-term economic growth and sustainable development requires Samoa to better balance the economic potential of its ocean economy with social and environmental considerations. This involves ramping up its investments in adaptation and resilience, as well as addressing the constraints on the development of its ocean economy, such as the volatility of the labour market, heavy reliance on imports and insufficient private sector development.

1.1. Samoa's ocean economy in the context of its overall development

Samoa is a small ocean economy that shares many structural characteristics with other Pacific small island developing states (SIDS). The ocean plays a critical role in Samoa's economy and the livelihood of its people, with key sectors like tourism, fisheries and maritime transport relying heavily on the country's rich marine resources. Although Samoa's 120 000-square-kilometre exclusive economic zone (EEZ) is the smallest in the Pacific region, it includes some of the most biodiverse marine ecosystems in the world, with nearly a thousand species of fish recorded, including 890 found in shallow water or reefs (Convention on Biological Diversity, 2023^[1]). Like many Pacific SIDS, Samoa is characterised by its small landmass (2 830 square kilometres) and population size (195 979 inhabitants, mostly dispersed across two main islands, Upolu and Savai'i), its remoteness from major markets, and a predominantly maritime environment (Government of Samoa, 2022^[2]) (Figure 1.1). This results in specific development challenges compared to other developing countries, including a lack of economic diversification, lower economies of scale, pressure on resources, and higher costs of goods and services (OECD, 2018^[3]).

Samoa's structural features have left it subject to economic constraints, with implications for its ocean economy. Due to its high exposure to natural disasters and external shocks, Samoa is classified as a country at high risk of debt distress (World Bank and IMF, 2021^[4]). Increased investments are essential to provide for its future resilience and long-term growth, but its fiscal constraints mean that the viability of these investments depends on access to additional grant financing (IMF, 2023^[5]). Samoa also faces a persistent trade deficit, because it relies on a narrow range of low-value exports, such as unprocessed fish and agricultural products, and high levels of imported goods.

Figure 1.1. Samoa consists of two main islands, Upolu and Savai'i, both encircled by coral reefs



Source: Government of Samoa (2022^[2]), *Pathway for the Development of Samoa FY2021/2022-FY2025/26*, <https://www.mof.gov.ws/wp-content/uploads/2022/02/Pathway-for-the-Development-of-Samoa.pdf>.

Samoa plays an influential role on the international stage on core issues related to the sustainable development needs of SIDS, including climate change and the ocean. The country has been a leading voice in advocating for the needs of SIDS, including greater access to finance and technology to help build resilience and adapt to the effects of climate change. It has also been a vocal advocate for urgent global action on reducing greenhouse gas emissions, increasing investment in climate adaptation measures and the sustainable management of the world's oceans. Samoa's hosting of key high-level international events has given it considerable international influence and a high profile in advocacy on the SIDS development agenda. One notable example was the Third International Conference on Small Island Developing States, held in Apia in 2014, which brought together representatives from SIDS around the world to discuss the unique challenges they face. The event resulted in the development of a plan of action, widely known as the Small Island Developing States Accelerated Modalities of Action (SAMOA) Pathway, which provided a framework to address the sustainable development needs of SIDS in areas such as climate change, ocean conservation and sustainable tourism (UN-OHRLS, 2014^[6]). More recently, the country hosted the 2022 Pacific Small Islands Developing States Solutions Forum, where leaders from across the region discussed the unique challenges facing SIDS, country-specific and regional successes and the next steps for advancing towards the achievement of the SAMOA Pathway and the 2030 Agenda for Sustainable Development (Government of Samoa, 2023^[7]). Samoa is also an active member of various organisations with a mandate to support regional cooperation among Pacific countries, including on ocean-related issues, such as the Pacific Islands Forum, the Pacific Community, and the Secretariat of the Pacific Regional Environment Programme, headquartered in Apia. In addition, Samoa is engaged in regional collaboration initiatives in specific ocean-related sectors, such as fisheries (see Section 2.2) and tourism.

Since graduating from the Least Developed Country category, Samoa has experienced substantial economic growth and development gains. Samoa graduated in 2014 from the United Nations' list of Least Developed Countries, in large part thanks to improvements in its gross national income and human development indicators (United Nations, 2018^[8]). It has achieved significant socioeconomic progress in areas such as health and education, driven by the government's commitment to sustainable development. For example, maternal mortality continued to decline, from 47 deaths per 100 000 births in 2014 to 43 in 2019, and under-5 mortality decreased from 18.7 per 1 000 deaths in 2015 to 17.4 in 2019. Besides, Samoa's Human Capital Index 2020 value of 0.55 remains slightly higher than those of Fiji (0.51), Tonga (0.53) and Tuvalu (0.45). The country's gross domestic product (GDP) increased consistently until 2020, rising by 18% between 2014 and 2020 (OECD, 2022^[9]). However, the economic fallout from a 2019 measles outbreak, immediately followed by the COVID-19 pandemic, has threatened to derail these gains. An online survey conducted by the United Nations Resident Co-ordinator Office in 2020 reported that two-thirds of Samoan households had experienced a decline in their chief source of income, 57% were eating less food overall, and nearly half (49.6%) were worried about being able to educate their children (United Nations, 2020^[10]).

Figure 1.2. Samoa's progress on nearly half of the SDGs has stagnated or reversed.



Source: Sachs et al. (2022_[11]), Sustainable Development Report 2022, <https://doi.org/10.1017/9781009210058>.

Despite progress in key development areas, Samoa is not on track to achieve most of the Sustainable Development Goals (SDGs). Since the adoption of the SDGs in 2015, Samoa has made significant strides in key areas of development such as poverty reduction, access to education, clean water and sanitation, climate action and the fight against undernutrition. This contrasts with persistent challenges in achieving other development goals, such as gender equality or inequality reduction. As of the end of 2022, Samoa had achieved two SDGs, namely SDG 12 on responsible consumption and production and SDG 13 on climate action, in large part thanks to its low volumes of waste and CO₂ emissions. On the other hand, the country is falling short on at least 12 of the other SDGs (Figure 1.2). It is nonetheless important to exercise caution when interpreting these results. As with many other Pacific SIDS, assessing and comparing Samoa's progress towards attaining the SDGs is difficult due to limited data availability, resulting in the country being unscored and unranked in the 2022 Sustainable Development Report (Sachs et al., 2022_[11]).

The pursuit of a sustainable ocean future is central to Samoa's vision of development. Samoa acknowledges that harnessing the potential of its ocean resources is essential for achieving sustainable economic growth and improving its people's livelihood. The government also recognises that the ocean is more than an economic resource, and represents a source of cultural identity and spiritual connection for many Samoans (Government of Samoa, 2020_[12]). As a result, Samoa's approach to the sustainable ocean economy is grounded in the principles of traditional knowledge, community engagement and inclusive governance. In recent years, the country has worked towards developing a policy framework that encourages sustainable marine management practices, including conservation measures and responsible exploitation of marine resources (see Chapter 2). By prioritising the ocean's sustainable use, Samoa seeks to base its development on a comprehensive and integrated vision that encompasses economic growth, social equity and environmental protection.

1.2. Composition and trends of Samoa's ocean economy

Samoa's economy is relatively concentrated and dependent on external transfers and tourism. Samoa presents many characteristics of the MIRAB model, a term coined in the 1980s to designate Pacific SIDS with an economic model based on "migration, remittances, aid and bureaucracy" (Bertram and Watters, 1985_[13]). As a result, the country is heavily reliant on external transfers, including official

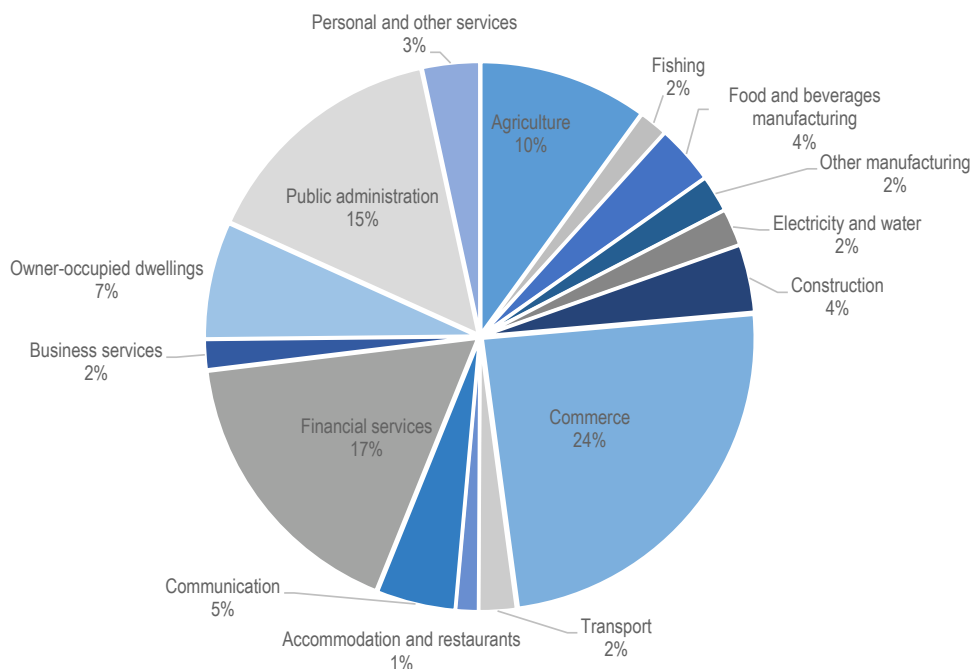
development assistance and remittances from Samoans living abroad, which accounted respectively for 13% and 30% of its gross national income in 2021. In some respects, however, Samoa has been gradually shifting away from a typical MIRAB model over the past two decades, with tourism representing an increasingly significant tranche of the economy.

While external transfers provide Samoa with significant income to help alleviate poverty and ease financial constraints, they also pose a challenge to its sustainable development. First, high dependence on external transfers can have negative implications in the long run, exposing Samoa to shifts in donor priorities and shifts in the global economy. Second, the heavy reliance on external transfers can sometimes lead countries to experience “Dutch disease” symptoms, a phenomenon where the influx of foreign currency leads to an appreciation of the exchange rate, making domestic industries less competitive and potentially leading to a decline in exports and economic diversification (Chami et al., 2018^[14]). Additionally, the growth in remittances has been mostly driven by the increasing use of seasonal worker schemes, which creates other issues for the country. A notable one is the depletion of the prime-age workforce, which can impact the productivity and skills availability of key sectors of the economy (see Section 3.2).


The main force driving Samoa’s GDP is the tertiary sector, which accounts for 70% of its economy. This is largely due to the leading roles played by commerce and financial services (accounting respectively for 24% and 17% of total GDP), which reflect in large part the importance of tourism and remittances for the country’s economy. The public administration, which is formally categorised as part of the tertiary sector, also plays a crucial role, representing around 15% of total GDP. Conversely, primary industries such as agriculture and fishing, and secondary industries, including manufacturing and construction, make a relatively minor contribution to the economy, at respectively 12% and 10%.

Figure 1.3. The tertiary sector makes up more than two-thirds of Samoa’s GDP

GDP by industry (% of total), 2022



Source: Samoa Bureau of Statistics (2023^[15]), National Accounts, <https://www.sbs.gov.ws/national-accounts/>

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Assessing the economic impact of ocean-related industries on Samoa's economy is a complex task, and a precise picture is not yet available. The ocean economy encompasses a wide range of sectors, each with its specific challenges in terms of data collection and analysis. Consistent and comparable economic data on ocean activities is not yet available, largely due to the difficulty of isolating the ocean-related component from aggregate categories found in standard economic statistics (Jolliffe, Jolly and Stevens, 2021^[16]). While satellite accounting offers promise, including for Samoa, which has launched a tourism satellite account pilot, the methods are still experimental and the results preliminary. Additionally, some ocean economy activities are informal, making it challenging to accurately measure the ocean's contribution to Samoa's GDP. Small-scale fishing is partly informal and carried out on a subsistence basis, which makes it difficult to capture its economic impact comprehensively using traditional measures of economic output. As described in Sections 1.3 and 1.4, the ocean economy is also subject to a range of external and environmental factors, including global economic trends, natural disasters and changing weather patterns, that can significantly affect its contribution to the economy from one year to the next. Table 1.1 provides an initial mapping of key ocean economy sectors against the GDP categories used by the Samoa Bureau of Statistics. This, while imperfect, helps to approximate the economic importance of the ocean to Samoa's economy.

Table 1.1. Mapping ocean economy industries to Samoa's national accounts

Ocean economy sectors (OECD, 2021)	Possible Samoa Bureau of Statistics-allocated sector for economic reporting	Main data sources in Samoa
Marine fishing	Fishing	Ministry of Agriculture and Fisheries
Marine aquaculture		
Processing and preserving of marine fish, crustaceans and molluscs		
Maritime passenger transport	Transport	Samoa Ports Authority; Ministry of Works, Transport and Infrastructure
Maritime freight transport		
Maritime ports and support activities for maritime transport		
Maritime ship, boat and floating structure building	Other manufacturing	Ministry of Works, Transport and Infrastructure
Offshore extraction of crude petroleum and natural gas	Not applicable	Not applicable
Maritime manufacturing, repair and installation	Other manufacturing	
Marine and coastal tourism	Accommodation and restaurants; food and beverages manufacturing; commerce; business services	Samoa Tourism Authority; Ministry of Natural Resources and the Environment
Offshore industry support activities	Construction; other manufacturing	Ministry of Works, Transport and Infrastructure
Ocean scientific research and development	Public administration	Ministry of Education; Scientific Research Organisation of Samoa
Marine and seabed mining	Not applicable	Not applicable

Source: Authors' representation based on Jolliffe, Jolly and Stevens (2021^[16]), "Blueprint for improved measurement of the international ocean economy: An exploration of satellite accounting for ocean economic activity", <https://doi.org/10.1787/18151965> and Samoa Bureau of Statistics (2023^[15]), National Accounts, <https://www.sbs.gov.ws/national-accounts/>.

Detailed analysis of Samoa's GDP shows that the services industry, with tourism at its core, is a significant and growing contributor to the economy. More than 60% of Samoa's GDP relies on the services industry, with tourism being its largest contributor and accounting for nearly 25% of the country's GDP (Pacific Tourism Organization, 2023^[17]). Tourism, which caters primarily to international visitors and relies largely on Samoa's sociocultural and environmental assets, grew significantly in the years before the measles outbreak and the COVID-19 pandemic. From 2012 to 2019, international tourist arrivals

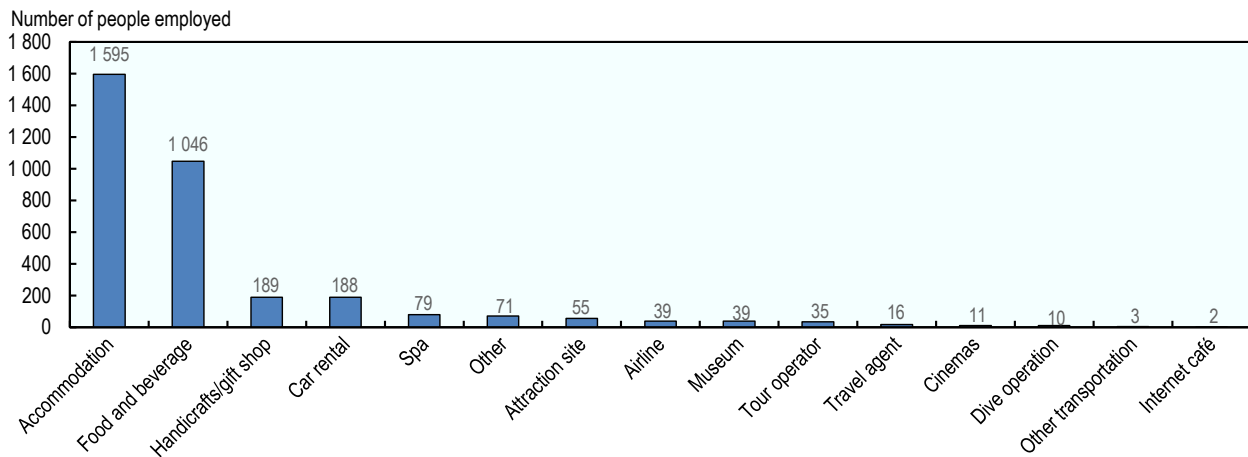
increased by 34%, from 135 000 to 181 000, and tourism receipts totalled USD 206.1 million in 2019, an increase of about 39% from USD 148.2 million in 2012 (World Tourism Organization, 2022^[18]).

Tourism has significant economic and social benefits for Samoa, contributing to employment and supporting broader economic activity. As a labour-intensive industry, tourism provides employment opportunities for Samoans across a large range of skill levels, particularly in the hospitality and retail sectors. This includes the accommodation and food services sector, which accounted for 6.2% of total formal employment in Samoa in 2019 and is dominated by small and medium-sized enterprises. In addition to direct employment, the tourism industry also generates spill-over effects in other sectors of the economy. Tourist demand for locally sourced food and handicrafts creates opportunities for small-scale farmers and artisans. Moreover, the development of infrastructure and transportation services to support tourism also benefits other industries, such as agriculture, construction and manufacturing. Given its skew towards international visitors, the tourism industry is a significant source of export earnings; in 2019, Samoa's international tourism receipts represented 61% of total exports (World Bank, 2023^[19]).

The accommodation and food and beverage sectors account for the majority of direct employment in the tourism industry. In 2020, accommodation alone represented nearly half of direct employment in the tourism sector (with around 1 600 employees, or 47% of total), followed by the manufacturing of food and beverages (around 1 000 employees, or 31%). Together, these two sectors represent approximately 80% of Samoa's direct employment in tourism (Figure 1.4). Handicraft and transportation come next in the ranking of sectors with the most employment related to tourism.

Figure 1.4. Tourism directly employed more than 3 000 people in Samoa in 2020

Tourism employment, 2020



Source: (Government of Samoa, 2022^[20]), *Samoa Tourism Sector Plan 2022/2023 – 2026/2027*, <https://www.mof.gov.ws/wp-content/uploads/2023/02/Tourism-Sector-Plan-2022-2027.pdf>.

StatLink  <https://stat.link/lr3nyi>

Other sectors of the ocean economy beyond tourism represent a smaller share of Samoa's GDP. The rest of the ocean economy, excluding tourism, accounts for a relatively modest 3% of the country's GDP. This includes activities such as fisheries, shipping and renewable energy. The fisheries sector represents around 1.8% of GDP and includes subsistence and commercial fishing. Tuna is the most important commercial fishing product in terms of revenue (Table 1.2) and accounts for 90% of Samoa's fish exports. The relatively small size of the fishing industry is reflected in its modest contribution to the

labour market. It accounted for only 0.4% of total employment in 2019, according to statistics from the Samoa Bureau of Statistics and the country's National Provident Fund.

Table 1.2. Tuna fisheries contribute to Samoa's economy through license revenue, employment and exports

Economic contribution of Samoa's tuna fisheries (2010-19)

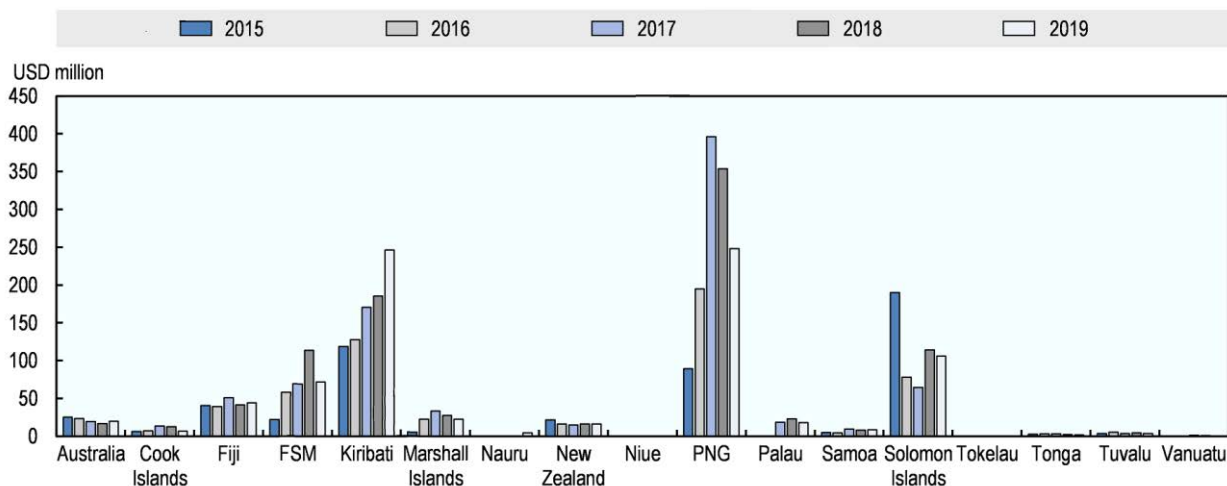
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Licence and access fee revenue (USD million) ^a	0.7	0.6	0.5	0.8	0.9	1.0	1.0	1.4	1.3	1.1
Onshore processing volumes (metric tonnes) ^b	4 261	1 873	2 725	2 209	1 344	1 329	5 702	7 284	5 107	5 539
Employment (number) ^c	414	395	415	325	327	327	387	273	246	346
Exports (USD million) ^d										
Japan ^e	0.021	0.014	0.023	0.005	0	0.757	0.592	0.229	0.062	0
United States ^f	0.34	0.34	0.18	0.01	0.00	0.52	0.73	0.45	0.63	0.30
Balance of payments (USD million) ^g	n.a.	n.a.	n.a.	2.4	1.4	4.9	4.1	5.8	5.7	5.4
Employment earnings (USD million) ^g	n.a.	n.a.	n.a.	0.7	0.4	1.6	1.2	1.6	1.6	1.6
Local purchases (USD million) ^g	n.a.	n.a.	n.a.	0.5	0.3	1.7	1.2	1.5	1.6	1.6

Note: n.a. = not available. a) Forum Fisheries Agency estimates. b) Volume processed refers only to longline/purse seine catch processed to some degree domestically onshore or on board vessels; excludes volumes transhipped or delivered directly to offshore canneries. c) Includes harvest, processing and ancillary services sectors, observers and government employees (artisanal sector not included). Based on the Forum Fisheries Agency's data collection project. d) Includes catch by nationally registered vessels that may not have been landed onshore. e) Japan Customs (<https://www.customs.go.jp/toukei/info/index.htm>) (excludes frozen whole tuna). f) National Marine Fisheries Service (http://www.st.nmfs.noaa.gov/st1/trade/monthly_data/TradeDataCountryMonth.html). g) Derived using per tonne contribution. Source: FFA (2022^[21]), Economic and Development Indicators and Statistics: Tuna Fisheries of the Western and Central Pacific Ocean 2020", https://www.ffa.int/economic_indicators.

Fisheries play an important role in livelihoods, but the industry remains limited in size compared to those of other Pacific SIDS. As in many Pacific SIDS, the fishing sector plays a key role in Samoan society through its cultural, social and economic ties. In a way, the representation of fishing in Samoa's national accounts does not adequately reflect its socioeconomic importance, since it does not capture the links to post-harvest activities (e.g., processing or transshipment). In addition, beyond its contribution to the economy, the fishing industry in Samoa is also important for livelihoods, providing formal or informal employment and a source of food for many communities, including in times of crisis. However, the sector is smaller than in other Pacific SIDS, such as Kiribati, Papua New Guinea and the Solomon Islands, where offshore commercial fishing is a significant contributor to the economy. This difference is largely due to Samoa's geographic characteristics, including the size and location of its EEZ (Figure 1.5).


Figure 1.5. The activity of Samoa's tuna fisheries is relatively small compared to those of other Pacific countries

Value of tuna catch (2015-2019), in USD million



Note: The graphic presents the annual value of fleet catch in national waters by members of the Pacific Islands Forum Fisheries Agency (FFA). FSM refers to the Federated States of Micronesia and PNG to Papua New Guinea.

Source: FFA (2022^[22]), "Value of WCPFC-CA Tuna Fisheries 2022", https://www.ffa.int/economic_indicators.

StatLink  <https://stat.link/b9lo0n>

The shipping sector represents around 0.4% of the country's GDP and includes activities related to port services, vessel operations and maritime transport. Samoa's international port, located in Apia, is the gateway for nearly all goods entering the country. It is also used by the fishing fleet (e.g. for transshipment or offloading), and by cruise boats and cable boats. In recent years, the volume of traffic in Samoa's international port has been limited by capacity constraints related both to lack of equipment (e.g. tugboats) and insufficient storage space. It has reached its capacity in terms of container space and has no dedicated dock for cruises, constraining potential traffic. In addition to the international port, two wharves (Aleipata and Asau), under the jurisdiction of the Samoa Ports Authority, are used for freight and passenger services. The Samoa Shipping Corporation, another state-owned enterprise, provides marine shipping and ferry services between Samoa's two main islands and American Samoa.

The renewable energy sector represents a very small share of Samoa's GDP. Although it accounts for only 0.2% of the country's GDP, the importance of renewable energy is expected to increase. Renewable energy represented 38% of Samoa's total energy generation in 2020 (with 24% in hydropower and 14% in solar power), but the government has committed to reach 70% in renewable energy use by the end of 2031 in its Low Emissions Development Strategy 2021-2030 (IRENA, 2022^[23]).

1.3. Sustainability trends of Samoa's ocean economy

Samoa is highly exposed to natural hazards, including tropical cyclones, flooding, droughts and earthquakes. This reflects its position next to the Pacific Ring of Fire, which displays a high degree of tectonic activity and leaves Samoa vulnerable to earthquakes and tsunamis (World Bank, 2021^[24]). Due to the El Niño Southern Oscillation, Samoa suffers from periods of drought and extreme rainfall (Kinoshita et al., 2022^[25]). Generally, as with other low-lying SIDS, coastal flooding is common. Recent history has demonstrated its susceptibility to natural hazards. Samoa has suffered multiple cyclones, including major

events in 1990, 1991 and 2012, an earthquake and a tsunami in 2009, and drought in 2015 (Kinoshita et al., 2022^[25]).

This has important implications for ocean economy sectors. Maritime transport, for example, can be severely disrupted if natural disasters physically degrade or destroy ports, which are naturally more prone to damage due to their position in low-lying coastal areas (Verschuur, Koks and Hall, 2020^[26]). Disruptions at the Port of Apia, the only international port in the country, can have major economic and social implications, including by interfering with the safe delivery of emergency aid (ADB, 2023^[27]). Tourism can also be severely affected by natural disasters. Destruction of critical infrastructure (e.g. roads, airports, telecommunications) in the immediate aftermath of a disaster can preclude the delivery of tourism services (Rosselló, Becken and Santana-Gallego, 2020^[28]), and rebuilding requires time and resources. After the 2009 tsunami in Samoa, it took almost two years to restore damaged tourism infrastructure (Haque, 2011^[29]). In the longer run, disasters can deter visitors and reduce a location's tourist appeal (Rosselló, Becken and Santana-Gallego, 2020^[28]). As for the fisheries sector, the 2009 tsunami destroyed fishing equipment and infrastructure, impeding fishing operations (FAO, 2011^[30]).

Natural disasters are less frequent than in Samoa's Pacific neighbours but have a relatively large economic footprint. Among Pacific Island countries, Samoa was ranked sixth in terms of the frequency of natural disasters over the 1980-2020 period (Kinoshita et al., 2022^[25]), having experienced 10 such disasters in the past three decades, over a period where Papua New Guinea and Fiji experienced roughly 50 (Kinoshita et al., 2022^[25]). Nevertheless, the economic damage in Samoa has generally outpaced that of its neighbours in the Pacific. Each of the two cyclones of 1990 and 1991 is estimated to have cost the Samoan economy more than 150% of its GDP, the highest ever recorded in the region (Kinoshita et al., 2022^[25]). The 2009 earthquake/tsunami resulted in losses and damages equivalent to approximately 35% of GDP (Kinoshita et al., 2022^[25]). This disproportionate impact indicates Samoa's broader socioeconomic vulnerabilities. Roughly 70% of its population and infrastructure are situated in coastal low-lying areas (Kinoshita et al., 2022^[25]), increasing the risk of losses and damages. The possibility of repeated disasters could leave Samoa in a disaster-recovery cycle that would suppress GDP growth, enlarge fiscal and current account deficits, threaten debt sustainability¹ and result in economic decline and the failure of livelihoods (IPCC, 2022^[31]).

The health of Samoa's marine environment is threatened not only by natural disasters but also by environmental pressures, including those related to ocean-based industries. Though it performs relatively well on aggregate measures of environmental quality (see Figure 1.2 and Figure 1.12), its marine environment is not immune to issues like waste and land-based pollution, over-exploitation of resources, poorly planned development activities and invasive species (Government of Samoa, 2013^[32]). Tourism is often cited as contributing to ocean pollution, including pollution with plastics (OECD, 2022^[33]). Samoa's total annual consumption of plastic products and packaging is estimated at roughly 6 830 tonnes (34.5 kg per capita), about 10% of which is mismanaged and potentially leaked to the ocean, largely due to a lack of adequate infrastructure (Asari et al., 2019^[34]). Overfishing is also taxing Samoa's marine environment. The latest State of the Environment Report, released in 2013, identified overfishing in coastal areas and of specific types of tuna (i.e. older larger albacore stock) as salient issues (Government of Samoa, 2013^[32]). The Global Fishing Index, which assesses the governance and sustainability of marine fisheries, notes that Samoa has "made limited progress restoring fish to sustainable levels" and that since much of its fish stocks (65%) are unassessed, their sustainability status is ambiguous (Minderoo Foundation, 2022^[35]). Development and extraction activities in coastal areas (e.g. sandmining, coastal reclamations and construction), especially where they occur without proper vetting, have pernicious effects on Samoa's marine environment (e.g. increased risk of coastal erosion). Finally, the introduction, whether accidental or intentional, of alien invasive species threatens Samoa's marine and terrestrial ecosystems. Meanwhile, native invasive species, for example, the crown of thorns starfish, can destroy coral reefs (Government of Samoa, 2019^[36]).

These stressors have tangible implications for ocean-related industries. Ocean-related industries, such as fisheries (e.g. due to dumped catch and net repairs) and tourism (e.g. due to a reduction in tourist appeal) can incur plastic leakage-induced economic costs or revenue losses.² The economic downside of overfishing is well acknowledged: globally, mismanagement of fisheries is estimated to result in economic losses of USD 83 billion (World Bank, 2017_[37]). This demonstrates the synergies between averting and/or mitigating environmental pressures and improving the prospects of the ocean economy. The environmental threats are also indicative of the safeguards necessary for the ocean economy. Adequate enforcement of biosafety requirements is vital to curb the risk of introducing invasive species through maritime transport, while environmental impact assessments are crucial for ensuring that development respects the limits of the marine environment. It is worth noting that due to the lack of a systematic framework for measuring interdependency between the ocean economy and the marine environment, a comprehensive sense of the relationship between ocean-based industries and environmental pressures on Samoa's ocean is unavailable.

The shifting dynamics associated with climate change are intensifying risks for Samoa's ocean economy. By mid-century, Samoa is expected to face an increase in mean annual temperatures and the number of extremely warm days, a decrease in annual precipitation (although with no projected risk of drought hazard), a simultaneous rise in the intensity of extreme rainfall events, and the intensification of cyclones (in terms of wind speed and rainfall) (Kinoshita et al., 2022_[25]). Marine ecosystems would be particularly affected. Increased carbon dioxide absorption would exacerbate ocean acidification; a rise in sea level would augment coastal erosion; and temperature increases would worsen coral bleaching (Government of Australia, n.d._[38]). The impact of these alterations, and others, on two ocean economy sectors, fishing and tourism, are synthesised in Table 1.3. According to projections, the expected economic losses related to climate change in Samoa amount to 3.8% of GDP, with the impact of tropical storms being paramount (Asian Development Bank, 2013_[39]).

Table 1.3. The physical effects of climate change have implications for tourism and fisheries

Sector	Examples of climate change impacts
Tourism	<ol style="list-style-type: none"> 1. Destruction or deterioration of such marine resources as coral reefs and tropical fish stocks, which boost tourist appeal 2. Destruction or deterioration of tourism-specific (e.g. hotels, airports) and general critical infrastructure (e.g. roads) due to more intense cyclones
Fisheries	<ol style="list-style-type: none"> 1. Reduction of fish catch due to marine heat stress (estimated at 20% in the Northeast Pacific) 2. Declines in fish stocks related to ocean acidification 3. Geographical shifts in the distribution of fish stocks

Source: Kinoshita et al. (2022_[25]) Samoa: Technical Assistance Report—Climate Macroeconomic Assessment Program, <https://www.imf.org/en/Publications/CR/Issues/2022/03/21/Samoa-Technical-Assistance-Report-Climate-Macroeconomic-Assessment-Program-515505>.

Investment in adaptation to climate change is critical to safeguard the potential of Samoa's ocean economy. This is made apparent by its high degree of climate change vulnerability and relatively low readiness for climate change: Samoa has a climate change vulnerability score of 0.487, ranking 128th globally (out of 182 countries), and a climate change readiness score of 0.428, ranking 88th globally (of 192 countries). A lower rank (higher score) implies more vulnerability and less readiness respectively³ (Notre Dame Global Adaptation Initiative, 2023_[40]). Meanwhile, the International Monetary Fund (IMF) posits that adaptation-related spending needs in Samoa—for transportation, flood mitigation, water and sanitation, the environment, agriculture and fisheries, and early warning systems, will total about USD 426 million over 2022-2026, or about 11% of GDP (Kinoshita et al., 2022_[25]). Given the direct and indirect links between adapting to climate change and Samoa's ocean economy (e.g. how critical climate-resilient transport is for climate-resilient tourism), financing adaptation is essential for the performance of

ocean-related industries. Climate-proofing the transport sector is expectedly the costliest, and estimates suggest it will total USD 231 million from 2022-2026, more than half of Samoa's total spending needs for adaptation. Adapting agriculture and fisheries to climate change, by comparison, is estimated to cost USD 22 million (Kinoshita et al., 2022^[25]).

Safeguarding ocean health also promotes climate change adaptation. Ecosystem-based approaches that leverage ecosystem services and biodiversity can promote climate change adaptation: for example, mangrove rehabilitation can act as a buffer against storm surges (Chong, 2014^[41]). Given the pace and severity of climate change, however, the effectiveness of nature-based solutions is limited, for example in the ability of mangrove forests and saltmarshes to withstand the rise in sea levels (Seddon et al., 2020^[42]). Their success in Samoa is predicated on an urgent assessment of the viability of the various ocean-based adaptation solutions. By including an ecosystem-based approach to adaptation in the Samoa Ocean Strategy (see Chapter 2), it has taken an important first step in this regard.

Adaptation to climate change is vital for long-term development, but its economic efficiency depends on the terms on which capital can be accessed. IMF simulations⁴ reveal that financing adaptation not only yields net savings in averted disasters but also minimises the fiscal impact. In Samoa, adaptation financing equivalent to an additional 2% of its GDP between 2022-2027 would avert losses equivalent to 4.5% of 2021 GDP in the event of a representative natural disaster in 2027 (Kinoshita et al., 2022^[25]). The reduction in recovery/reconstruction costs resulting from *ex ante* adaptation investments, meanwhile, would limit the impact on the debt-to-GDP ratio even if recovery and reconstruction were financed entirely through concessional loans (Kinoshita et al., 2022^[25]). Nevertheless, the IMF estimates a gap in climate financing. Adequate support for adaptation, including from development partners, is indispensable for Samoa's resilience and to ensure economically optimal outcomes in the long run, including for its ocean economy.

Decarbonisation is vital for Samoa to minimise its economic vulnerabilities. While Samoa's greenhouse gas emissions have been consistently increasing since the 20th century, they still account for a negligible share of global greenhouse gas emissions (Climate Watch, 2023^[43]). In its latest nationally determined contributions, Samoa has committed to reducing its emissions by 26% by 2030 (Government of Samoa, 2022^[44]). This entails decarbonising the energy sector, the largest contributor to its greenhouse gas emissions (Climate Watch, 2023^[43]), which would allow Samoa to shed a major economic vulnerability, its heavy reliance on fossil fuel imports. Due to its small size (and inability to leverage economies of scale to reduce unit costs), geographical remoteness, and low transport connectivity characteristic of SIDS (UNCTAD, 2014^[45]), the dependence on fossil fuel imports renders energy costs particularly high. As of 2019, fuel imports accounted for 20% of its total imports and 8% of its GDP, ranking it third and sixth respectively among Pacific Island Countries (SPC, 2023^[46]). This has adverse consequences on the economy, for example, through heightened costs of production and consumption, current account deficits and disproportionate foreign exchange spending on imports, and leaves it vulnerable to energy price shocks.

Decarbonising maritime transport is a key component of Samoa's low-carbon transition. As of 2019, energy and agriculture accounted for over 50% of Samoa's emissions, followed by waste and land use change and forestry (Climate Watch, 2023^[43]). Emissions from the transport sector dominate energy-related emissions (Core CarbonX Solutions Private Ltd., n.d.^[47]). Decarbonising transport, both maritime and terrestrial, is thus a core component of its mitigation priorities. Green maritime transport would not only boost the commercial viability of maritime transport operations, which are hamstrung by the exposure to high energy costs but also have positive economy-wide spillovers, given the centrality of maritime transport in SIDS economies (UNCTAD, 2014^[45]). In practice and as elsewhere, however, green maritime transport is still nascent in Samoa⁵ although initiatives are emerging to support the transition. In 2023, the government of Japan, in collaboration with the United National Development Programme, announced an allocation of USD 15.5 million to accelerate the electrification of transport and exploration of low-carbon propulsion systems in Samoa (UNDP, 2023^[48]). At the regional level, Samoa is part of the Blue Pacific

Shipping Partnership, a coalition of six Pacific islands, which aims to mobilise financing for fully decarbonising shipping by 2050 (Doherty, 2019^[49]).

Moreover, ocean-based resources can support climate change mitigation. Empirical results affirm that marine conservation, by reinforcing carbon sequestration, can advance climate change mitigation priorities (Jacquemont et al., 2022^[50]). The ocean also offers opportunities to expedite decarbonisation. While wind currently accounts for a small share of Samoa's renewable energy mix, especially compared to solar, hydro and bioenergy, preliminary assessments and discussions of the viability of offshore wind are being led by Samoa's Electric Power Corporation. Likewise, wave or tidal energy, as well as floating solar, represent opportunities over a longer time horizon. For example, existing estimates of wave power and total costs suggest that while wave energy conversion in Apia is not economically viable, the south coasts may have sufficient wave power to support wave energy conversion (SPC, n.d.^[51]). Nonetheless, the barriers – whether socio-environmental, regulatory and legal, infrastructure-related, or financial and economic – to the adoption of ocean energy technologies in island and remote coastal areas are well-known (OES, 2020^[52]). Given Samoa's susceptibility to natural hazards, the viability of ocean energy technologies in the country will depend on their robustness and resilience to these hazards.

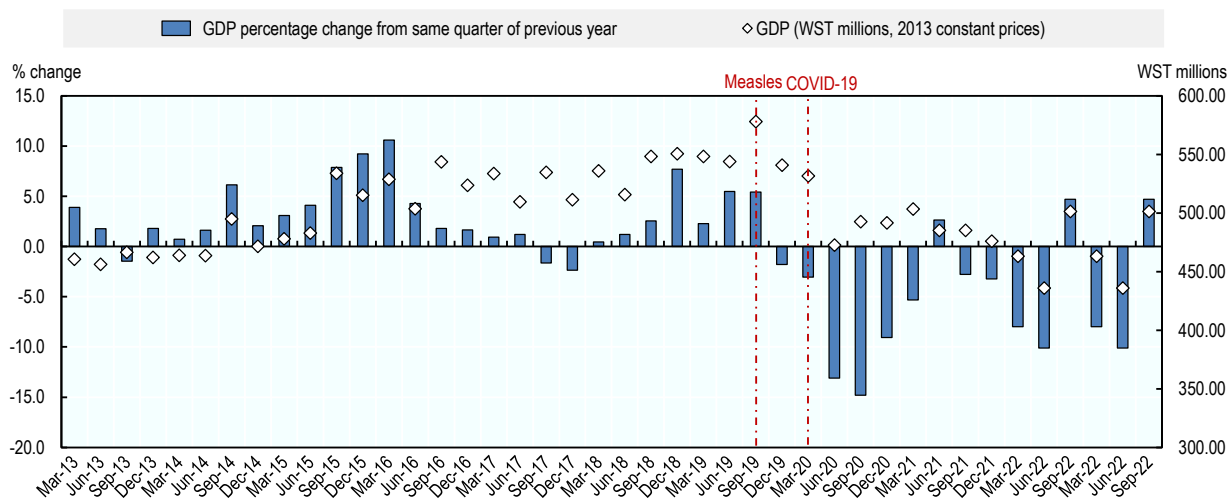
1.4. Samoa's ocean economy in the face of recent shocks

Samoa's economy contracted heavily during the COVID-19 pandemic, owing mainly to the suspension of international tourism.

Samoa was quite successful in mitigating the health repercussions of the pandemic. Drawing on its experience with the measles outbreak in late 2019, the Samoan government acted early and quickly to contain the pandemic, deploying a preventative strategy. The closing of its borders since March 2020 effectively prevented the virus from arriving on its shores, and prompt quarantines and lockdowns curtailed transmission (Yemoh and Taotofi, 2021^[53]). Samoa recorded its first COVID-19 case in November 2020, but the first case of community transmission was only recorded in March 2022 (Westerman, 2022^[54]). Despite challenges (e.g. vaccine hesitancy, sluggish vaccine rollout), Samoa had fully vaccinated roughly 80% of its population by late 2022 (Mathieu et al., 2021^[55]). An effective health sector response to the pandemic was critical in Samoa, where the prevalence of chronic non-communicable illnesses, such as obesity, diabetes and cardiovascular disease (Neuendorf, Neuendorf and Yakub, 2021^[56]), exacerbated the risks of severe illness from COVID-19.

However, Samoa's economy was hit hard by the COVID-19 pandemic. The Samoan economy contracted significantly after the onset of the global pandemic in March 2020. In every quarter of 2020, it experienced declines in GDP levels, compared to the same quarter in the preceding year (Figure 1.6). The magnitude of the contraction was largest in Q3-2020, with quarterly GDP falling by 14.8% compared to the same quarter in 2019. As a result, in 2020, Samoa was downgraded from upper middle-income, which it had recently attained in 2016, to lower middle-income status (OECD, 2021^[57]). The economic impact of COVID-19 exacerbated that of the measles outbreak in late 2019. The two successive health shocks and the associated containment measures stagnated human and economic activity. Between Q4-2019 and Q1-2021 (inclusive), Samoa had six consecutive quarters of negative growth, and by the end of 2021, the quarterly GDP level had effectively reverted to end-2014 levels.

Figure 1.6. Two successive health shocks devastated the Samoan economy



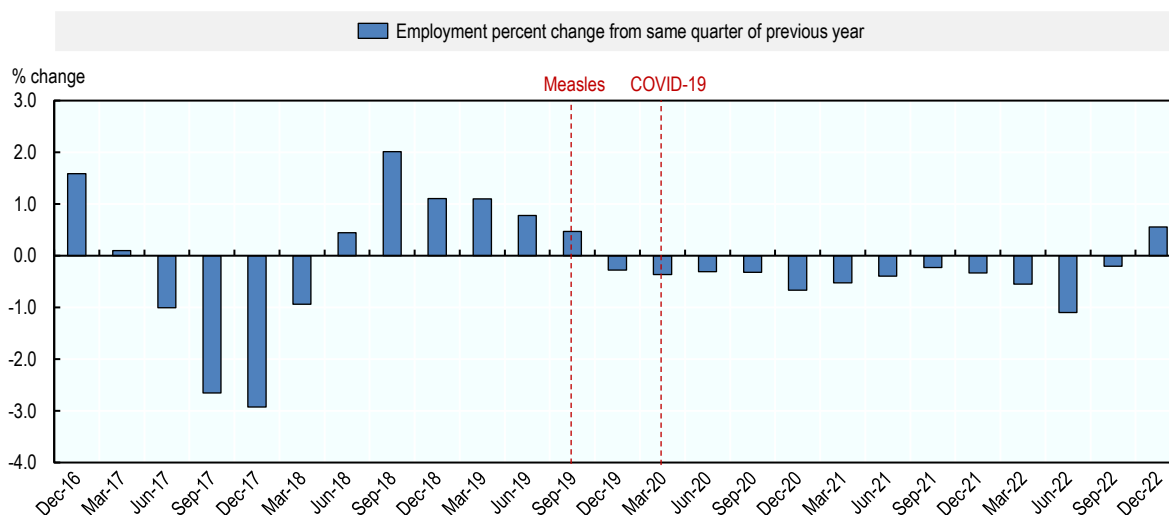
Note: Real GDP at 2013 purchaser prices.

Source: Samoa Bureau of Statistics (2023^[15]), National Accounts, <https://www.sbs.gov.ws/national-accounts/>.

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Echoing the decline in GDP, employment also fell due to COVID-19. After the onset of the pandemic, the slowdown in the economy led to substantial job losses and layoffs, with some fluctuation in different financial quarters. Each quarter from Q4-2019 through Q3-2022 inclusive saw a drop in employment relative to the same quarter in the previous year (see Figure 1.7). Wages were more resilient. For example, total average wages grew by 0.85% between March 2020 and March 2021. The increase in wages in the early months of the pandemic can be partly attributed to severance benefits in particularly hard-hit sectors (e.g. tourism), as well as additional income from fiscal stimulus packages, which helped avert further economic damage (Samoa Bureau of Statistics, 2020^[58]).

Figure 1.7. Employment trends reflected the GDP contraction



Note: Real GDP at 2013 purchaser prices

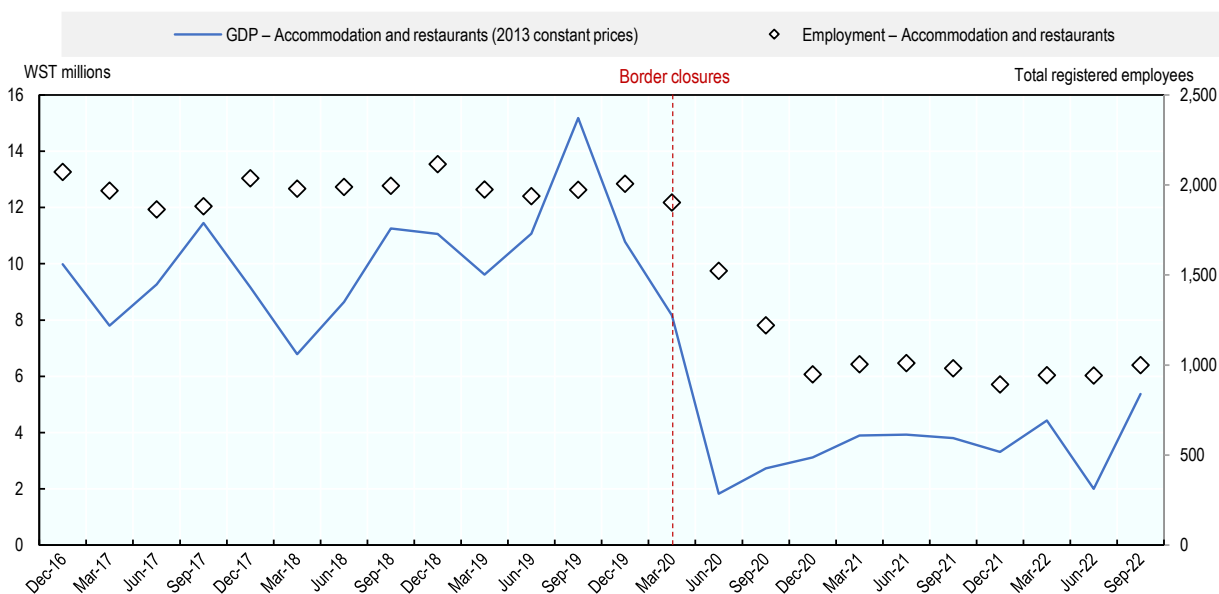
Source: Samoa Bureau of Statistics (2023^[59]), Employment Statistics, <https://www.sbs.gov.ws/employment-statistics/>.

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Despite some commonalities, not all countries in the Pacific were affected equally. In 2020, Samoa's GDP growth rate of -3.1% was middling, while Tuvalu had a positive GDP growth rate (1%) and the Fijian economy contracted substantially, by 17.2% (Asian Development Bank, 2022^[60]). Samoa's economic contraction was particularly pronounced in 2021. Of its peer countries,⁶ only the Cook Islands (-29.1%) and Palau (-17.1%) had a worse negative GDP growth rate than Samoa's (-7.1%) (Asian Development Bank, 2022^[61]). Factors such as relative dependence on tourism receipts and commodity exports, the stringency of containment measures, and the adequacy and effectiveness of government support explain variations in the impact of COVID-19 on the Pacific Island countries (IMF, 2021^[62]).


Samoa's reliance on tourism, one of its ocean economy sectors, underpinned its relative vulnerability to the COVID-19 crisis. Among Pacific Island countries, tourism-dependent economies (Fiji, Palau, Samoa, Tonga and Vanuatu) suffered the largest short-term output losses during the pandemic, followed by commodity exporters (Papua New Guinea, Solomon Islands) and more mixed economies (Kiribati, Marshall Islands, Micronesia, Nauru, Tuvalu) (IMF, 2021^[62]). In Samoa, the closure of borders halted international arrivals and the associated revenue and brought the tourism sector to a standstill. Tourist arrivals during Samoa's typical peak tourist season (June-September inclusive) fell from nearly 74 540 in 2019 to 1 071 in 2020 and 662 in 2021 (UNWTO, n.d.^[63]), with significant repercussions on tourism-related industries. As shown in Figure 1.8, the contribution of restaurant and accommodation activity to GDP and employment plummeted after March 2020. Estimates suggest that by March 2021, virtually all the resorts outside Apia had closed (Pacific Private Sector Development Initiative, 2021^[64]). Overall, more than 70% of tourism jobs were adversely affected by job losses or reduction in work hours from COVID-19 (Pacific Private Sector Development Initiative, 2021^[64]).

Figure 1.8. After borders closed, the accommodation and restaurant industries came to a standstill



Note: Real GDP at 2013 purchaser prices.

Source: Samoa Bureau of Statistics (2023^[15]), National Accounts, <https://www.sbs.gov.ws/national-accounts/>; Samoa Bureau of Statistics (2023^[59]), Employment Statistics, <https://www.sbs.gov.ws/employment-statistics/>.

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The shutdown of tourism had cascading consequences across the economy. During the pandemic, the lack of tourists not only reduced the demand for accommodation and food and beverage services but

also depressed the income of small businesses and local merchants for whom tourist demand was a key source of revenue. Stores in the vicinity of resorts shut down and monthly earnings of handicraft stalls plummeted. A high percentage of the small businesses that closed during the pandemic had links to the tourism sector (Connell and Taulealo, 2021^[65]). This negative “multiplier effect” across the economy reflects the important linkages between tourism and other economic sectors and industries. In addition to accommodation and food and beverage services, other sectors, like transport, food processing, fishing and agriculture, and utilities are intimately associated with tourism (Honeck, 2012^[66]). Fish vendors were affected by the drop in tourism, since demand from restaurants and hotels catering to foreign visitors ceased (Connell and Taulealo, 2021^[65]).

The pandemic also directly depressed other ocean economy sectors, like fisheries and maritime transport. Maritime transport slowed, and paralleling global and regional trends, arrivals of cargo and passenger ships in Samoa dropped dramatically. Cargo vessel calls dropped by about 12% in 2020, and combined passenger and cargo vessel calls dropped by about 16% (UNCTAD, 2022^[67]). Given the dependence of small island developing states on maritime transport for connectivity and trade, including the import of essential goods (UNCTAD, 2021^[68]), the disruption had widespread socioeconomic consequences (e.g., shortages of inputs and necessities).

In developing countries, COVID-19 adversely impacted the offshore fisheries sector, due to input shortages, depressed demand both internationally and domestically, transportation and logistical challenges, lack of technical assistance and export restrictions (Alam et al., 2022^[69]). For Samoa’s tuna industry, travel restrictions and offload permitting issues resulted in tuna shipments being turned back from export destinations.⁷ This resulted in a loss of revenue, especially since the economic downturn capped local demand for high-value products typically intended for foreign markets (Pacific Islands Forum Secretariat, 2021^[70]). Structural issues, such as the lack of adequate cold storage facilities for fish products, worsened prospects. Measures to contain and/or limit the spread of COVID-19 meant that port inspections and observer activities were suspended, which increased the risk of illegal, unreported and unregulated fishing (Rheeny, 2020^[71]) and more broadly, overfishing (see Section 1.3). The volume of tuna catch fell by over 30% between 2019 and 2022 (FFA, 2022^[22]), reflecting a reduction in fishing in Samoa’s EEZ (Government of Samoa, 2022^[72]). Overall, the economic output (measured as GDP) of the fisheries sector declined by 12.1% in 2020 (compared to 2019) and by a further 1.4% in 2021 (compared to 2020) (Samoa Bureau of Statistics, 2023^[15]). Likewise, employment in the sector fell by 6.6% in 2020 (compared to 2019), 25% in 2021 (compared to 2020) and 24.7% in 2022 (compared to 2021) (Samoa Bureau of Statistics, 2023^[59]).

The socioeconomic fallout of the crisis was also significant. An online survey conducted by the United Nations in June/July 2020 demonstrated a general deterioration in societal welfare. Sixty-eight percent of Samoan respondents said they had lost income. Almost half of households had at least one member unemployed; meanwhile, 71% of respondents had trouble repaying debts because of the pandemic and related restrictions (United Nations, 2020^[10]). School closures negatively affected educational outcomes: approximately 20% of students did not have access to education, one reason being the lack of access to online learning platforms (United Nations, 2021^[73]). As elsewhere, the pandemic also amplified gender disparities, especially due to a rise in the incidence of domestic and partner violence and unpaid domestic labour (e.g. childcare) (UNESCAP, 2020^[74]). Given impediments in accessing financial services, information and technology, and business networks, women-owned enterprises in Samoa lacked the tools required for resilience during the crisis (UNESCAP, 2020^[74]).

The government’s fiscal measures helped Samoans weather the storm. Drawing on support from development partners, the Samoan government deployed fiscal packages in two phases. The first phase, introduced in fiscal year 2020 and amounting to 3.1% of GDP, was aimed at businesses and households affected by the pandemic, and buttressed health, education, food security and public services (IMF, 2021^[75]). The second phase, introduced in fiscal year 2021 and amounting to 4.2% of GDP, extended the measures of the first phase and introduced new mechanisms to support vulnerable firms and households

that the first batch of measures had not reached. The second phase also shored up community-based primary healthcare services and unemployment benefits (IMF, 2021^[75]). Despite the fiscal stimulus, Samoa recorded a fiscal balance surplus in both 2020 (1.74% of GDP) and 2021 (5.37% of GDP) (IMF, 2023^[76]), driven by improvements in tax administration and grant inflows (IMF, 2023^[5]). As a result, Samoa's debt-to-GDP ratio declined from 44.29% in 2019 to 43.73% in 2020, followed, nevertheless, by an uptick in 2021 to 46.3% (IMF, 2023^[76]).

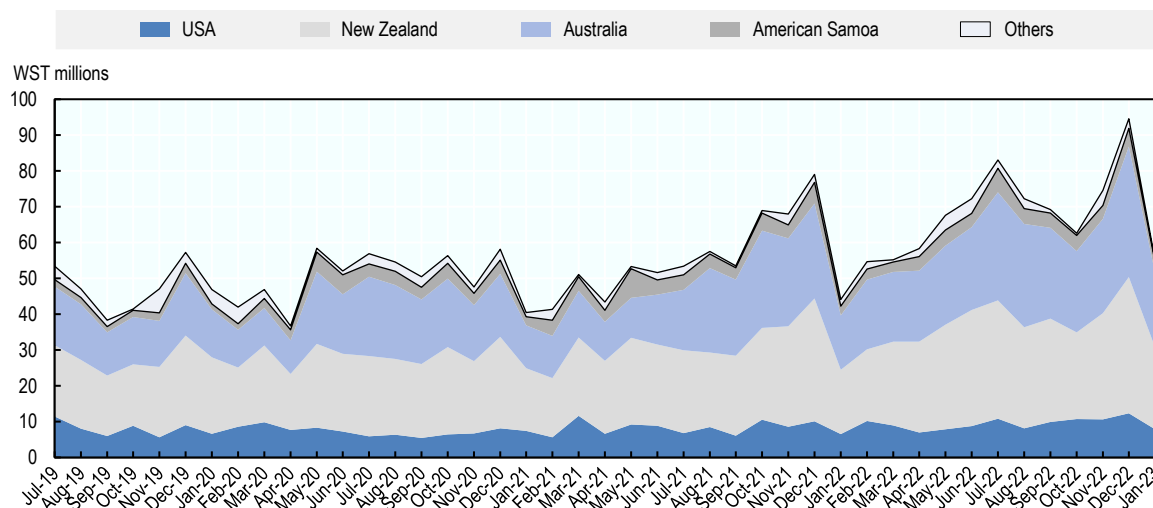
The government measures also specifically supported households and firms operating in the ocean economy. In 2021, tourism, one of the hardest-hit sectors, benefited from a government stimulus package of 5 million Samoan talas (WST), providing a much-needed capital injection to over 150 tourist operators (Samoa Global News, 2021^[77]). Laid-off workers in the hospitality sector were offered short-term paid trainings, which helped enhance skills and mitigated labour market frictions during the crisis exit and recovery phase (UNESCAP, 2020^[74]). Seafood exporters were offered partial insurance compensation (UNESCAP, 2020^[74]).

Subsistence farming, and to a lesser degree fishing, provided an important safety net. Faced with job losses, many workers returned to their villages and pursued farming to preserve livelihoods. This reflects the strong dependence of the Samoan economy on subsistence agriculture, with over 60% of agricultural production being of a non-monetary nature (Australian Centre for International Agricultural Research, n.d.^[78]). This safety net enabled households to meet immediate needs and alleviated food shortages and insecurity. Coastal fisheries were also an important source of livelihood during the pandemic, but played a lesser role, given the smaller number of Samoan households engaged in fishing rather than agriculture (Samoa Bureau of Statistics, 2021^[79]).


Remittances also helped prevent greater social damage. The steadiness of remittance inflows was a vital financial buffer for Samoans and helped moderate the impact of the crisis. Despite the global economic downturn, and contrary to initial expectations, remittances remained resilient (Kpodar et al., 2021^[80]). Between June 2020 and June 2022, monthly remittances grew by roughly 39% (see Figure 1.9). Much of this increase can be attributed to an uptick in remittances from Australia and New Zealand, reflecting the strong family ties between the two countries and Samoa (Le Dé and Jackson-Becerra, 2021^[81]).

Figure 1.9. Private remittances, largely from New Zealand and Australia, surged during the pandemic

Private remittance inflows to Samoa by sending countries



Source: Central Bank of Samoa (2023^[82]), Visitor Earnings and Remittances, <https://www.cbs.gov.ws/statistics/visitor-earnings-and-remittances/>.

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The pandemic exposed Samoa's socioeconomic susceptibility to environmental risks (see Section 1.3). The system-wide ramifications of the tourism shutdown revealed the pitfalls of reliance on the tourism sector, especially since climate change and natural disasters can heavily impede the sector's functioning. The role of maritime transport as an economic lifeline also became apparent, suggesting that future maritime transport service disruptions can have substantial socioeconomic repercussions. Dwindling tuna exports were a major contributor to the contraction of Samoa's fisheries sector during the pandemic. The risk and uncertainty of dependence on tuna fishing is especially germane to climate change, which is expected to adversely affect tuna biomass in the Pacific (Bell et al., 2021^[83]).

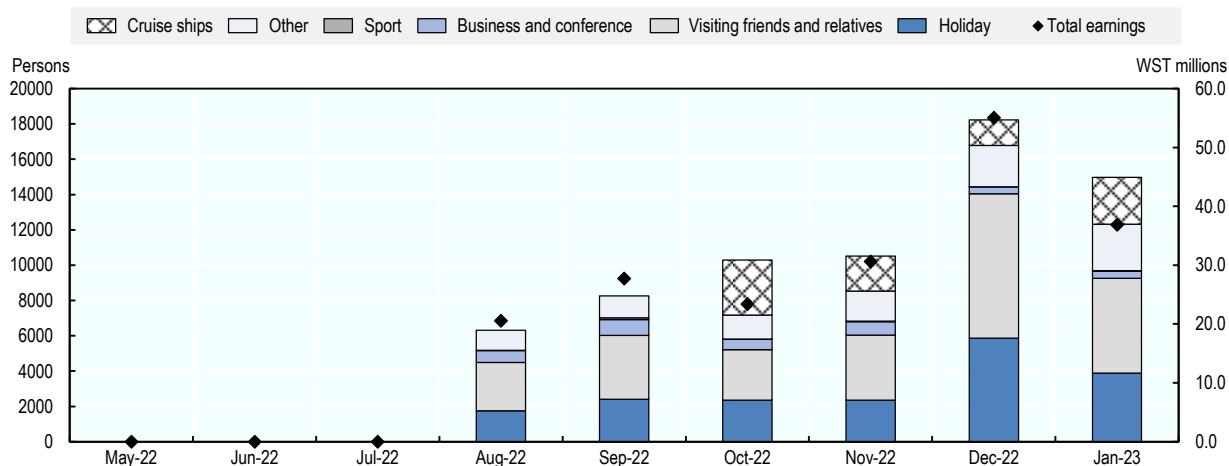
Despite the resumption of economic activity, Samoa's recovery has been stalled by recent crises.

Samoa is starting to recover from the COVID-19 pandemic. Samoa officially opened its borders in August 2022, a vital step in revitalising the tourism sector and its economy. With tourism leading the charge, signs of recovery are already emerging. As shown in Figure 1.6, Q3-2022 was only the second quarter of positive GDP growth since the measles outbreak in September 2019. Employment also exhibited a positive year-over-year change in Q4-2022 for the first time since Q3-2019.


Tourism activity in Samoa has resumed. Since the borders reopened, the number of visitors arriving in Samoa has steadily increased. As shown in Figure 1.10, in August 2022, Samoa had just over 6 000 visitors; by December 2022, this figure had surged up to nearly 17 000. Tourist earnings have consequently increased, rising to approximately WST 55 million by December 2022 (see Figure 1.10). The resurgence in tourism is driven by visiting friends and relatives, predominantly from Austria and New Zealand, followed by holiday-goers visiting Samoa. Both market segments present opportunities for rebuilding the tourism sector in the country.

Figure 1.10. The number of visitors and corresponding earnings have risen steadily since August 2022

International visitors by purpose of travel



Source: Central Bank of Samoa (2023^[82]), Visitor Earnings and Remittances, <https://www.cbs.gov.ws/statistics/visitor-earnings-and-remittances/>.

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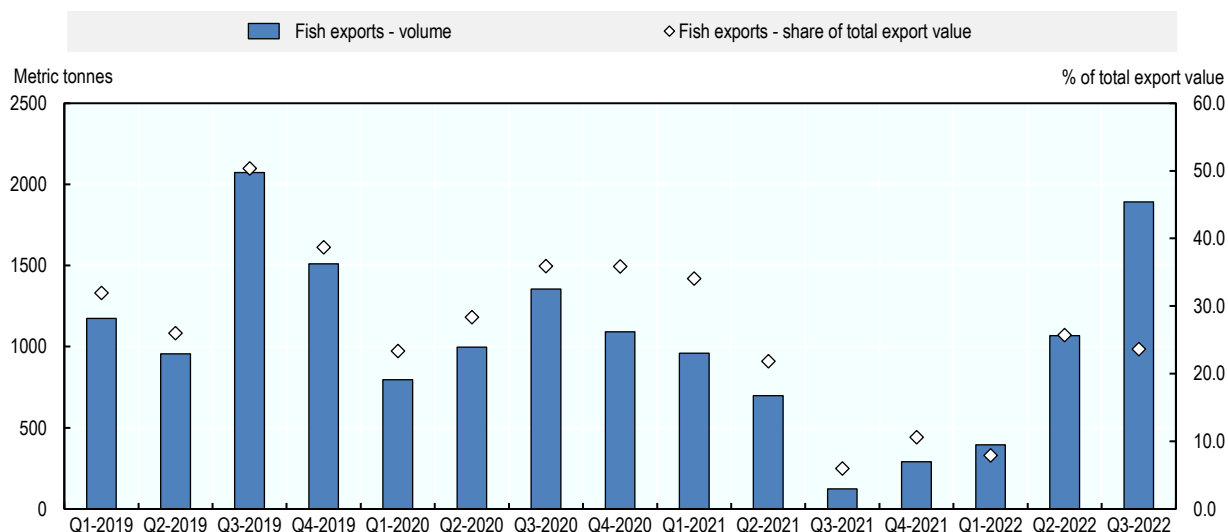
Nevertheless, roadblocks still exist for a full recovery of the tourism sector. Samoa opened its borders later than its peers in the Pacific (Fiji reopened to international travellers in December 2021), losing the first mover advantage, and was not able to benefit from the 2022 high season for tourism. As a result, recovery in the sector has been delayed and projections suggest a longer path to return to 2019 levels (IMF, 2022^[84]). Given the impact of COVID-19, firms operating in the sector are also likely to be hamstrung by cash shortages and unpaid debt, and kick-starting tourism will require support. Through the Development Bank of Samoa, for example, which is especially active in the tourism sector (UNESCAP, 2020^[74]), financial support can be channelled to tourism-related businesses to encourage their growth and eventually, their ability to resolve their debt obligations (UNESCAP, 2020^[85]). Meanwhile, the Samoa Business Hub is well-placed to provide business advisory services to tourism operators, helping them craft effective strategies for recovery and rebuilding (UNESCAP, 2020^[85]). The reopening of its borders, nevertheless, is an opportunity for Samoa to rebuild its tourism industry and contribute to a sustainable and resilient recovery. Key priorities include developing the sector's linkages to other ocean economy sectors, minimising tourism leakages, and factoring in environmental pressures (e.g. climate change, natural disasters and the adverse environmental impact of tourism).

Other ocean economy sectors, like fishing and maritime transport, are on the upswing, but pre-existing issues persist. The volume and value of fish exports have risen in recent quarters. After a significant drop beginning in the latter half of 2020, fish exports rebounded to 1 892 metric tonnes in Q3-2022, the highest since Q3-2019, compared to 123 metric tonnes in Q3-2021 (see Figure 1.11). As a consequence, the fish exports as a share of total export value, which had cratered during the pandemic, have inched closer to pre-pandemic levels. However, structural issues, such as the lack of post-harvest facilities and the concentration of export partners, limit the potential of the fisheries value chain. The upswing in the fisheries sector is matched by that in maritime transport. The reopening of borders has naturally been followed by an increase in cargo and passenger vehicle traffic. Nevertheless, the issues posed by Samoa's lack of maritime connectivity endure. The Liner Shipping Connectivity Index measures how well countries are connected to global shipping networks, using five variables: number of ships, their


container-carrying capacity, maximum vessel size, number of services and number of companies that deploy container ships in a country's ports (UNCTAD, 2022^[86]). The index shows that while Samoa's connectivity, in terms of ship size and schedule capacity, increased between Q2-2006 and Q2-2021, the number of direct calls and shipping lines declined over the same period (UNCTAD, 2022^[86]). Yet, as noted in Section 1.5, the pandemic highlighted an opportunity for Samoa to function as a shipping hub and benefit from economic gains from its maritime transport sector.

Figure 1.11. Fish exports are picking up

Volume of fish exports and the share of fish export value in total export value



Source: Central Bank of Samoa (2023^[87]), Foreign Trade Report, <https://www.cbs.gov.ws/statistics/foreign-trade-report/>.

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The factors that contributed to Samoa's resilience during the pandemic also represent challenges for the recovery and rebuilding of its ocean economy. For example, while private remittances helped Samoans absorb the economic fallout of COVID-19, they are indicative of the high rate of labour migration, in which seasonal work schemes are an important driver. In 2022, Samoa ranked top globally on a global index for human flight and brain drain that captures the economic impact of human displacement⁸ (The Fund for Peace, 2022^[88]). Labour shortages have hampered business and the provision of public services. The recovery of tourism has been bogged down partly by staff shortages. Likewise, while agriculture was an important source of livelihood during the pandemic, its lesser importance relative to fishing is an indication of the more modest potential of Samoa's fisheries sector by comparison with its Pacific peers, due to its smaller EEZ.

Samoa has faced a complex set of crises during and since COVID-19, complicating its recovery. From the outset, Samoa's recovery was set back in December 2020, by significant flooding and landslides associated with Tropical Cyclone Zazu, which did not make landfall (Pacific Islands Forum Secretariat, 2021^[70]). This is estimated to have cost the economy at least 1.5% of GDP, undercutting the positive effect of the lifting of social restrictions in December 2020 (IMF, 2021^[75]).

The global economic downturn and inflation surge also dampened Samoa's economic prospects. In particular, the impact of the Russian invasion of Ukraine in 2022 on global food and energy markets amplified the upward pressure on food and energy prices (IMF, 2022^[84]). Given Samoa's reliance on imports, this translated into steady increases in 2021 and 2022 in the cost of imported food, construction

materials, household items and fuel in the country (Central Bank of Samoa, 2022^[89]). By the end of October 2022, headline inflation in Samoa had reached 11.3%, significantly higher than the medium-term target of 3% (Central Bank of Samoa, 2022^[89]). The effect of rising global commodity prices has been felt across the Pacific, although forecasts of annual inflation for 2022 suggest stronger price pressures in Samoa than in most other Pacific Island Countries (IMF, 2022^[84]). Rising inflation – and the resulting increase in production costs, erosion of real incomes, and negative terms-of-trade shock – has impaired Samoa's economic recovery. Compared to its forecasts in early 2022 (just over 0%), the IMF's estimate, in late 2022, of real GDP growth in Samoa was significantly lower (roughly -5%) (IMF, 2022^[84]). In fact, among Pacific Island countries, Samoa had the third-largest downward revision in economic projections to account for the war in Ukraine (IMF, 2022^[84]).

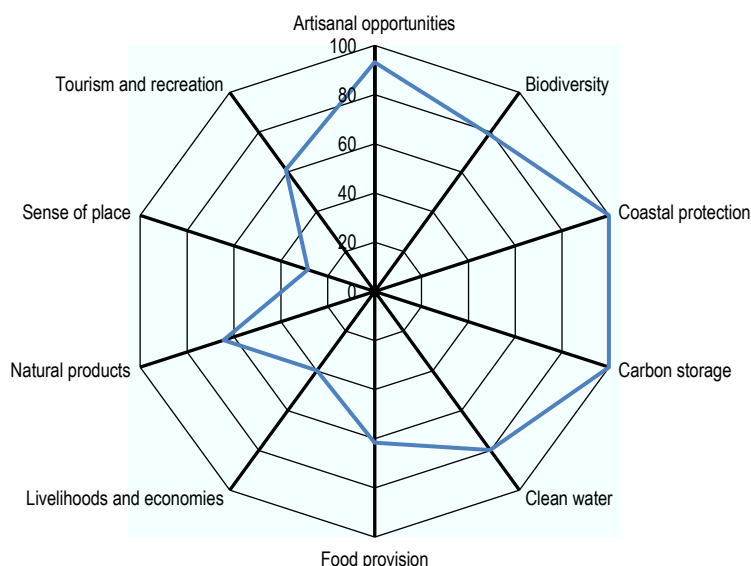
The most recent forecasts point to an economic recovery from 2022 onwards. Having reached its peak in late 2022, inflation in Samoa is showing signs of easing. Inflation decreased from 11.3% in November 2022 to 11% in December 2022. The Central Bank of Samoa expected that inflation would fall to 10% by June 2023, with additional, albeit gradual, reductions thereafter (Central Bank of Samoa, 2023^[90]). This easing of price pressures underpins expectations that Samoa's economy will recover in 2023 and 2024. While estimates vary, forecasts indicate real GDP growth in 2023 (4-5%) and 2024 (3.5%).⁹ Looking ahead, expectations are that GDP growth will be above trend in fiscal year 2025 (IMF, 2023^[91]).

1.5. Potential of Samoa's ocean economy to spearhead economic growth and sustainable development

A sustainable ocean economy in Samoa can drive improvements in environmental, economic, and social outcomes. The Ocean Health Index, a composite indicator of the extent to which the ocean delivers specific benefits without compromising its ability to do so in the future, gives Samoa an above-average score of 71 (global average 69) for 2021. Samoa performs very well on sub-indicators for coastal protection, carbon storage, clean water and biodiversity (Figure 1.12), illustrating its success in advancing marine environmental quality. It performs less well, however, on sub-indicators for livelihoods and economies, food provision, sense of place and tourism (Figure 1.12), suggesting that the socioeconomic potential of the ocean economy is not yet fully tapped. Going forward, maximising the social and economic benefits that its ocean resources can deliver for its people without jeopardising its environmental successes is a reasonable course of action.

Figure 1.12. Samoa is above average in sustainably generating economic, environmental and social value from the ocean

Samoa's performance on the different dimensions of the Ocean Health Index



Note: A higher score indicates better performance along the dimensions measured (100=highest, 0=lowest).

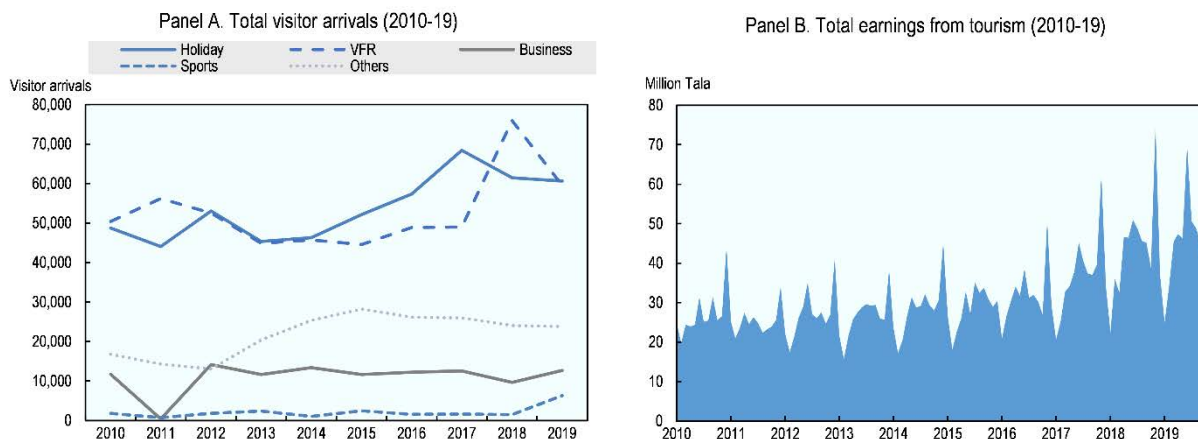
Source: Halpern et al. (2012^[92]), "An index to assess the health and benefits of the global ocean", <https://doi.org/10.1038/nature11397>.

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Several sectors of the ocean economy offer opportunities for Samoa's development. In its long-term development strategy, *Samoa 2040*, the government identified four priority areas with the potential to spearhead the country's economic development over the next two decades (Government of Samoa, 2021^[93]). They include tourism and fishing, two industries of the ocean economy considered to be operating below their economic potential, due to various constraints and barriers. The strategy also identified maritime shipping as one area where linkages to the fishing industry could be further tapped for economic growth.

The growth of the tourism industry in recent years speaks to its potential to contribute to future economic growth. Before the COVID-19 pandemic, Samoa's tourism industry was steadily growing. Tourist arrivals increased by 4% per year on average in the 20 years preceding the pandemic. The increase was driven by the rise in holiday visits and visits to friends and relatives, which peaked in 2017 and 2018 respectively (Figure 1.13). On the other hand, the number of visitor arrivals for business trips or other purposes remained relatively stable between 2015 and 2019.

Figure 1.13. Tourism grew steadily in the decade before COVID-19, driven by holiday visits and visits to friends and relatives



Note: In panel A., VFR=Visiting friends and relatives. Panel B presents earnings from tourism on a monthly basis.

Source: Samoa Tourism Authority (2023^[94]), Tourism Statistics, <https://www.samoatourism.org/section/19/statistics>.

StatLink  <https://stat.link/s3ega0>

Thanks to its linkages with other ocean economy sectors, tourism can expedite Samoa's recovery.

Tourism has important linkages to other economic sectors, and indirectly supports industries such as agriculture, transportation and retail (OECD, 2022^[33]). These interdependencies create economic flow-on effects that can generate additional jobs and income for Samoa's population, as well as increased tax revenue for the government. For instance, farmers supplying produce to hotels, resorts and restaurants are likely to benefit from increased demand after the reopening of borders and an increase in international visitors. Retail and transportation businesses, including maritime passenger services, could also generate additional revenue from the rising tourist demand, providing a welcome boost to a still-recovering economy.

The government views the tourism industry as a driver of long-term growth beyond the recovery stage.

The country's long-term development strategy, *Samoa 2040*, notes that, under an opportunity scenario, the implementation of targeted measures could help double visitor arrivals (from fewer than 200 000 before the pandemic to 400 000 in 2040) and increase total tourist spending (from around WST 500 million to WST 1.7 billion over the same period) (Figure 1.14). On the supply side, these measures include initiatives to develop the skills required by the tourism industry, the improvement of air services connecting Samoa to major tourist markets, and the use of public funding to unlock private investment. In the long term, the potential of tourism in Samoa will depend in large part on the evolution of the demand in key source markets, such as New Zealand, Australia and China, itself dependent on these countries' economic growth (Asian Development Bank, 2018^[95]). Cruise tourism is an area in which the government sees significant potential. Although Samoa is not as important a cruise destination as some of its neighbours, it could benefit from the growth of cruise tourism observed in the Pacific region in the decade before the COVID-19 pandemic. Between 2012 and 2017, for example, the number of New Zealanders taking international cruises grew by 65%. Vanuatu was able to take advantage of this growing market and saw the number of cruise passenger visitors increase by 69% and 28% between 2014-2015 and 2015-2016 respectively, attracting more than 250 000 cruise passenger visitors in 2016.

While the pre-COVID volume of tourism in Samoa was still sustainable in comparison to some of its neighbours, ensuring that growth is managed sustainably is crucial.

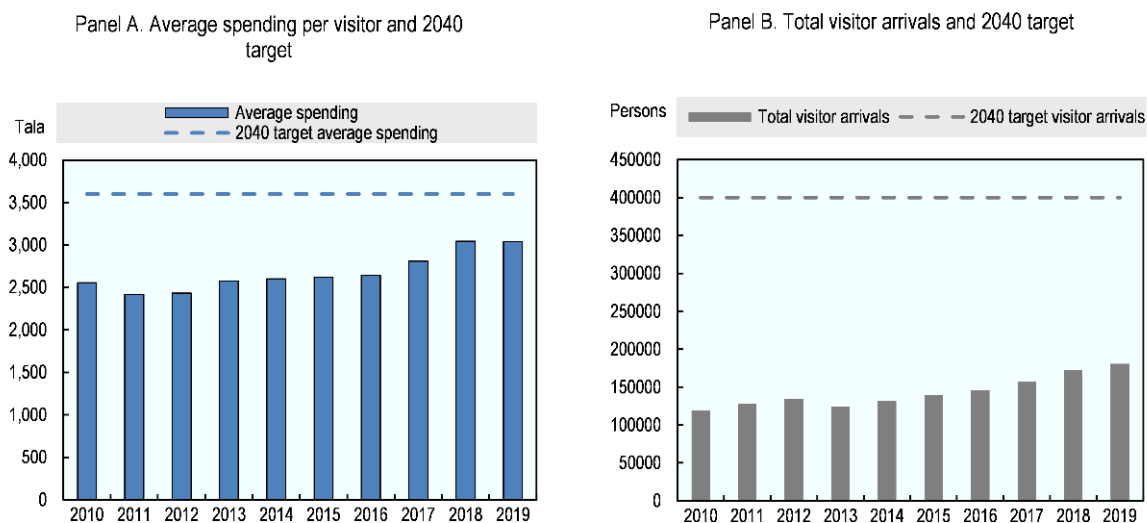
Among Pacific SIDS, Samoa occupies a mid-tier position in terms of the ratio of tourist arrivals to residents. With a population of less than 20 000, Palau has the highest ratio, with 5.24 international tourist arrivals per resident (World Bank, 2023^[19]). Samoa's ratio of 0.85 situates it in the middle of the pack, below Fiji (1.05) and Tonga (0.89), but

on par with Vanuatu, and above Tuvalu (0.32), Micronesia (0.16) and the Marshall Islands (0.14). Assuming a constant population, the Samoan government's strategic plans to double tourist arrivals by 2040 would raise this ratio to 1.89, meaning that annual international tourist arrivals could potentially exceed the number of residents by a factor of two.

It is important to ensure that tourism development aligns with Samoa's long-term economic, social and environmental objectives. A sustainable ocean economy approach requires considering the social and environmental costs associated with rapid growth in tourism arrivals. This is particularly relevant for cruise tourism, which is known to have a significant environmental impact on its destinations (Asian Development Bank, 2020^[96]). Pollution, overcrowding and strain on local resources can negatively impact residents' quality of life, the natural resources they rely on for subsistence and the long-term appeal of the destination for tourists. To mitigate these adverse effects, it is essential that Samoa adopt a sustainable tourism approach focused on attracting high-value tourism. By concentrating on value-added tourism offerings, in line with its sustainable ocean management approach, Samoa can better preserve its natural and cultural heritage and ensure that the benefits of tourism reach local communities. Developing eco-tourism, community-based tourism and cultural experiences can empower local communities, promote environmental conservation and create a distinctive brand identity for Samoa in the global tourism market. More broadly, as a sector with strong relationships with multiple value chains (e.g. food and beverages), tourism could help embed sustainability considerations across the economy (OECD, 2022^[33]).

In addition to increasing the number of visitors and their average spending, Samoa could aim to better link its tourism industry to the labour market. Before the COVID-19 pandemic, the tourism industry represented less than 15% of total employment in Samoa, as compared to more than 30% in countries where tourism receipts accounted for a similar or lower percentage of GDP, such as Fiji, Niue and Vanuatu (UNESCAP, 2020^[97]). This suggests that there may be room to improve the impact of the Samoan tourism industry on local employment, which would also help maximise its contribution to socio-economic development and poverty reduction. The *Samoa 2040* strategy mentions that under the opportunity scenario, the tourism industry would provide the majority of the additional jobs created in the economy (Government of Samoa, 2021^[93]).

Figure 1.14. The economic contribution of Samoa's tourism industry could be increased.



Note: The 2040 target reflects the opportunity scenario from the *Samoa 2040* strategy.

Source: Samoa Bureau of Statistics; Government of Samoa (2021^[93]), *Samoa 2040*, <https://www.mof.gov.ws/wp-content/uploads/2021/03/Samoa-2040-Final.pdf>.

StatLink  <https://stat.link/lh1ef0>

Despite the socioeconomic importance of Samoa's fishing industry, its potential is limited by structural factors. Fisheries represent an important economic activity and a valuable source of income for the populations and governments of Pacific SIDS. Their EEZs provide more than 30% of the world's tuna catch (Conservation International, n.d.^[98]), and license fees for foreign distant-water fishing vessels generate substantial economic gains in the region. Although Samoa's own licence and access fee revenue from tuna fisheries doubled between 2010 and 2017, reaching USD 1.4 million (before plateauing a little above the USD 1 million mark between 2017 and 2020), it remains small compared to other Pacific SIDS with larger EEZs, such as Micronesia (USD 73 million), Kiribati (USD 131 million) or Tuvalu (USD 30 million) (FFA, Pacific Community, 2021^[99]). The expansion of Samoa's fishing industry is also reliant on the availability and sustainable management of the fish stock in the Pacific region, which could be impacted by climate change and the migratory patterns of pelagic species (World Bank, 2021^[100]).

Pivoting the fisheries sector to value-adding activities and import substitution could increase its contribution to the economy. Due to a combination of high trade costs, lack of adequate financing, and infrastructure and skills, the country currently lacks the capacity and facilities to process most of its fish catch and ensure that it meets the quality standards for export to key markets. As a result, most of the tuna caught in Samoa's national waters is processed in countries with processing and packing facilities that are accredited to export to key markets (e.g. in the nearby United States territory of American Samoa), depriving the country of significant economic benefits. As part of its long-term development strategy, the Samoan government sees opportunities to increase the value of fish exports by introducing measures to increase the sector's access to finance and infrastructure (e.g. cold storage, processing and packing facilities, fish markets, etc.) (Government of Samoa, 2021^[93]). Import substitution offers another opportunity to expand the contribution of the fisheries sector, especially to substitute imports of large quantities of canned tuna from neighbouring American Samoa.

Samoa's shipping industry could better capitalise on the country's central position in the Pacific. Although its lack of maritime connectivity (described in Section 1.3) has persisted in recent years, Samoa's central location in the Pacific could make it a natural hub for shipping and transport. The country has scope to expand its shipping services, including by leveraging the recent growth of the transshipment and cargo activity in Apia's international port. In the longer term, this also opens opportunities to expand onshore activities related to the tourism, fishing and transshipment industries (including restocking fuel and food supplies, or accommodation for crews for cruise ships and fishing vessels). Two recent examples illustrate Samoa's potential to take advantage of its unique geographic location at the heart of the Pacific to become a shipping hub. First, during the COVID-19 pandemic, the Fiji Water company started using Samoa (rather than Auckland, in New Zealand) as its transshipment base to export to the United States market. Around the same time, Alcatel Submarine Networks, one of the world's leading submarine cable companies, decided to use Apia's international port as its regional hub to store its submarine cable supply for its operations in the Pacific. Despite these positive developments, the shipping industry in Samoa faces several constraints, including limited infrastructure, high operating costs and competition from other Pacific SIDS.

In coming years, several emerging sectors could open new economic opportunities. Among them, renewable energy, marine biotechnology and aquaculture stand out as promising avenues for Pacific SIDS, although they are still in their infancy in Samoa and making them attractive to investment would require addressing existing constraints. As outlined in Section 1.3, renewable energy offers prospects for reducing Samoa's reliance on imported fossil fuels and promoting energy independence. Similarly, aquaculture has potential for both domestic consumption and export, although several key factors such as transportation costs, cold chain logistics and availability of a skilled workforce would have to be considered to determine the cost-competitiveness of this activity. Lastly, marine biotechnology also holds promise for the development of innovative products, such as pharmaceuticals and cosmetics derived from marine organisms. The Scientific Research Organization of Samoa, a state-owned scientific research entity, is

currently creating a marine research division which will, among other things, conduct research on marine organisms in collaboration with the Ministry of Agriculture and Fisheries.

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Notes

¹ Compared to a no-disaster counterfactual, IMF modelling suggests that natural disasters and climate change would, in the long run, reduce GDP growth by 1.3 percentage points and enlarge fiscal and current account deficits by 3.5 percentage points of GDP on average each year (IMF, 2021^[75]). IMF simulations also suggest that a representative natural disaster in Samoa in FY2022 (with median-level impacts) would augment debt-to-GDP ratio by 21%, assuming new debt is used to finance reconstruction (IMF, 2021^[75]).

² See Mitterpergher, Raes and Jain (2022^[103]) for estimates of the economic cost in the case of Antigua and Barbuda.

³ For reference, Switzerland, considered the least vulnerable (rank 1), has a vulnerability score of 0.255. Meanwhile, Singapore, considered the readiest (rank 1), has a readiness score of 0.804.

⁴ The simulations are based on the IMF's Debt-Investment-Growth and Natural Disasters model. Model specifications and calibrated parameters are elaborated in Kinoshita et al. (2022^[25]).

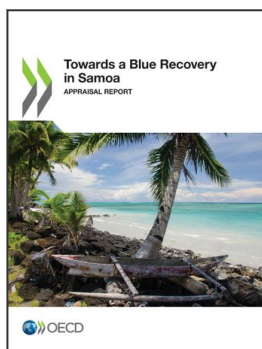
⁵ Globally, much of the "greening" in the maritime transport sector, in the short run, is expected to be driven by energy efficiency gains while in the medium to long-run, renewable fuels (notably advanced biofuels and e-fuels, are expected to drive decarbonisation (IRENA, 2021^[102]).

⁶ Peer countries include Nauru, Kiribati, Tuvalu, Vanuatu, Papua New Guinea, Solomon Islands, Federated States of Micronesia, Tonga, Marshall Islands, Fiji, Palau, Niue.

⁷ OECD analysis shows that globally, while demand for high-value species (e.g. bluefin tuna) faltered during the pandemic, demand for canned products increased (OECD, 2020^[104]).

⁸ This index covers displacement for both economic and political reasons (voluntary or involuntary).

⁹ The World Bank projects real GDP growth of 4% and 3.5% in 2023 and 2024 respectively (World Bank, 2023^[101]). Meanwhile, the IMF expects an uptick of 5% in GDP in fiscal year 2023 (IMF, 2023^[91]).



From:
Towards a Blue Recovery in Samoa
Appraisal Report

Access the complete publication at:
<https://doi.org/10.1787/bd8d4112-en>

Please cite this chapter as:

OECD (2023), "The ocean economy of Samoa: Economic trends, the impact of recent crises and sustainability stressors", in *Towards a Blue Recovery in Samoa: Appraisal Report*, OECD Publishing, Paris.

DOI: <https://doi.org/10.1787/7e894d3f-en>

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