



Technical and statistical report

# Digital Economy Report Pacific Edition 2024

Promoting Digital Entrepreneurship  
and Trade



United  
Nations





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and Trade



**United  
Nations**

Geneva, 2025

**Digital Economy Report**  
Pacific Edition 2024

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# Preface

In recent years, political momentum has grown across the Pacific, with leaders increasingly recognizing digital transformation as an important driver of economic resilience and global integration. Progress in developing national and regional digital and e-commerce strategies reflects alignment with the regional agenda and the establishment of a foundation for cohesive digital development across Pacific SIDS. As digital development advances, the region is transitioning from assessment to policy implementation. With early groundwork evolving into concrete action, coordinated efforts and targeted policies can help advance a more inclusive and sustainable digital future.

Building on the 2022 *Pacific Digital Economy Report*, this 2024 edition examines recent progress, challenges and opportunities in digital connectivity/infrastructure, entrepreneurship and trade. By addressing these interconnected areas, the report highlights their collective importance in fostering a resilient and inclusive digital economy. Together, these areas provide a pathway for Pacific SIDS to leverage technology, bridge divides, strengthen economies and achieve integration into the global digital landscape.

As elsewhere, connectivity remains a cornerstone of the Pacific's digital economy. Expanded submarine cables and mobile infrastructure have improved access, yet high costs continue to limit inclusive adoption. The development of low Earth orbit (LEO) satellite services offers potential for underserved regions, though regulatory and cost challenges persist. Addressing these issues will require public-private collaboration and policies that emphasize affordable, resilient connectivity for all communities.

Entrepreneurship is central to inclusive economic growth. Digital platforms allow Pacific entrepreneurs to expand beyond local markets. However, gaps in digital skills, financing and literacy limit the potential of digital entrepreneurship. Women entrepreneurs face additional challenges, including limited access to tailored financing and digital tools. The report highlights the importance of targeted support for skills development, inclusive financing and mentorship to empower all entrepreneurs, particularly women and underserved groups.

Digital trade offers opportunities to overcome geographic constraints and access global markets. Cross-border e-commerce and digitally deliverable services provide potential avenues for economic diversification and participation in global value chains. However, logistical challenges, limited digital payment systems and regulatory inconsistencies hinder seamless digital trade. The report calls for cohesive policies, investment in logistics and payment infrastructure, and a digital ecosystem that can adapt to the global market.

This 2024 edition emphasizes that digital transformation extends beyond connectivity and access. It seeks to create a digital environment where all individuals and businesses can fully participate in the digital economy. By addressing these challenges collaboratively, Pacific SIDS can foster a digital economy that supports sustainable development and resilience across the region. This report is intended to inform policymakers, stakeholders and development partners committed to advancing digital transformation across Pacific communities.

**Torbjörn Fredriksson**

Head, E-commerce and Digital Economy Branch  
Division on Technology and Logistics, UNCTAD



# Acronyms and abbreviations

<b>ADB</b>	Asian Development Bank
<b>AI</b>	artificial intelligence
<b>ASEAN</b>	Association of Southeast Asian Nations
<b>ASYCUDA</b>	Automated System for Customs Data
<b>B2B</b>	business-to-business
<b>B2C</b>	business-to-consumer
<b>BPO</b>	business process outsourcing
<b>CEO</b>	Chief Executive Officer
<b>COVID-19</b>	coronavirus disease
<b>DDS</b>	digitally deliverable services
<b>ESO</b>	entrepreneurial support organization
<b>GDP</b>	gross domestic product
<b>GNI</b>	gross national income
<b>GSMA</b>	Global System for Mobile Communications Association
<b>ICT</b>	information and communication technology
<b>ILO</b>	International Labour Organization
<b>IMF</b>	International Monetary Fund
<b>ITU</b>	International Telecommunication Union
<b>IXP</b>	Internet exchange point
<b>LDC</b>	least developed country
<b>LEO</b>	low Earth orbit
<b>MSME</b>	micro, small and medium-sized enterprise
<b>OECD</b>	Organisation for Economic Co-operation and Development
<b>PIFS</b>	Pacific Islands Forum Secretariat
<b>PPP</b>	public-private partnership
<b>PRESR</b>	Pacific Regional E-commerce Strategy and Roadmap
<b>PSDI</b>	Pacific Private Sector Development Initiative
<b>SDG</b>	Sustainable Development Goal
<b>SIDS</b>	small island developing states
<b>SME</b>	small and medium-sized enterprise
<b>TBD</b>	to be determined
<b>TWICT</b>	Tonga Women in ICT
<b>UNCDF</b>	United Nations Capital Development Fund
<b>UNCTAD</b>	United Nations Conference on Trade and Development
<b>UNDP</b>	United Nations Development Programme
<b>UNESCAP</b>	United Nations Economic and Social Commission for Asia and the Pacific
<b>UNESCO</b>	United Nations Educational, Scientific and Cultural Organization
<b>USAID</b>	United States Agency for International Development
<b>WTO</b>	World Trade Organization



## Note

Within the United Nations Conference on Trade and Development (UNCTAD) Division on Technology and Logistics, the E-commerce and Digital Economy Branch carries out policy-oriented analytical work on the development implications of information and communications technologies (ICTs) and e-commerce. It is responsible for the preparation of the Digital Economy Report as well as thematic studies on ICT for development.

The Branch promotes international dialogue on issues related to ICTs for development and contributes to building developing countries' capacities to measure the information economy and to design and implement relevant policies and legal frameworks. It also monitors the global status of e-commerce legislation (UNCTAD Cyberlaw Tracker). Since 2016, the Branch has coordinated a multi-stakeholder initiative entitled eTrade for all ([etradeforall.org](http://etradeforall.org)), which aims to improve the ability of developing countries, particularly least developed countries (LDCs), to use and benefit from e-commerce. The initiative is also behind the UNCTAD eTrade Readiness Assessment and eTrade for Women programmes, launched respectively in 2017 and in 2019.

This report is published under the Pacific Digital Economy Programme, a joint initiative implemented by the United Nations Capital Development Fund (UNCDF), the United Nations Development Programme (UNDP) and UNCTAD, in support of the development of inclusive digital economies in the Pacific. The Pacific Digital Economy Programme is supported by Australia, the European Union and New Zealand. The views expressed in this publication do not necessarily represent those of UNCDF, UNDP, Australia, the European Union or New Zealand.

In this report, the terms country/economy refer, as appropriate, to territories or areas. The designations of country groups are intended solely for statistical or analytical convenience, and do not necessarily express a judgement about the stage of development reached by a particular country or area in the development process. Unless otherwise indicated, the major country groupings used in this report follow the classification of the United Nations Statistics Division.

These are:

Developed economies: member countries of the Organisation for Economic Co-operation and Development (OECD) (excluding Chile, Colombia, Costa Rica, Mexico and Türkiye), European Union member countries that are not OECD members (Bulgaria, Croatia, Cyprus, Lithuania, Malta and Romania), plus Albania, Andorra, Belarus, Bermuda, Bosnia and Herzegovina, Liechtenstein, Monaco, Montenegro, North Macedonia, the Republic of Moldova, the Russian Federation, San Marino, Serbia and Ukraine, plus the territories of Faroe Islands, Gibraltar, Greenland, Guernsey and Jersey.

Developing economies are all countries not specified above.

A file with the main country groupings used can be downloaded from UNCTADstat at <http://unctadstat.unctad.org/EN/Classifications.html>.

References to China do not include data for Hong Kong (China), Macao (China) or Taiwan Province of China.

References to Latin America include the Caribbean countries, unless otherwise indicated.

References to sub-Saharan Africa include South Africa, unless otherwise indicated.

Reference to Pacific small island developing states (SIDS) include the following United Nations Member States: Fiji; Kiribati; Marshall Islands; Federated States of Micronesia; Nauru; Palau;



Papua New Guinea; Samoa; Solomon Islands; Tonga; Tuvalu; Vanuatu; and for the purpose of this report, Timor-Leste; as well as non-United Nations Members: American Samoa; Cook Islands; French Polynesia; Guam; New Caledonia; Northern Mariana Islands and Niue.

The term 'dollars' (\$) refers to United States dollars, unless otherwise indicated.

The term 'billion' signifies 1,000 million.

The following symbols may have been used in tables:

Two dots (..) indicate that data are not available or are not separately reported.

Rows in tables have been omitted in those cases where no data are available for any of the elements in the row.

A dash (–) indicates that the item is equal to zero or its value is negligible.

A blank in a table indicates that the item is not applicable, unless otherwise indicated.

A slash (/) between dates representing years, e.g. 2021/22, indicates a financial year.

Use of an en dash (–) between dates representing years, e.g. 2021–2022, signifies the full period involved, including the beginning and end years.

Annual rates of growth or change, unless otherwise stated, refer to annual compound rates.

Details and percentages in tables do not necessarily add up to the totals because of rounding.





# Executive summary

The digital economy presents both transformative opportunities and complex challenges for Pacific SIDS. As these countries strive to integrate digital technologies across their economies, they face different hurdles, including both traditional ones—such as those stemming from geographic isolation and small market sizes—and new barriers; for instance, those related to digital infrastructure and digital literacy. Despite these challenges, digital transformation promises new avenues for economic resilience, growth and inclusion. This report builds on previous assessments, specifically the 2022 *Digital Economy Report: Pacific Edition*, which highlighted the early-stage nature of digital development in the region. It assesses how countries in the Pacific can harness digital technologies to support sustainable development, bridge divides and improve integration into the global economy.

The 2024 edition of the Pacific Digital Economy Report seeks to connect the dots between foundational digital infrastructure, challenges faced by digital entrepreneurs, and specific barriers to digital trade. While the need for affordable, resilient connectivity remains a core concern, the report emphasizes that supporting entrepreneurship and addressing trade-specific obstacles are equally critical. Only by tackling these areas together can Pacific SIDS prepare for meaningful and inclusive integration into the global digital economy.

## Building affordable, resilient connectivity for Pacific entrepreneurs

Achieving meaningful digital connectivity remains a critical challenge in the Pacific, where geographic dispersion and limited infrastructure restrict access to essential digital services. While recent infrastructure projects—particularly expanded submarine cable and mobile networks—have improved connectivity, substantial barriers remain, especially in remote and rural areas. Mobile network coverage of populations varies widely, with nearly universal 4G in Samoa and over 90 per cent in Fiji, Tonga and French Polynesia, but less than a third in the Federated States of Micronesia and Solomon Islands. While 5G infrastructure is expected to expand, it is limited to urban centres, with only a few countries preparing for initial roll-outs. LEO satellite services—which are currently accessible in eight Pacific countries—offer promising solutions for extending broadband to remote locations. However, high set-up costs and varying regulatory approaches across Pacific countries continue to hinder their widespread adoption.

Despite recent progress, Internet affordability and access to essential devices still needs to improve. High Internet costs limit digital engagement, especially among low-income users, creating a digital divide that restricts opportunities for aspiring entrepreneurs. Since the last edition of this report, prices as a share of gross national income (GNI) per capita have been relatively stable in the region, with only three countries reaching the Broadband Commission's Advocacy Target of 2 per cent of GNI per capita.

While smartphones offer a basic entry point, advanced digital activities—such as setting up web shops or participating in e-commerce—often require the use of more powerful devices or operating systems, which remain unaffordable for many. Recognizing this challenge, some countries are considering policies such as tax incentives or device donation programmes to improve affordability and accessibility.

Looking forward, public-private partnerships (PPPs) and international cooperation will remain important for strengthening digital infrastructure and ensuring end-to-end Internet services across the Pacific. At the national level, adopting balanced approaches to LEO satellite services is becoming increasingly significant in this context. Policy initiatives aimed at expanding access to affordable Internet and devices are critical.



## Empowering Pacific entrepreneurs for inclusive economic growth

Digital entrepreneurship has the potential to support economic resilience, growth and inclusivity, helping businesses overcome geographic isolation and access wider markets. However, digital entrepreneurs in Pacific SIDS face many challenges, including limited access to financing, skills and tailored support structures. Digital tools allow micro, small and medium-sized enterprises (MSMEs) in the Pacific to expand their productivity and reach beyond local markets, as digitalization enables informal businesses to enter the formal economy, accessing training and support networks that drive innovation and job creation across the region.

Basic and advanced digital skills are crucial for entrepreneurs to fully utilize digital tools but many individuals across the Pacific lack the necessary training. For instance, in Fiji, a recent study suggests that only 32 per cent of individuals were found to have basic ICT skills. This gap is particularly evident in rural areas and among specific demographic groups, including women. Investments in skill development and digital literacy programmes are thus essential.

Access to finance is another challenge, with traditional lending institutions often unable to meet the unique needs of digital ventures. Many digital entrepreneurs lack the collateral required by banks, and financial institutions in the Pacific are generally risk-averse when it comes to lending to early-stage digital businesses. For instance, in Kiribati, Solomon Islands and Vanuatu, starting a business can cost as much as one-third to half of what an average person earns in a year. As a result, many entrepreneurs rely on personal savings or informal financing. Better access to capital, especially through non-traditional financing mechanisms, could significantly support digital business growth.

The entrepreneurship ecosystem in the Pacific also needs strengthening to support digital ventures, as demonstrated by initiatives like V-Lab in Vanuatu and the University of the South Pacific's Innovation Hub. While informal networks and social media provide a degree of support, there is a lack of structured incubators, accelerators and mentorship programmes tailored to the needs of digital entrepreneurs. Developing formal support systems, such as business hubs and PPPs, would provide crucial guidance, resources and networking opportunities, supporting them from ideation to scale-up stages.

For women in the Pacific, digital entrepreneurship should offer a valuable pathway for economic participation and empowerment. Increasing women's participation in the labour force could boost gross domestic product (GDP) per capita by an average of 22 per cent. However, sociocultural norms, limited access to finance and weak digital literacy disproportionately hamper women entrepreneurs. Targeted support, including access to female mentors and role models, is therefore often needed to address these divides.

## Overcoming barriers to digital trade

Through digital platforms, e-commerce and digitally deliverable services (DDS), Pacific businesses can reach international consumers and give economies a chance to diversify. However, digital trade remains in its infancy, facing both traditional and digital-specific challenges.

E-commerce offers MSMEs in the Pacific an opportunity to connect with global customers, selling niche exports like artisan and organic products. Yet high shipping costs, complex Customs procedures and limited logistics infrastructure remain major hurdles. Additionally, the lack of integrated digital payment systems and secure cross-border transactions limits seamless participation in international e-commerce.

Many Pacific businesses currently rely on informal platforms like social media for e-commerce. While these offer a low-cost entry point, informality restricts cross-border trade. To support



sustainable growth, there is a pressing need for e-commerce platforms that align with the logistical and financial realities of Pacific businesses, enabling secure and consistent export capacity.

In particular, DDS could provide a path to overcoming geographical barriers, for instance in areas like software, e-learning and business process outsourcing (BPO) services. The Fiji BPO sector illustrates particular growth opportunities. However, the region's DDS potential remains underdeveloped, and Pacific SIDS remain heavily dependent on imported digital services. Policies to build digital skills, support local digital businesses and attract investment are needed to unlock the sector's potential as a revenue source.

The legal and regulatory framework for digital trade in the Pacific is also at an early stage. Data protection, cybersecurity and consumer protection laws are essential for building trust and supporting cross-border trade. While some countries have made progress, outdated frameworks limit a cohesive, secure environment for digital trade. Harmonizing regulations across the region would boost the scope for digital trade by providing consistent standards for electronic transactions and data privacy.

Digital trade holds transformative potential for Pacific SIDS, yet the path forward requires not only investments in infrastructure but also tailored platforms, digital skill development and regulatory support. Addressing these foundational and digital-specific barriers will build a resilient digital economy.

### **A coordinated path forward for the Pacific digital economy**

Looking ahead, this report calls for strengthened regional cooperation to address shared challenges and build a cohesive digital economy across the Pacific. While the Pacific region has produced new national e-commerce strategies, their implementation needs to be ensured. Challenges such as inadequate digital infrastructure, regulatory gaps and financial constraints are compounded by governance issues, including a lack of sustained political commitment, operational frameworks and dedicated implementation units with adequate resources. Breaking institutional silos and fostering collaboration among public and private stakeholders are crucial to ensuring cohesive reforms. Tools like the UNCTAD e-trade reform tracker can enhance monitoring, accountability and resource mobilization to support these efforts. The *Pacific Regional E-commerce Strategy and Roadmap* (PRESR) offers a framework to align national efforts, promoting harmonized standards and joint infrastructure projects that reduce costs and enhance accessibility.

Sustained international support and strategic PPPs will be essential to achieving these goals. Organizations like PIFS play a key role in advancing regional collaboration through initiatives like the Pacific E-commerce Alliance, which was launched in 2023 to strengthen e-commerce in the Pacific. Mobilizing resources, fostering regional integration and reinforcing governance frameworks will help countries respond to emerging challenges and seize new opportunities. A planned review of the PRESR in 2026–2027 presents a timely opportunity to assess progress and adapt strategies.

In conclusion, advancing the Pacific's digital economy requires a coordinated, multifaceted approach that addresses infrastructure, entrepreneurship and trade challenges. Through partnerships, capacity-building and evidence-based policies, Pacific SIDS can foster sustainable growth, enhance resilience and integrate more fully into the global digital economy, ensuring that digital transformation benefits all Pacific Islanders.







Chapter I

# Building the foundation for digital trade





**The digital economy holds significant potential for the Pacific region. However, progress remains at an early stage, with many countries facing challenges across several policy dimensions. Although national and regional strategies are being developed and regulatory reforms are under way, further efforts are needed to address these challenges.**

## A. Takeaways from the 2022 report

The *Digital Economy Report: Pacific Edition 2022* marked the first comprehensive assessment of the state of the digital economy in the Pacific. It focused on key areas such as ICT infrastructure and use, highlighting the role of digital platforms and the associated challenges and opportunities in value creation and capture. The report also examined emerging national and regional policy initiatives that were beginning to shape the digital economy and e-commerce agenda in the region. These initiatives reflected a growing recognition of the importance of digital transformation as a tool for enhancing economic participation and connectivity.

While the report noted progress in expanding connectivity—such as the increased deployment of submarine cables and mobile networks—it also highlighted significant gaps. Network coverage varied widely across the region: some Pacific Islands had achieved relatively strong penetration rates, whereas others continued to face challenges related to resilience, speed and affordability. Limited international bandwidth and reliance on a single cable in many areas left some nations vulnerable to disruptions. High costs of broadband services and mobile data also continued to be prohibitive for much of the population, particularly in rural and remote areas. These infrastructure challenges underscored the need for continued investment to enhance both coverage and affordability across the Pacific.

In addition to infrastructure challenges, the 2022 report emphasized the issue of

device adoption, which remains primarily mobile-driven across the Pacific. Mobile phones are the dominant mode of access to the Internet, reflecting both the lack of fixed-broadband infrastructure and the widespread use of mobile networks for connectivity. However, affordability of smartphones and other Internet-enabled devices continues to be a major barrier to broader adoption, especially for low-income households. These challenges contribute to significant mobile usage gaps, leaving many individuals, particularly in rural and remote areas, unable to participate fully in the digital economy. As mobile technology continues to evolve, addressing the cost barriers to device adoption will be crucial to ensuring equitable access across the Pacific region.

Beyond issues of connectivity, the 2022 report also examined the role of digital platforms in the Pacific's emerging digital economy, highlighting that progress remains at an early stage. While digital platforms were beginning to offer new opportunities for economic participation, especially through informal marketplaces and social selling, challenges around value creation and capture persisted. Many Pacific businesses, particularly MSMEs, struggled to fully leverage these platforms due to limited digital skills and the dominance of global platforms. This risked leading to local businesses capturing only a small portion of the value generated. The report stressed the need for policies that enable local businesses to not only participate in but also benefit more substantially from the digital economy,



by strengthening their digital capabilities and fostering homegrown digital platforms tailored to the region's specific needs.

In addition to infrastructure and platform challenges, the 2022 report highlighted the importance of creating a supportive policy and regulatory environment to foster the growth of the Pacific's digital economy. Several Pacific countries had begun developing e-commerce strategies and conducting readiness assessments, laying the groundwork for digital trade and entrepreneurship. The report emphasized the need for coherent and harmonized policies at both national and regional levels to address these gaps and promote digital innovation. Regional cooperation, including initiatives like the Pacific E-commerce Initiative, was identified as a key driver to advance these efforts.

The 2022 report concluded by emphasizing that while infrastructure is a critical component of digital transformation, a broad policy approach is needed to unlock the full potential of the digital economy in Pacific SIDS, covering all relevant gaps in the digital ecosystem. This requires coordinated efforts across ministries to ensure that the Pacific's digital economy is inclusive and capable of driving sustainable growth.

Since its endorsement in 2021, the PRESR (PIFS, 2021) has been central to the region's efforts to promote the digital economy and e-commerce. It sets out a comprehensive framework to enhance e-commerce readiness across Pacific SIDS, with key

areas of focus including ICT infrastructure, legal and regulatory frameworks, and trade facilitation. Implementation of the Strategy is guided by seven key policy areas, ranging from e-commerce skill development to access to finance. According to the second monitoring and evaluation report (PIFS, 2024a), significant progress has been made, with donor support mobilized for 43 programmes involving 96 projects. While challenges remain, particularly in last-mile connectivity and underreporting by implementing agencies, the Strategy has laid the groundwork for more coordinated and impactful digital development across the region. As it moves forward, attention will focus on addressing gaps in infrastructure and ensuring that policies are in place to support the growth of e-commerce at both the national and regional levels.

At the national level, several governments have taken steps to adopt national e-commerce strategies, building on the insights gained from comprehensive e-commerce assessments. Eight of the 20 Pacific SIDS, along with Timor-Leste, have concluded or are due to conclude strategies that reflect their individual development priorities while aligning with the regional push for digital transformation. These strategies are designed to strengthen the foundations of the digital economy by addressing all critical policy areas. Building on the initial assessments, they aim to foster a more dynamic and inclusive e-commerce ecosystem.

## **B. Connecting the dots: Digital infrastructure, entrepreneurship and trade**

The 2024 edition of the Pacific Digital Economy Report has three main objectives. First, it provides an update on the state of ICT infrastructure in the Pacific. Significant gaps in terms of connectivity, coverage

and resilience continue to pose challenges for the region's digital economy, affecting access to online services and limiting opportunities for economic participation. Second, the report explores the role of digital





entrepreneurship as a foundation for building a Pacific-native digital economy, emphasizing the importance of fostering innovation and supporting business growth. Third, it examines digital trade as a means for Pacific SIDS to overcome geographic isolation, access overseas markets and integrate more effectively into the global economy. The report emphasizes the need to remove barriers to the uptake of digital technologies, particularly among entrepreneurs, and how this adoption can unlock opportunities for cross-border e-commerce.

Together, these three areas are critical to drive inclusive and sustainable growth in the region's evolving digital landscape. By highlighting both progress and remaining challenges, the report is intended to guide policymakers, businesses and development partners in fostering a more resilient and equitable digital economy across the Pacific.

A key challenge in understanding the digital economy in the Pacific is the lack of comprehensive data and in-depth studies, an issue highlighted in the 2022 report as well. Given these limitations, this report relies heavily on qualitative insights obtained through interviews with businesses, policymakers and other key stakeholders across Pacific SIDS. These interviews provide valuable, context-specific perspectives on the opportunities and challenges faced by the region's digital economy, and help bridge the data gaps and ensure that the report reflects on-the-ground realities.

The report is structured around three themes that are key for understanding the state of the Pacific's digital economy: ICT infrastructure, digital entrepreneurship and digital trade. Chapter II focuses on the state and progress

of digital infrastructure in the Pacific.

Chapter III explores the ecosystem for digital entrepreneurship in the Pacific, highlighting both the opportunities and barriers faced by entrepreneurs. It emphasizes the role of MSMEs in driving digital innovation and the importance of creating an enabling environment that supports their growth. The chapter also gives special attention to women entrepreneurs and other marginalized groups in the digital economy, stressing the need for inclusive policies and targeted support to ensure equitable access to digital opportunities.

Chapter IV shifts the focus to digital trade, examining the region's initial steps towards engaging with global e-commerce markets. It looks at the growth of local e-commerce platforms and informal digital marketplaces, alongside the role of remittances in driving demand for digital services. It also discusses the regulatory frameworks required to support the development of digital trade in Pacific SIDS, with a focus on overcoming logistical and infrastructural challenges that have traditionally hindered cross-border commerce.

The final chapter provides a set of strategic recommendations for advancing the Pacific's digital economy. It connects the report's findings to ongoing regional initiatives, such as the Pacific E-commerce Initiative, the Pacific Digital Economy Programme and other collaborative efforts. It emphasizes the need for Pacific SIDS to align their national strategies with regional frameworks to build a more inclusive and resilient digital ecosystem capable of supporting long-term growth and development.

National e-commerce strategies lay the groundwork for digital transformation across the Pacific.







Chapter II

# Enhancing connectivity for digital entrepreneurship and trade in the Pacific





**Connectivity is an essential enabler of digital transformation. For example, universal and meaningful connectivity—understood as the possibility for everyone to enjoy a safe, satisfying, enriching, productive online experience at an affordable cost—has become a new G20 policy priority (Cavalcanti, 2024), while the Pacific faces persistent infrastructure challenges in achieving such connectivity.<sup>1</sup> However, it is important to not only provide infrastructure but also to focus on encouraging digital adoption and use among consumers and businesses.**

**This chapter provides an update of the situation presented in the Digital Economy Report: Pacific Edition 2022 (UNCTAD, 2023), with recent developments discussed in section A, covering updates on submarine cables, mobile networks and the growing role of LEO satellites. Section B explores challenges to the adoption of digital technologies and applications, focusing on Internet affordability and access to devices. Section C makes policy recommendations before concluding the chapter.**

## A. From connectivity to performance

This section explores how digital infrastructure underpins connectivity and enhances digital performance in Pacific SIDS. It examines five key components:

- Submarine cables as the backbone of data transmission;
- Mobile networks as key to last-mile connectivity;
- Internet exchange points (IXPs) and data centres for localized traffic and storage;
- LEO satellites offering connectivity for remote areas;
- Internet performance metrics that reflect the region's digital readiness.

Together, these elements highlight progress, gaps, and opportunities for advancing digital inclusion and economic growth.

### 1. Submarine cables

Submarine cables are a key factor of international connectivity and central to data transmission to, from and between Pacific SIDS. Data flows play an increasingly important role in the digital economy as everyday online activities—such as Internet browsing, communications, social media, streaming, and accessing financial and government services—increase. International cables, particularly intercontinental undersea ones, are important for providing adequate bandwidth and speed to highly populated nodes in the Pacific, while domestic cables help extend connectivity to more remote places. As highlighted in the UNCTAD (2023) report, having multiple connections not only increases international bandwidth and Internet speed but also provides

<sup>1</sup> While electricity access is crucial for digital connectivity, its detailed analysis lies beyond the scope of this report.



redundancy in the event of prolonged cable disruptions, which can occur because of natural disasters or other accidents. So far, seven out of the 20 Pacific SIDS still rely on a single submarine cable connection.

Several major infrastructure projects are under way (see Table II.1).<sup>2</sup> Notably, the *South Pacific Connect* initiative (led by Google Cloud) will establish three trans-Pacific subsea cables: *Honomoana* will connect the United States with French Polynesia and Australia; *Tabua* will connect the United States with Fiji and Australia; and the *South Pacific Connect Interlink* will connect Fiji and French Polynesia.<sup>3</sup>

Supported by funding from the Governments of Australia and the United States, this initiative will also extend the cable network to nine other Pacific SIDS: Kiribati, Marshall Islands, the Federated States of Micronesia, Nauru, Papua New Guinea, Solomon Islands, Timor-Leste, Tuvalu and Vanuatu (Hunnicut, 2023). Building on this, the *Central Pacific Connect* will install two more cables, creating a ring between Fiji, French Polynesia and Guam, further strengthening the resilience of the Pacific network. These initiatives build on the *Southern Cross NEXT* cable that was completed in 2022, with landing points in Australia, Fiji, Kiribati, New Zealand, Tokelau and the United States.



**Table II.1**

**Recently completed and planned undersea cable projects in the Pacific region**

Year for completion	Cable name and length	Details
2023	Natitua Sud (820km)	Connecting Tubuai and Rurutu to Hitia'a (French Polynesia)
2023	Tokelau Submarine Cable (250km)	Connecting Atafu to Fakaofu (Tokelau)
2024	Timor-Leste South Submarine Cable (600km)	Connecting Dili (Timor-Leste) to the North-West Cable System in the Timor Sea
2025	East Micronesia Cable System (2,250km)	Connecting Bairiki (Kiribati), Yaren (Nauru) and Tofol (Federated States of Micronesia) to the HANTRU1 Cable System originating in Alupang (Guam)
2025	Echo (17,184km)	Connecting Agat and Piti (Guam), Tanjung Pakis (Indonesia), Ngeremlengui (Palau), Changi North (Singapore) and Eureka (United States)
2026	TAMTAM cable (375km)	Connecting Wé (New Caledonia) to Port Vila (Vanuatu)
2026	South Pacific Connect Interlink (length to be determined (TBD))	Connecting Fiji to French Polynesia, ports TBD
2026	Honomoana (length TBD)	Connecting Australia (Sydney and Melbourne), French Polynesia (TBD), New Zealand (Auckland) and the United States (TBD)
2026	Tabua (length TBD)	Connecting Fiji (TBD), Australia (Sydney) and the United States (TBD)
2026	Bulikula (length TBD)	Connecting Fiji (TBD), Tuvalu (Funafuti), Papua New Guinea (TBD) and Guam (TBD)

Source: UNCTAD, based on TeleGeography's Submarine Cable Map, available at <https://www.submarinecablemap.com/>.

<sup>2</sup> Table II.1 is the latest update of developments in the submarine cables infrastructure in the Pacific since 2022. For a complete picture of the submarine connections in this region, please see UNCTAD (2023).

<sup>3</sup> See <https://cloud.google.com/blog/products/infrastructure/honomoana-and-tabua-subsea-cables-connect-south-pacific>. The 2022 report (UNCTAD, 2023a) highlighted the growing trend of major technology firms such as Google (Alphabet), Facebook (Meta), Amazon and Microsoft investing significantly in developing their own bandwidth capacity. While these investments have the potential to improve access, they also enable these firms to reduce reliance on public carriers and exert greater control over the quality and pricing of services.



Data transmitted via undersea cables in the Pacific is distributed by broadband infrastructure, which is managed by a combination of public and private providers. The efficacy of these networks can be measured by ‘international bandwidth capacity’ (see section B.5 on Internet performance). Infrastructure owned by governments or regional telecommunications companies impacts both international bandwidth capacity and end user experience. The acquisition of Digicel Pacific by Telstra, a leading telecommunications provider in Australia with an established presence in Asia and the Pacific, financially supported by the Australian Government, exemplifies international investment in local infrastructure and services (Global System for Mobile Communications Association (GSMA), 2023a). This investment is anticipated to enhance international bandwidth capacity in the region.

If the existing network of submarine cables in the Pacific remains unchanged while the planned new cables (see Table II.1) and the extensions under the Pacific Connect Initiative become operational, by 2026, all Pacific SIDS will be connected to at least one submarine cable. This will include Nauru, Timor-Leste and Tuvalu for the first time. However, two countries out of 20—Cook Islands and Niue—will still be reliant on a single cable connection, making them vulnerable to potential connectivity disruptions.

## 2. Mobile networks

Mobile networks provide essential last-mile connectivity (UNCTAD, 2023). While 2G (second-generation) mobile network technology offers the most widespread coverage, later generations that allow Internet connectivity, like 3G, and particularly 4G and 5G for meaningful connectivity, are essential to support e-commerce and other digital activities carried out on mobile devices effectively. Since the last edition of this report (UNCTAD, 2023), statistical coverage of countries has improved, and the latest data show that 58 per cent of the population in Pacific SIDS as a group was covered by 4G technology in 2022 (see Figure II.1).

However, differences persist between countries. In the Federated States of Micronesia and Solomon Islands, less than a third of the population had 4G coverage and just half had 3G in 2022. Conversely, 4G access is nearly universal in Samoa, and over 90 per cent of the population in Fiji, Tonga and French Polynesia have access to at least 4G, which supports greater economic activity and serves as a backup for limited fixed-line broadband connections, generally low across all Pacific SIDS. The transition to 5G will not only require significant new and upgraded physical infrastructure but also the availability of affordable 5G-compatible devices.

In the Pacific, especially in rural areas, Internet access primarily depends on mobile networks rather than fixed-line broadband. However, mobile networks are concentrated in more populous areas due to the cost-benefit considerations of telecommunications providers, leaving many rural and remote regions with relatively poor coverage. Lack of connectivity can exacerbate social and economic disadvantage (Marshall, 2024). PIFS (2020) underscores the importance of expanding 3G and 4G/long-term evolution networks in non-urban areas.

GSMA (2023a) notes that 5G is still at an early stage in the Pacific, with only Guam and the Northern Mariana Islands having launched commercial services as of March 2023. Nevertheless, operators across the region are actively preparing their networks for 5G deployment. For instance, Vodafone Fiji and Digicel have received licences to conduct 5G trials, with commercial services anticipated by late 2024 (Tanner, 2024). By 2030, it is expected that 5G connections in the Pacific Islands will reach 1.5 million, accounting for 17 per cent of total mobile connections (GSMA, 2023a). However, the rollout of 5G in the region also comes with challenges (see Box II.1). Despite the arrival of 5G, the 4G network is still growing and will remain vital for the Pacific digital economy for at least the next decade, supporting technologies like Internet of things in Cook Islands, Fiji and Papua New Guinea (GSMA, 2023a).

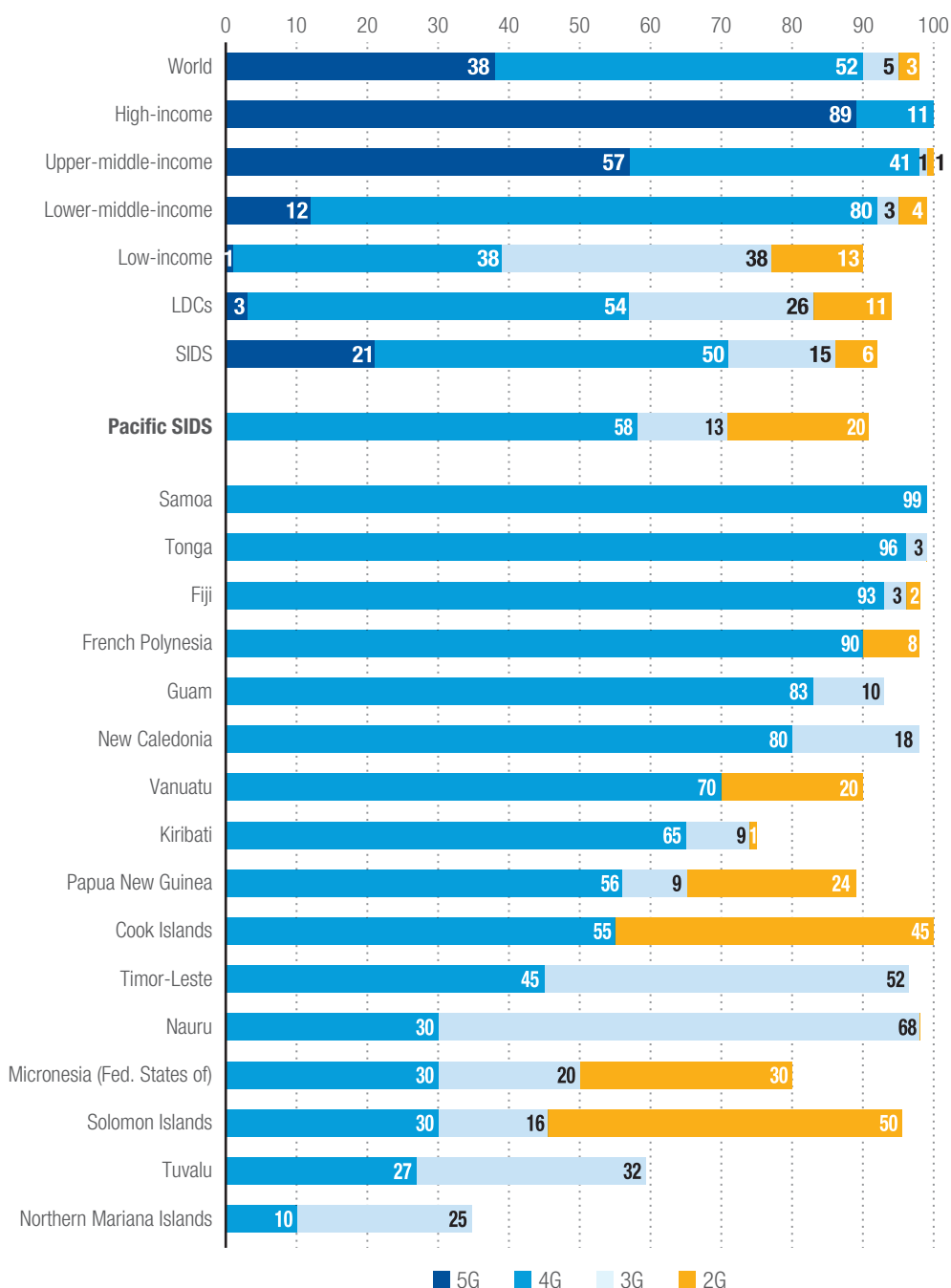
By 2026, all Pacific SIDS will be connected to at least one submarine cable.

5G adoption in the Pacific is progressing but 4G remains essential for the next decade.



**Figure II.1**

**Population coverage of mobile network technology (2G, 3G, 4G and 5G), by selected country groupings and Pacific SIDS, 2023 or latest available year (Per cent)**



Source: UNCTAD calculations, based on ITU (2023b); and ITU DataHub (2024).

Notes: The percentages for 2G, 3G, and 4G networks represent the incremental population coverage not reached by more advanced networks (e.g. global coverage: 2G at 38+52+5+3=98 per cent, 3G at 38+52+5=95 per cent, 4G at 38+52=90 per cent and 5G at 38 per cent). Pacific SIDS included in the figure have data for at least three technologies (2G, 3G, 4G) from 2022 or 2023. In 2023, 5G coverage data was available only for Kiribati (0.02 per cent) and Vanuatu (0 per cent), while earlier data from 2021 showed 5G coverage only in Guam (18.5 per cent) and Northern Mariana Islands (18.4 per cent). Data years vary: 2023 for Kiribati, Timor-Leste and country groupings (except Pacific SIDS), and 2022 for other Pacific SIDS and the group average.







## Box II.1

### The promise of 5G in Fiji and Papua New Guinea

In a study of how consumers, the private sector and governments are imagining the future of 5G in the Pacific, Horst and Foster (2024) uncover tensions shaping policy and investment in both Fiji and Papua New Guinea. They observe political and cultural factors impacting the roll-out of 5G.

The article highlights how the concept of ‘digital imagination’ around 5G differs across social groups, with affluent users and state actors in Fiji and Papua New Guinea viewing the technology as a means of modernizing communication, improving disaster response and driving economic growth. However, the public’s reaction is more mixed. In both countries, public scepticism has been fuelled by conspiracy theories linking 5G to health concerns, especially during the coronavirus disease (COVID-19) pandemic. These concerns have roots in deeper cosmological beliefs, including fears of 5G towers being linked to dystopian future scenarios.

Corporate plans and national policies are not only being shaped by these local concerns but are also heavily influenced by international geopolitics. The rivalry over the control of telecommunications infrastructure plays a significant role, with Chinese companies involved in building 5G infrastructure, such as Huawei, raising security concerns among Western countries like Australia and the United States. These external pressures have influenced how Fiji and Papua New Guinea approach the development of 5G infrastructure.

The study further emphasizes how the roll-out of 5G in these Pacific nations could exacerbate existing inequalities. While urban areas in Fiji and Papua New Guinea are poised to benefit, rural areas may remain underserved. Additionally, concerns about the high cost of 5G devices and network access have raised questions about the technology’s accessibility for the general population. These socioeconomic challenges, combined with public health fears and geopolitical influences, make the future of 5G in the Pacific both promising and fraught with complexity.

*Source:* UNCTAD, based on Horst and Foster (2024).

In the early stages of 5G adoption, non-stand-alone services, which utilize existing 4G long-term evolution infrastructure, offer a cost-effective approach to deployment. While stand-alone 5G, with its dedicated 5G core, provides lower latency, greater efficiency, and capacity to support emerging technologies like Internet of things, its benefits may not be fully warranted in the Pacific context. Given the region’s current level of digitalization, the justification for 5G remains limited, making a focus on enhancing 4G networks or non-stand-alone 5G the more practical near-term option. Transitioning to stand-alone 5G, however, will be essential in the longer term to fully realize the potential of future technologies.

### 3. Internet exchange points and data centres

IXPs and data centres are critical components of digital infrastructure. IXPs reduce reliance on international bandwidth by enabling local traffic exchange, while data centres support localized content storage and processing. Together, they enhance the efficiency of international bandwidth use, reduce costs, improve latency and enable faster access to digital services (ITU, 2022). Additionally, IXPs provide content providers, hosting companies and governments with a physical hub to exchange Internet traffic via shared switching infrastructures. With the growing adoption of artificial intelligence (AI) technologies—demanding significant computational power and



scalable infrastructure for complex algorithms and large data volumes—investments in data centres are increasing across the Asia-Pacific region.

Despite their importance, there are only a few IXPs in the Pacific region, including Guam, Papua New Guinea, Fiji, New Caledonia, Timor-Leste, Tonga and Vanuatu (UNCTAD, 2023). To further develop the capacity of local networks, the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) is working with Pacific SIDS, such as Samoa,

to establish more IXPs, including supporting local stakeholders to undertake technical audits and capacity-building workshops to strengthen awareness on establishing a Pacific IXP.<sup>4</sup> UNCTAD identified 20 co-location data centres in Pacific SIDS as of January 2024, with an average of 1.6 data centres per million people (see Table II.2).<sup>5</sup> This population-relative score places them between developed countries (3.3) and the global average (0.8); however, this favourable ranking is mostly due to SIDS' small populations.



**Table II.2**

**Data centres, total and per million inhabitants, by selected country groupings and Pacific SIDS, 2024**

	Number	Per million inhabitants
<b>Country grouping</b>		
<b>World</b>	5,520	0.8
<b>Developed economies</b>	4,448	3.3
<b>Developing economies</b>	1,072	0.2
<b>LDCs</b>	32	0.1
<b>SIDS</b>	73	5.9
<b>Pacific SIDS</b>	20	1.6
<b>Selected economies</b>		
<b>Northern Mariana Islands</b>	2	40.0
<b>Guam</b>	5	28.7
<b>New Caledonia</b>	4	13.5
<b>Micronesia (Federated States of)</b>	1	8.6
<b>French Polynesia</b>	1	3.2
<b>Vanuatu</b>	1	2.9
<b>Solomon Islands</b>	1	1.3
<b>Papua New Guinea</b>	5	0.5

Source: UNCTAD, calculations based on Data Centre Map, available at <https://www.datacentremap.com/datacentres/>; Cloudscene, available at <https://cloudscene.com/region/datacenters-in-asia-pacific/>; Peering DB, available at <https://www.peeringdb.com/>; and UNCTADstat, available at <https://unctadstat.unctad.org>. Data were retrieved in January 2024.

Notes: The data for global and group comparisons (excluding Pacific SIDS) is sourced solely from the Data Centre Map, which relies on entries maintained by service providers. Countries not listed either lack data centres or have unavailable data. Population-weighted averages are used for group comparisons.

<sup>4</sup> See, for example, UNESCAP Capacity Building Workshop on Strengthening Internet Traffic Management in the Pacific, <https://www.unescap.org/events/2023/capacity-building-workshop-strengthening-Internet-traffic-management-pacific#>.

<sup>5</sup> Data on the number of data centres is not sourced from a single official entity, with international comparisons primarily focusing on co-location data centres. These facilities host servers and equipment for multiple organizations, with the provider managing infrastructure such as power, cooling, security and Internet connectivity. This report identifies more data centres in Pacific SIDS compared to the previous edition, as it incorporates additional sources and broader country coverage.



## 4. Low Earth orbit satellite connectivity

As noted in UNCTAD (2023), satellites are crucial for Pacific connectivity, alongside terrestrial and sea infrastructure. The three types of satellites are geostationary, medium Earth orbit and LEO. In particular, LEO satellites like OneWeb and Starlink are seen as potential game-changers for broadband and mobile coverage in remote areas. The rapid advancement of LEO satellites is demonstrated by the accelerated pace of launches. Approximately 80 per cent of all operational LEO satellites were launched between 2019 and April 2023, with Starlink alone accounting for more than half of these satellites (UNCTAD, 2024c).

While LEO satellites primarily enhance international connectivity, they have the ability to deliver Internet directly to end users, thereby bridging the gap between international and local connectivity, bypassing local Internet service providers and infrastructure. LEO services also hold significant promise for disaster resilience in the Pacific.<sup>6</sup>

Starlink services became available in several Pacific SIDS in 2024. However, the roll-out has so far been sporadic and complex due to varying local conditions. Authorities with differing capacities and expertise in telecommunications regulation are making different licensing decisions. Fiji (Fiji One News, 2024), Samoa (Sanerivi, 2024), Tonga (Islands Business, 2024b) and Papua New Guinea (Australia Papua New Guinea Business Council, 2024) were among the first to show interest but some have reversed their support. For example, in April 2024, the Samoan Office of the Telecommunication

Regulator reportedly temporarily banned Starlink kit imports to protect local telecom operators (Islands Business, 2024a).

According to the Starlink website, services are currently available in eight Pacific SIDS, with services coming online in another 12 countries in 2024 or 2025.<sup>7</sup>

Even when LEO connections and hardware become legally available in the Pacific, their uptake by end users may be hampered by high initial set-up costs and ongoing service fees. In parallel, relying solely on this technology may lead to capacity limitations if high uptake occurs in concentrated areas (Speidel, 2024). Another complication is whether users can connect directly through the LEO provider or will need local telcos for access, support and advice. Some governments, like in Palau, are more likely to support LEO services with an in-country presence (United States Agency for International Development (USAID), 2024).

## 5. Internet performance

Internet performance in Pacific SIDS has seen notable developments over the years, yet it remains significantly below global standards. According to UNCTAD (2023), international bandwidth per user has historically lagged behind other parts of the world; the SIDS group average was around 30 kilobits per second in 2017—less than half that of all developing countries.<sup>8</sup> Although there have been improvements, such as Tongan bandwidth reaching nearly 100 kilobits per second by 2020, many Pacific SIDS still face severe limitations, resulting in slower Internet speeds, higher latency and reduced access to online resources. These limitations not only restrict or disrupt online economic

LEO satellites offer significant potential to bridge connectivity gaps in remote Pacific areas.

<sup>6</sup> LEO satellites have already demonstrated their crucial role in disaster response and recovery, as seen when they provided essential connectivity after Tonga's undersea cables were damaged by a volcanic eruption in 2022. The Fijian Telecommunications Authority, at Tonga's request, granted a temporary licence to re-establish international connectivity using 50 Starlink terminals, complementing existing satellite services (UNCTAD, 2023 and USAID, 2024).

<sup>7</sup> According to Starlink, services are currently available in American Samoa, Cook Islands, Fiji, Federated States of Micronesia, Guam, Northern Mariana Islands, Solomon Islands and Tonga, and will become available in 2024 in French Polynesia, Marshall Islands, Nauru, Niue, Palau, Papua New Guinea, Timor-Leste, Tokelau, Tuvalu and Vanuatu; and in 2025 in Kiribati and Samoa. The availability for New Caledonia is currently unknown. See also <https://www.starlink.com/map>.

<sup>8</sup> UNCTAD calculations, based on ITU (2023b); and ITU DataHub, accessed November 2023 at <https://datahub.itu.int/indicators/>. The values for groupings are estimates by ITU for the year 2022.



activities but could also force businesses to invest in alternative solutions, both of which drive up operational costs and hinder the economic growth of Pacific SIDS.

The speed of both fixed-line and mobile-broadband services can determine if customers feel they are receiving good value for the price they pay, as slower speeds can reduce the perceived quality of value-for-money plans. Generally, the median speed of fixed broadband in Pacific SIDS is only one-quarter as fast as in all SIDS and almost half the average speed in LDCs (see Figure II.2a). Additionally, mobile broadband offers faster connection speeds compared with fixed-line broadband in Fiji and Papua New Guinea, the only two Pacific SIDS for which data is available (see Figure II.2b). Consequently, mobile-broadband speeds in these two countries are more aligned with the median speeds of all SIDS or LDCs, contributing to relatively high smartphone adoption rates and reliance on mobile networks for business purposes (see section B.3).<sup>9</sup>

In terms of digital economic activities, download speed is particularly relevant for consumption, while upload speed is more relevant for production. Latency affects the efficiency and timeliness of signal exchange (e.g. high latency can delay audio and video in online conferencing). To understand the implications of Internet speed for digital trade in the Pacific, Table II.3 compares fixed-line and mobile Internet speeds for Fiji, the digital economic hub of the Pacific, with two other SIDS, Singapore and Maldives. The choice of countries was motivated by the fact that Singapore performs very well globally in terms of infrastructure and Internet speeds, while Maldives shares some geographical characteristics with Pacific SIDS.

For mobile broadband, the average download speeds in Maldives and

Singapore are three and four times higher, respectively, than in Fiji, while the upload speed in Maldives is twice as fast as the Fijian average in 2024. For fixed-line Internet, Fiji and Maldives are at similar download and upload speed levels but far behind Singapore on both measures, and therefore limited for digital economic activities like online shopping. The striking disparity between Singapore and the other two countries suggests that the Pacific risks being left behind in advanced data practices and AI adoption.

Comparing Fiji to Maldives reveals further insights into constraints and opportunities for digital development in the Pacific. While the fixed-line Internet speeds are relatively low for both countries, Maldives' mobile Internet download and upload speeds are much higher than in Fiji in 2024, even surpassing those of Singapore for upload. Fiji, like other Pacific SIDS, has the potential to improve its mobile Internet speeds, as demonstrated by Maldives, which has achieved higher upload and download speeds despite similar geographic challenges. Improvements could be achieved by investing in mobile transmission networks (4G, 4G+ and 5G) and IXPs.

Internet service reliability in the Pacific is a significant issue and Internet downtime reported by individuals and businesses in Tonga affects daily life and the work environment (see Box II.2). The region's vast geography and dispersed islands require extensive, costly infrastructure that serves fewer people, making networks difficult to build and maintain. Mobile infrastructure is similarly vulnerable to power outages and environmental factors. While LEO satellites offer a promising alternative, they are still new and costly, limiting widespread adoption.

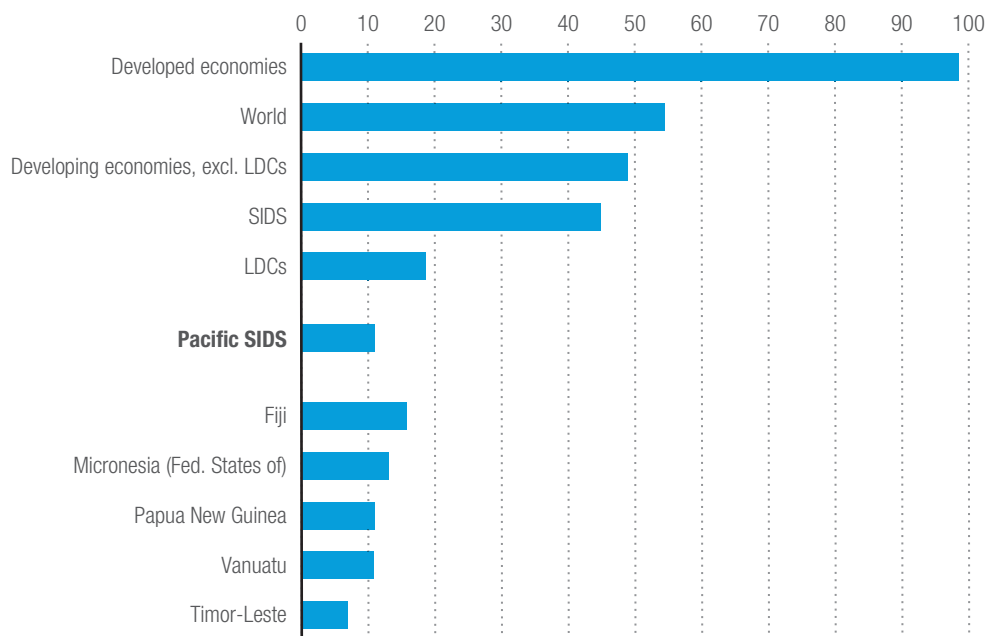
Internet reliability remains a challenge in the Pacific, hindered by geographic and infrastructure constraints.

<sup>9</sup> It is worth noting that, in the case of Ookla's data, the number of speed measurements used to compile the medians can be low, which may hamper comparability between countries.

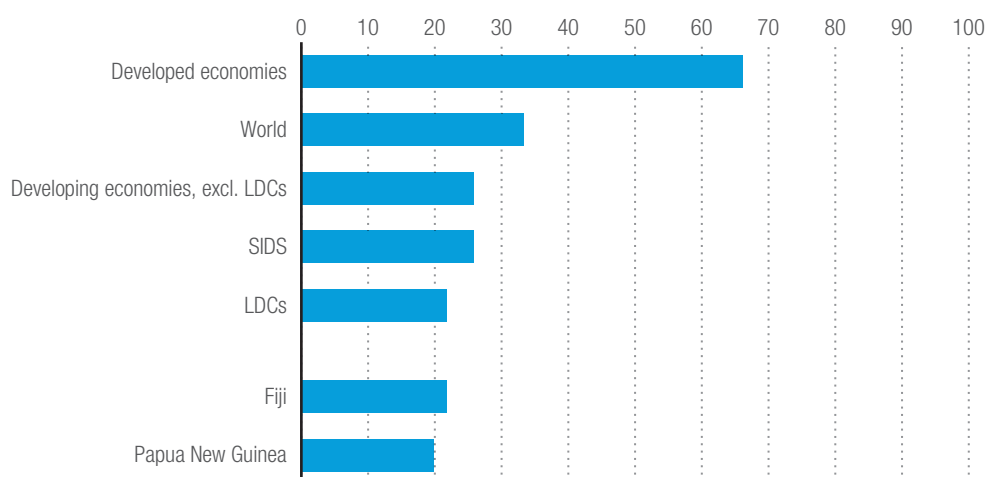


**Figure II.2**  
**Internet connection speed, by type of broadband, selected country groupings and Pacific SIDS, 2023**  
(Megabits per second)

**a. Fixed-line broadband**



**b. Mobile broadband**



Source: UNCTAD calculations, based on Ookla, Speedtest global index. Available at <https://www.speedtest.net/global-index> (accessed December 2023).

Notes: The data reflects October 2023 figures, as Ookla's latest data (accessed November 2024) was available only for Fiji (28 Megabits per second for fixed-line broadband). To ensure broader inclusion of Pacific SIDS, the October 2023 data was retained. Speeds represent median download rates, with world and group averages based on UNCTAD calculations.



### Table II.3

#### Mobile and fixed-line Internet performance for Fiji, Maldives and Singapore in 2024

		Fiji	Maldives	Singapore
Mobile	Download (mbps)	25	88	99
	Upload (mbps)	11	22	17
	Latency (ms)	21	18	17
Fixed-line	Download (mbps)	17	13	287
	Upload (mbps)	10	12	232
	Latency (ms)	18	6	4

Source: UNCTAD, based on Ookla, available at <https://www.speedtest.net/global-index> (accessed April and May 2024).

Notes: Mbps stand for Megabits per second, while ms for Milliseconds (lower ms values indicate a faster response time, which is crucial for real-time activities like video calls or online trading).



### Box II.2

#### Esiaola Quality Furniture: Internet reliability and impacts on business in Tonga

Esiaola Quality Furniture Limited, founded in 1981, is a family-owned business in Tonga, specializing in furniture manufacturing. The company serves a diverse clientele, including individuals, businesses and institutions, primarily based in Tongatapu.

Ani Mataele is the General Manager and the second generation of the family business. According to her, digital tools have played a crucial role in enhancing operational efficiency and customer outreach. Important tools include Excel for worksheet management, social media platforms like Facebook and Instagram for marketing, Google Mail for communication, online storage solutions, and electronic banking for financial transactions.

However, her business is negatively impacted by unreliable and unstable Internet connectivity. Frequent disruptions and unreliable service from providers like Digicel and TCC often lead to operational inefficiencies. For example, the company has found it is necessary to sign up to both providers to ensure they have a working backup at all times, frequently switching between them to stay online. This practice has elsewhere been referred to as 'layering up' on both services and devices (Marshall, 2024), which increases the costs and complexity of staying connected.

Intermittent Internet connectivity poses substantial challenges for day-to-day business operations. Ani mentions instances where Internet downtime results in disruptions to communication with suppliers and customers, inability to conduct online transactions, and increased reliance on manual processes, leading to lower productivity and additional expenses associated with the use of alternate Internet providers.

Challenges posed by Internet unreliability highlight the pressing need for targeted interventions and investments in digital infrastructure to support the growth and sustainability of businesses like Esiaola Quality Furniture.

Source: UNCTAD, based on an interview with Esiaola Quality Furniture Limited (16 August 2023).



## B. Internet adoption is growing slowly

The lack of affordable Internet access in Pacific SIDS hinders business growth and development (Reddy et al., 2022; ITU, 2024b). High-quality fixed broadband is expensive and scarce, especially outside urban centres. Poor Internet services also deter investment, as high-quality connections are needed to support modern technologies that are essential in many business activities. These challenges are worsened by factors specific to SIDS, such as remoteness, limited markets, narrow economic bases, high energy and infrastructure costs, and vulnerability to climate change (Makun et al., 2022).

### 1. Access to digital devices

Smartphones are a critical enabler of opportunity for e-commerce and digital trade. They have far more capacity for digital exchange through apps (e.g. social media, communications, trading platforms and banking) than traditional mobile phones, which facilitate voice and text only. From a digital literacy perspective, while more complex than traditional mobile handsets, smartphones are relatively easy to operate and perform both voice and data functions. However, smartphones cannot perform the full range of functions that could be needed for more advanced e-commerce activities, such as AI-enabled automation of business processes, which may require use of desktops or laptops with greater processing power and specialized software.

Where fixed broadband is unavailable or too costly, Pacific residents use smartphones and mobile data to carry out business activities online (UNCTAD, 2023). ITU reports that the share of individuals (aged 10 or older) owning any mobile phone in SIDS increased from 65.9 per cent in 2019 to 73.6 per cent in 2023.<sup>10</sup> The Pacific also showed rapid growth in the adoption of smartphones, which is the share of smartphone connections among all mobile connections, during this period (see Figure II.3). Except for Kiribati (57 per cent), countries had achieved or exceeded a rate of 80 per cent in smartphone adoption in 2022, aligning with global trends. By 2030, this rate is expected to reach around 90 per cent (GSMA, 2023a).

This near universal level of smartphone adoption likely reflects significant investments in 3G, 4G and emerging 5G network availability and quality in the past few years. For example, Vodafone's \$98.6 million upgrade in Fiji aims to raise 4G+ coverage to over 90 per cent of the population (GSMA, 2019), while smartphone adoption is expected to surpass 90 per cent in 2027 (GSMA, 2023a). In Fiji, mobile Internet download speeds now exceed those of fixed-line services, incentivizing smartphone use. Digital and financial literacy surveys by UNCDF (see Box II.3) confirm higher smartphone access compared to tablets, laptops or desktop computers, the latter being generally more expensive or necessitating fixed-line broadband connection, and advanced digital literacy in the case of computers (see Figure II.4).

Smartphones are unlocking digital opportunities, yet advanced devices are essential for driving sustained growth.

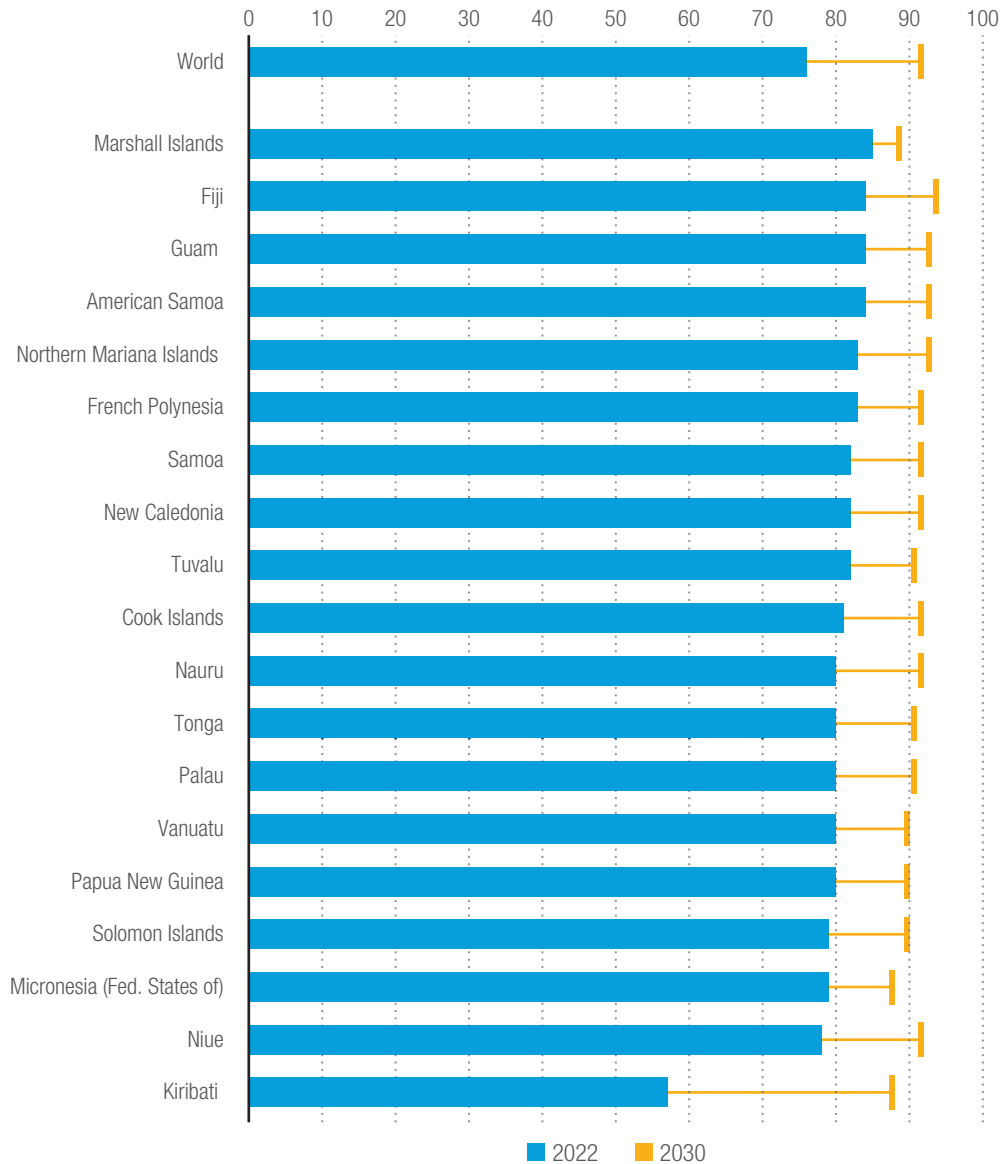
<sup>10</sup> UNCTAD, based on ITU (2023b).





**Figure II.3**

**Smartphone adoption, global and Pacific SIDS, selected years**  
(Per cent)



Source: UNCTAD, based on GSMA (2023a).

Notes: Smartphone adoption is the percentage share of smartphone connections to all mobile (SIM) connections. The 2030 data are GSMA forecasts. Data were not available for Timor-Leste.







### Box II.3

#### How the UNCDF digital and financial literacy surveys are carried out

To compensate for the lack of official statistics, this report draws partly on surveys conducted by UNCDF between September and December 2022 on digital and financial literacy across six Pacific Island countries: Papua New Guinea, Samoa, Solomon Islands, Timor-Leste, Tonga and Vanuatu. The surveys sought to provide essential data to guide interventions aimed at improving digital financial competencies, particularly among marginalized groups such as women, youth, rural communities and small business owners.

The survey methodology employed a mixed-mode approach that combined computer-assisted personal interviewing with computer-assisted telephone interviewing to ensure broad coverage across various population segments. Representative samples were selected using random digit dialling and probability proportional to size techniques. Interviews were conducted in local languages, ensuring inclusive participation across all demographics. The sample was stratified by gender, age and region, with results weighted to align with national population statistics.

In terms of participation, the surveys targeted individuals aged 15–74 years, with sample sizes varying by country. The final sample was adjusted through weighting to align with the most recent population statistics in each country. Individuals were randomly selected within households for face-to-face interviews, ensuring the sample reflected national demographics in terms of gender, age and region.

The survey results not only established baseline data for digital and financial literacy but also set a framework for tracking progress over time. UNCDF and Tebbutt Research plan to conduct follow-up surveys in 3–5 years to evaluate the impact of ongoing digital financial literacy programmes based on these baseline findings.

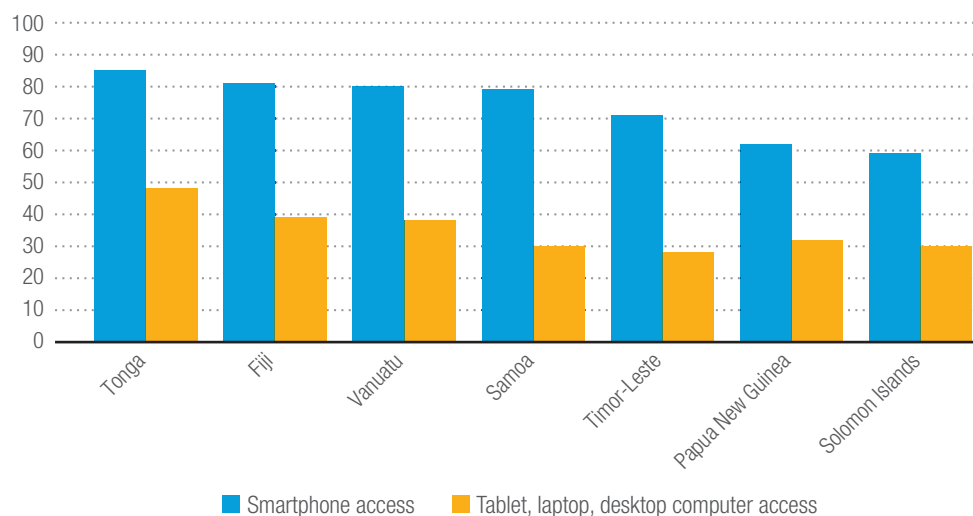
Source: UNCTAD, based on UNCDF (2023a–g).



### Figure II.4

#### Access to digital devices in selected Pacific SIDS, 2022

(Per cent of population)



Source: UNCTAD, based on UNCDF (2023a–g).



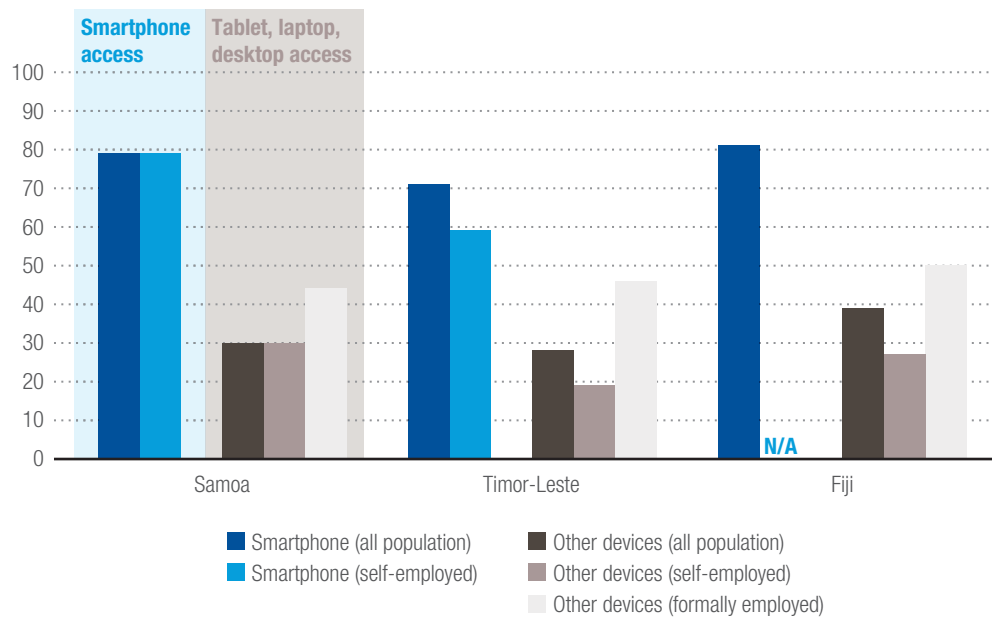
Levels of access to Internet-connected devices can provide insights into entrepreneurial Internet use. Figure II.5 shows device access in Fiji, Samoa and Tonga by employment type, highlighting smartphones as vital for self-employed individuals pursuing digital opportunities. In Samoa, smartphone access is nearly equal among the self-employed and the general population (around 80 per

cent). However, in Timor-Leste, the self-employed lag behind the general population (59 per cent versus 71 per cent). This could be in part because many self-employed individuals are not formal business owners but work in the informal or subsistence sectors (UNCDF, 2023e). Economic constraints faced by these workers may help explain the lower share of smartphone ownership and digital access.



**Figure II.5**

**Access to digital devices, by employment category, selected Pacific SIDS, 2022**  
(Per cent of population in scope)



Source: UNCTAD, based on UNCDF (2023a–g).

Notes: 'Other devices' refers to tablet, laptop, desktop computer access.

Access to tablets, laptops and desktop computers for business use is notably lower among the self-employed, with rates in Fiji and Timor-Leste below 30 per cent and 20 per cent, respectively, and lagging behind the general population. This technological gap is even more pronounced compared with formal employees, who have higher access rates in Samoa,

Timor-Leste and Fiji. While smartphones are widely accessible across populations, limited access to advanced computing devices among the self-employed restricts their ability to perform complex business tasks that require powerful software and capabilities, typically available on laptops and desktop computers.



## 2. Internet subscriptions and affordability

Different kinds of Internet subscriptions can impact on digital trade opportunities. Internet subscriptions in the Pacific include fixed-line, mobile and satellite services, often bundled with mobile voice and SMS services. Mobile-broadband subscriptions continue to outstrip fixed-line Internet subscriptions across the region by a wide margin (see Figure II.6). This reliance on mobile broadband over fixed-line connections is particularly pronounced in regions with relatively low income levels, where mobile devices and data plans are more accessible and affordable, especially among minority groups (e.g. Priege, 2015).

Fixed-line Internet subscriptions are negligible, except in Cook Islands, French Polynesia and New Caledonia, where rates are around the world average (20 subscriptions per 100 people). This is partly due to the significant proportion of the population residing in urban areas (UNCTAD, 2023), as well as earlier and more advanced digital infrastructure development; for instance, in French territories, with undersea cables established in New Caledonia (2008) and French Polynesia (2010).

High rates of mobile subscriptions indicate a reliance on mobile devices for personal and business use, driven by the lower cost and higher speeds of mobile Internet and better affordability of handheld devices compared with laptops and desktops.

The high cost of broadband continues to hamper the uptake of ICT in the Pacific.

Since the previous edition of this report (UNCTAD, 2023), prices as a share of GNI per capita have been relatively stable, with fixed-line broadband costs almost 50 per cent more in Pacific SIDS as a group (6 per cent of GNI per capita) compared to the average for all SIDS in 2023 (see Figure II.7). Fixed-line broadband services are still unaffordable in many countries. For example, in the Solomon Islands and Timor-Leste, costs are equivalent to a half and one-third of the average monthly GNI per capita in 2023, respectively, with the global average being just over 3 per cent.

The average mobile-broadband cost corresponded to about half of the fixed-line cost for the Pacific SIDS as a group in 2023. Consequently, mobile-broadband subscriptions far outnumbered fixed-line subscriptions, except in Federated States of Micronesia, where mobile broadband was more expensive. Fiji, despite its relatively affordable fixed-line Internet, struggles with limited access and relatively low speeds (see section B).

Generally, for most country groupings and for some individual Pacific SIDS, the more affordable the plans are, the higher are the subscription rates (see Figure II.8). Papua New Guinea and Solomon Islands, which have the least affordable mobile-broadband services, exhibit the lowest subscription penetration rates in the region. A comparison between 2017 and 2022 shows that mobile broadband became more affordable for Pacific SIDS as a group, but this has not (yet) been followed by a significant increase in mobile broadband penetration.<sup>11</sup>

High mobile-broadband adoption reflects affordability challenges with fixed-line Internet.

<sup>11</sup> UNCTAD, based on the same source as for Figure II.8. For the Pacific SIDS as a group, the median price of mobile Internet halved from 8.4 to 4.3 per cent of GNI per capita between 2017 and 2022, while the subscription rate for these services increased only from 22.7 to 26.1 subscriptions per 100 people in the same period. The data for 2017 and 2022 were available for: Fiji, Kiribati, Nauru, Papua New Guinea, Samoa, Solomon Islands, Timor-Leste, Tonga and Vanuatu.

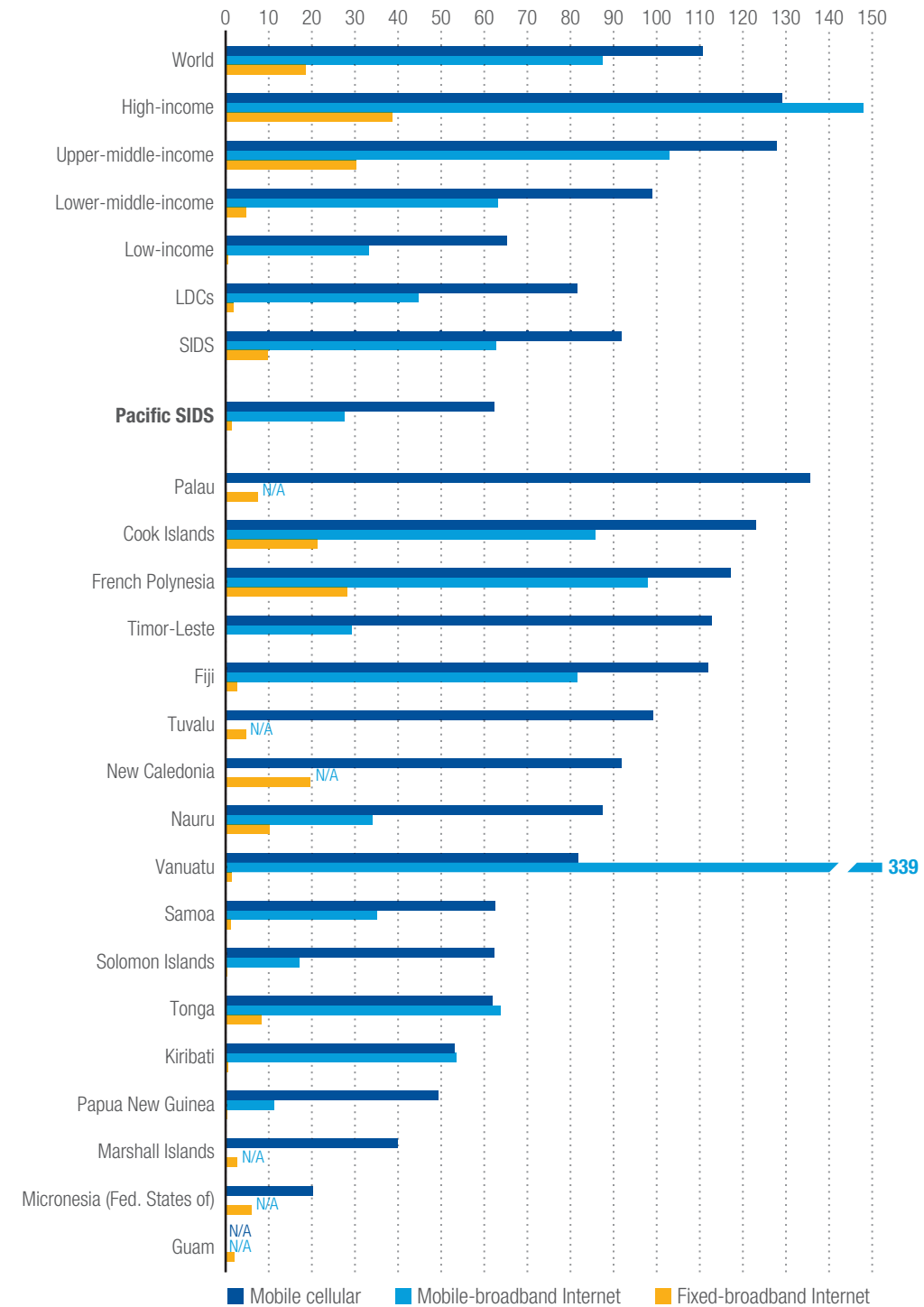




**Figure II.6**

**Mobile cellular and Internet subscriptions, by type, selected country groupings and Pacific SIDS, 2023 or latest available year**

(Per 100 people)

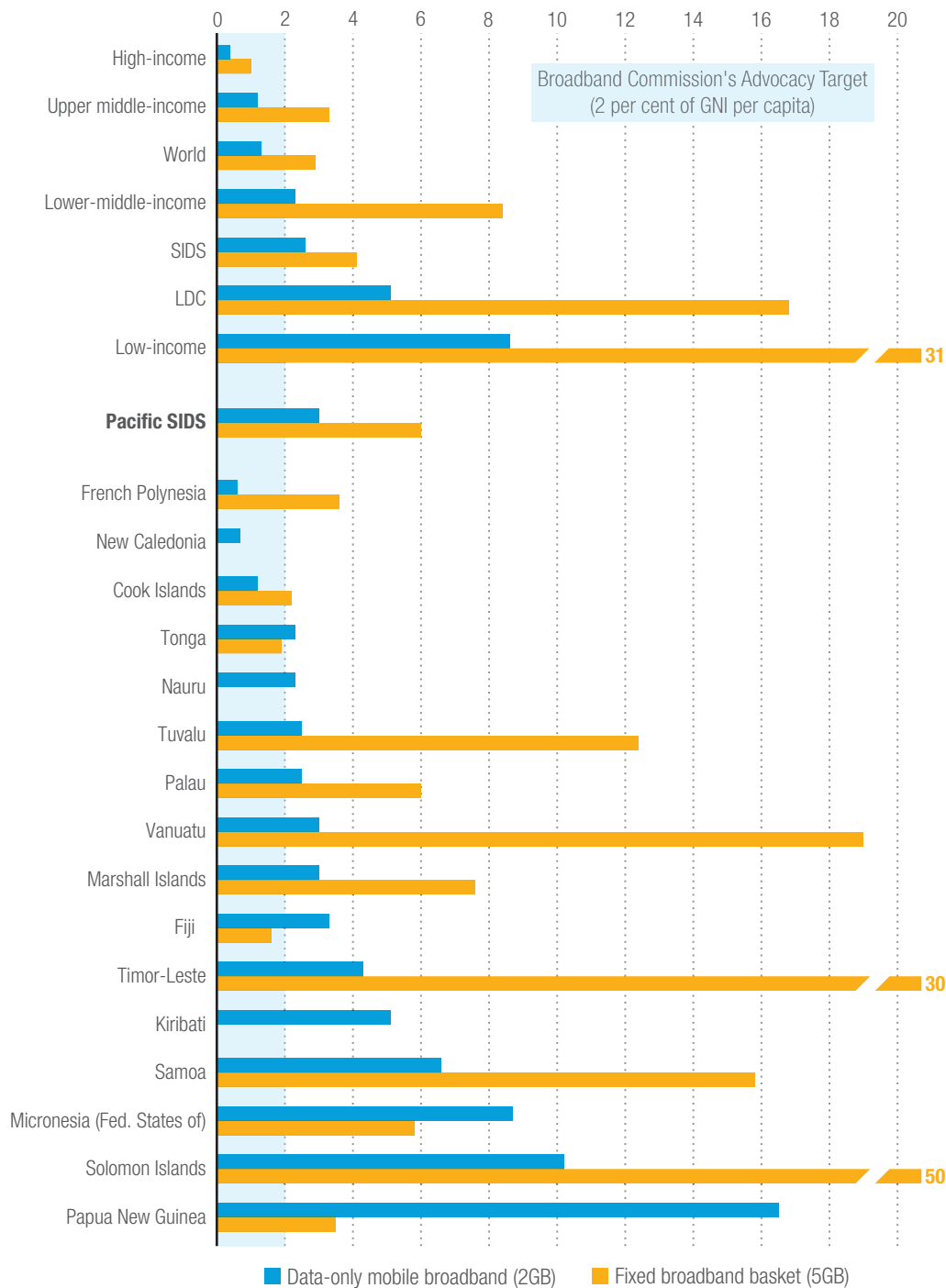


Source: UNCTAD calculations, based on ITU (2023b); and ITU DataHub (2024).

Notes: Where applicable, the data for 2023 concern Kiribati, Palau and Timor-Leste and all country groupings (except Pacific SIDS); the data for 2022 concern other Pacific SIDS individually and Pacific SIDS as a group. Without Papua New Guinea, the most populous country in the region, the Pacific SIDS average subscriptions are the following: fixed-broadband Internet (4 per 100 people), mobile-broadband Internet (69 per 100 people) and mobile cellular (91 per 100 people).



**Figure II.7**  
**Price of broadband subscriptions as a share of monthly GNI per capita, by type, selected country groupings and Pacific SIDS, 2023**  
(Per cent)

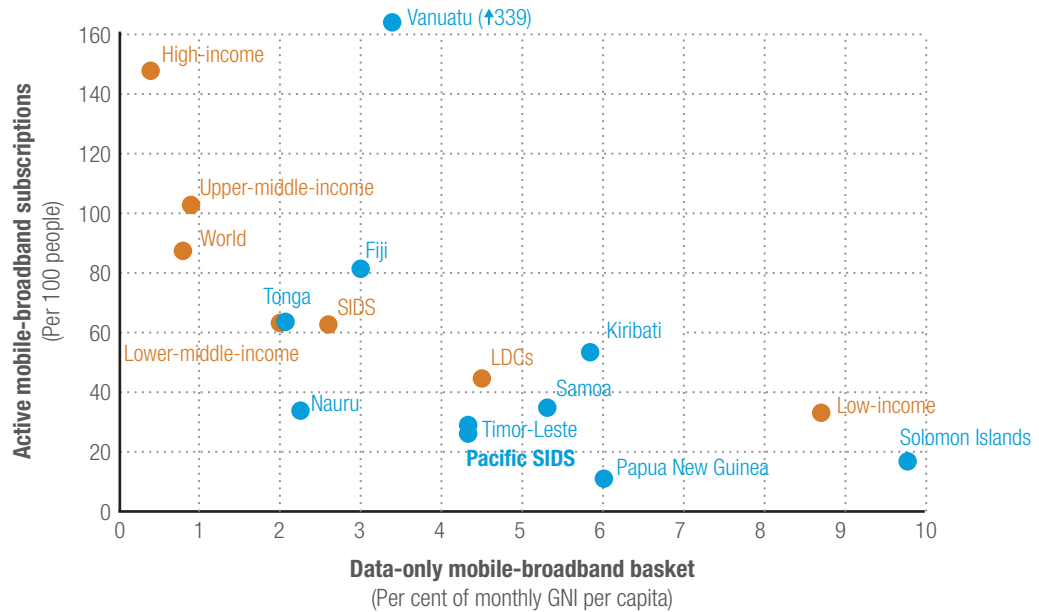


Source: UNCTAD calculations, based on ITU, ICT Price Baskets (2023).

Note: Country groupings are those of the source, except Pacific SIDS. For country groupings data are medians.



**Figure II.8**  
Price of and subscriptions to mobile broadband, selected country groupings, Pacific SIDS, and years



Source: UNCTAD calculations, based on ITU (2023a); ITU (2023b); ITU DataHub (2024).

Notes: Country groupings are of the source (except Pacific SIDS). The 2023 data for both variables concern all country groupings (except Pacific SIDS), Kiribati and Timor-Leste; the 2022 data concern Pacific SIDS as a group (including 2022 data of Kiribati and Timor-Leste), Fiji, Nauru, Papua New Guinea, Samoa, Solomon Islands, Tonga and Vanuatu. For Nauru, the 2022 mobile-broadband price is the average of prices in 2021 and 2023 as data for 2022 were not available.

### 3. Internet use by individuals

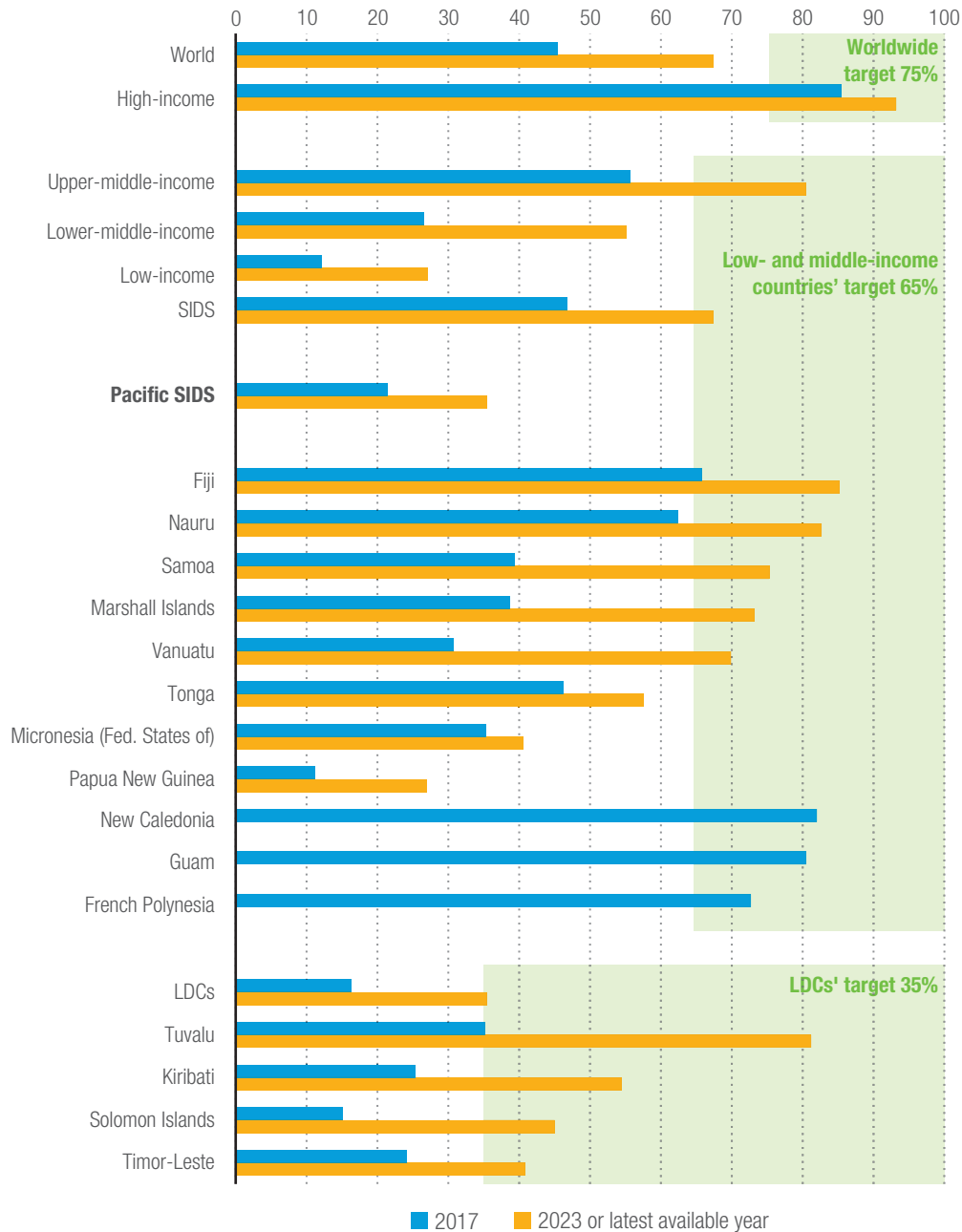
According to ITU (2024) Internet use in SIDS grew by 8.4 per cent annually between 2014 and 2023, outpacing the global growth rate of 6.7 per cent. Available data show that the Pacific also saw notable growth in Internet use in most countries (see Figure II.9). In some countries, Internet users as a share of total population reached between 65 and 85 per cent in 2021–2022,

with Fiji leading. However, Internet use in other countries remains very low. This is particularly the case for Papua New Guinea, the most populous country in the region. Despite a threefold increase in the number of Internet users between 2017 and 2022, only a quarter of the population were online in 2022.<sup>12</sup> Despite individual progress, Pacific SIDS as a group continue to lag behind global averages in this area. In 2023, 67 per cent of the population across all SIDS were online, compared with only 35 per cent in Pacific SIDS in 2022.

<sup>12</sup> A possible explanation for this is the fact that by far the largest part of the population lives in rural areas that suffer from poor connectivity. See also <https://www.weforum.org/agenda/2020/09/papua-new-guinea-digital-transformation-covid-19/>.



**Figure II.9**  
**Progress against Broadband Commission for Sustainable Development targets for broadband Internet user penetration, selected country groupings, Pacific SIDS, and years**  
(Per cent of population)



Source: UNCTAD calculations, based on ITU (2023b); and ITU DataHub (2024).  
Notes: Latest year available: 2023 (world and all groups except Pacific SIDS); 2022 (Pacific SIDS as a group and all individual countries except French Polynesia, Guam, New Caledonia and Tonga); 2021 (Tonga); 2017 (French Polynesia, Guam and New Caledonia). Country groupings are those of the source, except Pacific SIDS (UNCTAD).

## C. Policy options and conclusions

Since the 2022 edition of this report (UNCTAD, 2023), Pacific countries have continued their efforts to improve Internet connectivity and affordability. For example:

- The Government of Solomon Islands (2022) plans to invest in additional mobile infrastructure to expand 3G and 4G coverage, particularly in rural areas, while also connecting all provincial capitals to high-speed Internet via the integrated services digital network. To lower Internet costs, the government will conduct a due diligence study to examine why retail prices remain high despite previous infrastructure investments.
- The Government of Vanuatu (2022) emphasizes investments in a second subsea cable and satellite connections to boost domestic and international connectivity, alongside partnerships with cable operators to reduce data costs.
- The Ministry of Trade and Economic Development of Tonga (2021) intends to improve Internet infrastructure on outer islands by supporting mobile network operators through tax reductions on imported ICT equipment, and fostering PPPs to lower ICT costs and ensure reliable access.
- The Government of Samoa (2022) is focused on expanding transmission towers in underserved areas and enhancing competition by licensing a third Internet provider to improve both coverage and affordability. These measures collectively aim to expand digital access and make Internet services more affordable.

The rest of this section looks at the role of PPPs and ongoing policy efforts to regulate LEO satellite services. It also considers policies that can enhance access to devices, recognizing that without affordable, high-capacity tools like smartphones and computers, many Pacific entrepreneurs will remain constrained in their ability to participate fully in the digital economy.

### 1. Promoting public-private partnerships for end-to-end Internet services

Significant strides in connectivity in the Pacific since 2022 have come from submarine cable projects involving multinational enterprises, regional governments and international investors. The *South Pacific Connect* project stands out, benefiting many Pacific SIDS, remote outposts, the United States and Australia. These transcontinental PPPs are crucial for the Pacific's digital future and global trade routes.

International organizations could play a more active role in brokering such PPPs for digital transformation in the Pacific, drawing on lessons from other parts of the world. For example, the Association of Southeast Asian Nations' (ASEAN) Digital Master Plan 2025 stipulates that ASEAN aims to be 'a leading digital community and economic bloc' by removing regulatory barriers, harmonizing standards, and promoting awareness of the value of digital services (ASEAN, 2021). Similarly, the Common Market for Eastern and Southern Africa (2024) focuses on policy harmonization and regional infrastructure in transport, ICT and energy. PIFS could potentially coordinate the creation of a road map (or similar) for Pacific SIDS' digital future, with a view to attracting corporate investors.

The PRESR (PIFS, 2021) acknowledges that, although substantial investments in digital infrastructure in the Pacific have focused on large-scale projects like fibre-optic cables, further initiatives and funding are necessary. It emphasizes that PPPs will be crucial in lowering costs and encouraging investment, especially to address last-mile connectivity in underserved regions. To this end, governments and international organizations could establish commercial and policy frameworks that support the development of 'meso' infrastructure





(e.g. data centres, distribution networks and mobile network towers), such as by enabling the sharing of mobile network infrastructure between different operators.

Several Pacific SIDS recognize the potential of PPPs to enhance Internet infrastructure in their e-commerce strategies. Samoa (Government of Samoa, 2022) emphasizes their importance for supporting e-commerce adoption by improving ICT infrastructure and fostering community engagement. Similarly, in Vanuatu, the government (Vanuatu, Ministry of Tourism, Trade, Commerce and Ni-Vanuatu Business, 2022) highlights the role of partnerships with cable operators in reducing data costs and promoting wider e-commerce uptake, particularly in underserved areas. The Tonga e-commerce strategy (Tonga, Ministry of Trade and Economic Development, 2021) also underscores the significance of PPPs, focusing on deploying ICT networks to improve last-mile connectivity and reduce the cost of ICT services.

Going forward, governments, international organizations, multinational enterprises, local telecommunications companies and community leaders may work together to find innovative ways to ensure that end users can access and afford high-quality Internet services. The Pacific E-commerce Initiative and Pacific E-commerce Portal can help by centralizing research and information, and hosting transnational discussions on digital development. However, more work is needed to connect multinational investment with local needs.

Another relevant initiative is ITU Smart Islands (see Box II.4), which offers a model for SIDS' digital development. Expanding private-sector involvement in such schemes, especially through partnerships with tech firms, could accelerate infrastructure projects and extend their reach. However, this would need to be balanced with safeguarding project sovereignty and infrastructure. Both the World Bank and the Asian Development Bank (ADB) are also involved in infrastructure projects in the region.

## 2. Finding a balanced approach to LEO satellite services

While LEO satellite services like OneWeb and Starlink are starting to become available to end users, several factors are stalling their implementation, as already identified. From an investment perspective, several challenges limit the ability of Pacific SIDS to attract LEO satellite service providers (USAID, 2024). Small populations and limited spending power in many Pacific countries mean that regulatory frameworks are crucial in influencing how much attention LEO providers give to the region. Restrictive policies and regulatory environments—often designed to protect legacy technologies, companies or political interests—further hinder the ability to capitalize on investments in emerging technologies. Additionally, the lack of regulatory harmonization across Pacific SIDS makes it challenging and time-intensive for LEO providers to navigate the region's diverse regulatory landscapes.

With the introduction of more and varied Internet and mobile services in the Pacific, including through LEO satellites, the role of governments in creating appropriate policy and regulatory settings becomes more complex (Internet Society Foundation, 2023). Governments will need to balance the interests of their residents (e.g. in terms of equitable access and fair prices) with the need for service providers to be profitable and competitive. The emergence of Starlink and its direct marketing to consumers, for instance, has disrupted the role of local Internet service providers in linking broadband and mobile services with end users (see, for example, Speidel (2024)). In many Pacific SIDS, the speed of commercial development is faster than that of regulatory change, reflecting limited capability and resourcing of telecommunications regulators (USAID, 2024).

In addition, many political leaders are divided on the stance on LEOs. Some believe that Pacific-based governments should work to embrace these new technologies to create a

Public-private partnerships are key to advancing digital infrastructure in the Pacific.



‘future competitive environment’ in the best interest of Pacific consumers. For instance, Fiji, Samoa, Cook Islands and Papua New Guinea were among the first to embrace LEO broadband services (though complications have followed, as discussed earlier).

Other countries, including Vanuatu, are more cautious and protective of the commercial viability of local providers that are deemed essential to provide baseline, affordable connections in their countries, particularly if Starlink were to withdraw its service in the future. The divide among countries about LEO satellite broadband could also become a barrier to regional collaboration in securing better pricing and priority deployment with providers.

To help ensure that Pacific Islanders do not miss out on opportunities afforded by LEO satellites, while also protecting the interests and sovereignty of local telcos, governments could consider brokering partnerships whereby local telecommunications providers, as an intermediary, sell LEO services to local consumers. This might help address concerns about these services raised by local stakeholders, such as lack of shopfronts for on-the-ground servicing. Fostering collaboration between global and local service providers could help increase customers’ trust in and uptake of LEO satellites, and create local jobs for installation and maintenance of necessary hardware,

making these a more sustainable player in the Pacific telecommunications mix.

Risks for local telecommunications providers reselling LEO satellite services include the potential for increased costs being passed on to consumers, making the service unaffordable, and pressure from global providers to bypass local providers and sell directly to consumers, aligning with their streamlined business models. Nonetheless, in Fiji, both Telecom Fiji<sup>13</sup> and Lightspeed Fiji<sup>14</sup> are now authorized resellers of Starlink.<sup>15</sup> Telecom Fiji is authorized to offer residential services. The agreement between Lightspeed Fiji and Starlink will allow the company to promote community Wi-Fi—potentially operated by rural entrepreneurs—opening up rural areas to other forms of digital connectivity and economic opportunity.<sup>16</sup>

Pacific governments also need to consider non-commercial concerns, including cybersecurity, data protection, privacy and digital infrastructure sovereignty. Policies should enforce robust cybersecurity to protect sensitive data and communication networks while ensuring national control over critical digital infrastructure. Active participation in international forums and fostering regional collaboration can strengthen their influence and address shared challenges (Internet Society Foundation, 2023).

Collaboration  
between global  
and local  
providers is key  
to sustainable  
LEO adoption.

<sup>13</sup> Telecom Fiji is fully owned by Amalgamated Telecom Holdings, Fiji’s leading telecommunications holding company, which in turn is partially owned by the Fiji National Provident Fund, a key shareholder in the country’s telecommunications infrastructure. Vodafone Fiji Pte Limited (Vodafone Fiji) is the country’s leading provider of mobile telecommunications services and mobile phone money transfer services, and is owned on a 51:49 per cent basis by Amalgamated Telecom Holdings and the Fiji National Provident Fund respectively.

<sup>14</sup> Lightspeed Fiji is a privately owned Fijian company.

<sup>15</sup> See <https://www.telecom.com.fj/telecom-fiji-knowledge/telecom-fiji-becomes-an-authorized-starlink-reseller/> and <https://lightspeed.com.fj/starlink/>.

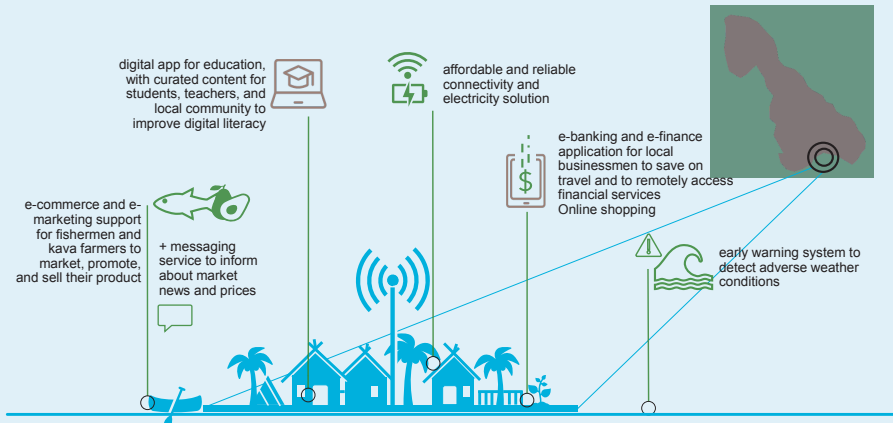
<sup>16</sup> See <https://islandsbusiness.com/news-break/fiji-takes-massive-leap-forward-with-starlink/>.



## Box II.4 The ITU Smart Islands initiative

Launched in 2020, the ITU Smart Islands project adopts an innovative approach to deliver connectivity and scalable and sustainable services to disadvantaged island communities. It adopts a collaboration model that could be scaled up in partnership with multinationals to integrate backbone infrastructure with on-the-ground hardware and services to bring robust Internet to life in Pacific SIDS. It leverages interoperability, multifunctionality and existing ICT infrastructure to provide communities with affordable and sustainable access to digital services.

### SMART ISLANDS: A NEW APPROACH



The initiative is still in its early stages, with consultations, assessments and pilot projects currently under way in Fiji, Samoa, Nauru, Kiribati, Papua New Guinea, Micronesia, Marshall Islands, Solomon Islands, Palau, Tuvalu and Tonga. These efforts are funded through several joint Sustainable Development Goal (SDG) Fund projects.

Source: UNCTAD, based on <https://www.itu.int/en/ITU-D/ICT-Applications/Pages/Initiatives/ASP/Smart-Islands/Smart-Islands-Initiative.aspx>.

### 3. Promoting access to devices

Specific policy measures are being introduced to address the challenges of affordability and access of digital devices. This will help foster inclusivity, encourage innovation and enable digital entrepreneurs to better take advantage of opportunities in the digital economy.

For instance, the *Solomon Islands E-commerce Strategy* (Government of Solomon Islands, 2022) outlines several measures to make digital devices and services more affordable and accessible. A current proposal to reduce or eliminate

taxes on essential digital devices like smartphones and modems for a limited period would make them more affordable. Additionally, alternative financing models that allow consumers to pay for Internet devices in instalments (based on payment behaviour on mobile plans) is being considered. The strategy also plans to incentivize the development of repair shops for digital devices, ensuring device longevity and supporting sustainable practices for electronic waste disposal and recycling.

While access to mobile devices, Internet connections and applications is critical for e-commerce in the Pacific, advanced digital applications (powered by AI, for example)

will increasingly require more sophisticated hardware and software. Device donation and refurbishment programmes could help close the gap in access to desktops, laptops and tablets across Pacific SIDS. Similar schemes already exist in the Pacific to send used medical equipment and supplies to countries like Fiji.

International development organizations could oversee programmes for digital device donations from high-income countries like Australia and New Zealand to Pacific SIDS, brokering partnerships with large businesses and governments that regularly replace their equipment. Such initiatives would also align with the latest UNCTAD's *Digital Economy Report* (UNCTAD, 2024c), which calls for a more circular digital economy, provided that any donations from abroad are of sufficient quality and not simply a way to offload electronic waste.

Programmes such as LiteHaus' refurbished device service in Papua New Guinea help individuals gain access to devices but these programmes typically focus on schools and families rather than businesses.<sup>17</sup> Expanding these efforts to include business owners could scale up the impact. However, challenges remain in purchasing and updating necessary software, which may require further investment. MSME member-based organizations could explore group licences for software, sharing costs among members. Additionally, governments could implement subsidies for MSME organizations to reduce the cost of accessing both devices and software.

\*\*\*

This chapter has reviewed the development of Internet infrastructure in the Pacific. Despite important advancements, Pacific SIDS face persistent challenges such as limited Internet uptake, inadequate capacity and high costs, particularly for

fixed-line services. Geographic dispersion and reliance on single cable connections in some countries also pose risks to the resilience and reliability of connectivity. The high costs and low quality of Internet access hinder businesses through revenue losses (e.g. disruptions in payment processing), operational inefficiencies (e.g. system downtimes) and the need for expensive backup solutions.

LEO satellites present a promising solution to improve connectivity, particularly in remote areas, but high costs and regulatory complexities remain barriers to widespread adoption. PPPs and supportive policies remain crucial for developing robust infrastructure and improving access.

The chapter highlighted the high reliance on smartphones, driven by their lower cost and the availability of mobile networks compared with fixed-line broadband services. While mobile devices support essential digital activities, such as social media marketing and digital payments, they limit the scope for business operations. Many users lack access to devices with sufficient processing power to perform advanced digital tasks, restricting innovation and competitiveness with peers in other regions. As data- and processing-intensive technologies like AI become more prevalent, these limitations will only become more pronounced, further challenging business development in the Pacific.

While advancements in connectivity and access to digital devices are foundational for the digital economy, more action is needed to build resilience and affordability. Chapter III explores how fostering a supportive digital ecosystem by addressing sociocultural barriers, skills gaps and access to finance is essential to empower entrepreneurs and enable sustainable business growth in the global digital economy.

Reducing cost barriers to digital devices can foster inclusivity and drive e-commerce growth.

<sup>17</sup> <https://litehausinternational.org/papua-new-guinea>.



## Chapter II

Enhancing Connectivity for Digital Entrepreneurship and Trade in the Pacific







Chapter III

# **Digital entrepreneurship: Building the foundation for the digital economy**







**Entrepreneurship plays a crucial role in driving economic growth and is essential for sustainable development. It fosters innovation, creates employment opportunities and strengthens economic resilience (United Nations, 2024). Entrepreneur MSMEs make up the majority of businesses in the world and account for a substantial share of employment. They can play an important role in supporting the transition to sustainable business practices and in promoting inclusivity by creating opportunities for marginalized or vulnerable groups.**

**Digitalization can offer entrepreneurs new opportunities to innovate and develop scalable solutions that enhance efficiency, broaden consumer access and facilitate integration into global markets (UNCTAD, 2019, 2021; United Nations, 2024). Digital entrepreneurship involves using digital technologies and platforms to create, innovate and scale businesses, increasing productivity and expanding market access.**

**Building on Chapter II, this chapter explores opportunities for and challenges to digital entrepreneurship in the Pacific. Section A looks at factors shaping digital entrepreneurship, highlighting the role of entrepreneurship ecosystems and key challenges beyond connectivity, such as skills, access to finance, and sociocultural factors. Section B places special emphasis on the potential for women digital entrepreneurs, outlining both the opportunities and barriers involved. Section C provides policy options for strengthening the digital entrepreneurship landscape and concludes the chapter.**

## A. Factors shaping digital entrepreneurship in the Pacific

### 1. The potential of digital entrepreneurship

Digital transformation can offer entrepreneurs opportunities to reshape value chains and contribute to sustainable development by addressing social, economic and environmental challenges (UNCTAD, 2019; United Nations, 2024). Central to this transformation lies digital entrepreneurship, which not only improves the quality

of work and creates employment by formalizing businesses and informal traders (International Labour Organization (ILO), 2019) but also holds the potential to play a role in reducing poverty (UNCTAD, 2010).

The growing adoption of digital tools—such as online payment systems and digital services—can enhance business adaptability to changing market conditions. Higher digital readiness can enable businesses to better withstand disruptions

The growing adoption of digital tools enhances business adaptability, fostering innovation and resilience.



as well as enabling digital entrepreneurship, which promotes inclusivity by allowing underserved communities to engage in the global economy. Additionally, e-commerce platforms play a key role by reducing geographical barriers (UNCTAD, 2019). Technologies such as mobile applications and digital services enable businesses to connect with both local and regional clients. Insights from interviews conducted for this report (see Annex table 1) reveal that these advancements are improving market access and supporting broader economic growth.

For example, Defiant Robotics (see Box III.1) has successfully leveraged digital tools to address these challenges. Moreover, digital tools also provide access to skills

development opportunities and online networks, helping entrepreneurs formalize their businesses and scale operations. A notable example is AgBook in Papua New Guinea (see Box III.2), which supports agricultural entrepreneurs through online networks and training modules.

While digital transformation offers significant opportunities to entrepreneurs and MSMEs, benefits do not come automatically. The following sections look at some of the key factors shaping digital entrepreneurship in the Pacific, such as the enabling ecosystem, fostering digital skills, providing access to financing for digital innovation, and leveraging the unique sociocultural characteristics of the region.



### Box III.1

#### Defiant Software and Defiant Robotics: Digital entrepreneurship in Tonga

Arthur Cocker, a young Tongan entrepreneur, runs two emerging businesses: Defiant Software and Defiant Robotics. The first specializes in creating mobile applications and websites, with a focus on custom mobile app development and the use of generative AI for coding. Notable clients include Bank of South Pacific; the Ministry of Labour, Commerce and Industries; and the Talitha Project. The Talitha Project is an NGO dedicated to empowering young women aged 10–24 through informal education, life skills and development programmes.

Defiant Robotics is dedicated to developing 3D-printed robots for cleaning solar panels, addressing a critical maintenance need while promoting sustainable energy use. Currently in the prototype stage, this venture is awaiting approval from the board of Tonga Power Limited, the country's sole provider of electricity, which manages and regulates energy generation, including solar farms.

Collaboration with educational institutions like the University of the South Pacific and industry associations such as Tonga Women in ICT (TWICT) has helped provide access to skilled interns, future employees and valuable networking opportunities.

The digital nature of Arthur's products allows for easy scalability and access to international markets. Despite being a one-man operation, Arthur has secured significant clients and is continually seeking ways to expand and innovate within the growing digital landscape in Tonga. Recognizing the high potential for digital solutions in sectors like tourism and banking, he envisions expanding locally and potentially across the Pacific region over the next 5–10 years. However, he has identified several challenges that hinder the growth of digital entrepreneurship in Tonga, including lack of awareness, and limited skills and networking opportunities.

*Source:* UNCTAD, based on an interview with Arthur Cocker, founder of Defiant Software and Defiant Robotics (15 June 2024).





## Box III.2

### AgBook: Digital business support for farming in Papua New Guinea

Nicole Isifu is the Managing Director of AgBook, a company providing agribusiness training and advisory services in the Eastern New Britain, Morobe and Sepik provinces of Papua New Guinea. She founded AgBook after noticing that people in her province were not treating farming as a business or recognizing its potential as a steady source of income. Nicole's approach focuses on the entire farming family, providing financial and business literacy, and management skills support to women, men and youth.

AgBook has become a valuable source of business development support for farmers. The training modules—delivered through a hybrid format, combining both in-person and online sessions—are in Tok Pisin and cover topics such as the basics of running a farm as a business, farming for profit, and money management. These are available to registered users for a fee. These users can also book free business planning consultations through the platform and foster peer connections through 'Ideas Challenges', which encourage sharing creative farming ideas with the best cost-benefit outcomes. AgBook uses business analytics and performance dashboards to provide targeted advice to farmers.

Nicole's work through AgBook currently reaches nearly 5,000 people, the majority of whom are women. She is working to expand digital business support for young people and grow the 'AgFutures' online community, which has 1,000 members, mainly youth, through emerging partnerships with local employment agencies like Grassroots Employment Agency.

Source: UNCTAD, based on an interview with Nicole Isifu, Managing Director of AgBook (15 April 2024).

## 2. The entrepreneurship ecosystem

The entrepreneurship ecosystem is generally comprised of an array of stakeholders, institutions and social factors that work in targeted and cohesive partnership to support individuals to navigate through various entrepreneurial stages (Cruz and Zhu, 2023; ILO, 2024). To succeed, entrepreneurs need access to information, advice, peer support, community networks, opportunities for capacity development, pathways to markets, capital or financing, and other relevant resources (Cruz and Zhu, 2023; UNCDF, 2024). These needs vary along the entrepreneurial journey and are influenced by local cultural attitudes and policies (Moana Research, 2020).

Entrepreneurial support organizations (ESOs) often play a role in supporting digital

entrepreneurship during the early stages of ecosystem development or preliminary roll-out phases. However, they frequently lack a clear value proposition or the long-term funding needed to provide sustained resources, guidance and training (UNCDF, 2021a). This challenge is particularly evident in Pacific SIDS, where access to information, market analysis data, and training for digital entrepreneurship remains limited or even non-existent.

While there have been efforts to increase entrepreneurship support, including capacity-building organizations (e.g. Tonga Business Enterprise Centre), incubators and accelerators (e.g. V-Lab in Vanuatu), innovation hubs (e.g. University of South Pacific Innovation Hub), government programmes (e.g. Small and Medium Enterprises Corporation Papua New Guinea), regional organizations (e.g. PIFS E-Biz Plus programme<sup>18</sup> and the eCove Community<sup>19</sup>) and development partners, gaps remain.

<sup>18</sup> <https://pacificcommerce.org/pei-programme/pifs-e-biz-plus/>.

<sup>19</sup> For the community: <https://pacificcommerce.org/ecove-community/>; for the training: <https://pacificcommerce.org/training-2/>.



Many aspiring digital entrepreneurs in the Pacific rely on informal peer networks and peer support.

There is, for example, a noticeable gap in providing sustained training and tailored guidance for digital entrepreneurs. This lack of support is reflected in the limited presence of incubators focused on key areas such as e-commerce, digital product development and digital trade (PIFS, 2021).

In the absence of consistent support, many aspiring digital entrepreneurs in the Pacific have to rely heavily on informal and peer networks for support. These networks often use digital applications like Facebook, WhatsApp and other local messaging platforms. For example, the Fiji Micro Small and Medium Entrepreneurs Community, an informal network with over 250 members, operates on Viber and has coordinated activities such as lobbying against the phasing out of cheques by the Reserve Bank of Fiji (The Fiji Times, 2024).

In the Solomon Islands, the Solomon's Farmer's Corner group on Facebook is an information hub for 10,300 local farmers,<sup>20</sup> providing updates on cropping practices, agricultural news and training opportunities. This group has been particularly valuable for sharing insights on cocoa farming practices from other Pacific countries, including Papua New Guinea. While informal mechanisms foster peer-to-peer connections, they burden entrepreneurs who must actively seek and maintain access to networks and information. This reliance also places an unfair strain on community members, who often sustain these networks without receiving compensation for their efforts.

Digital entrepreneurship largely operates in unregulated spaces, with heavy reliance on social media and informal marketplaces. This lack of structure limits access to formal support and amplifies the challenges entrepreneurs face in scaling their businesses. Establishing a regulated environment can enhance transparency and accountability, building trust among entrepreneurs and consumers while strengthening the entrepreneurial ecosystem. Additionally, supporting MSMEs

through PPPs can help entrepreneurs navigate intellectual property management, e-signatures and consumer protection laws, ensuring compliance with national regulations. (UNCDF, 2021a, 2021b).

Greater emphasis and support are needed to establish country-specific and wider regional partnerships among development agencies, governments and the private sector. Box III.3 highlights the potential for digital entrepreneurship in the Pacific by leveraging tailored support to create innovative solutions.

### 3. Digital literacy and skills

Digital entrepreneurship requires a dynamic and diverse skill set. It not only involves core entrepreneurial knowledge, such as business management and strategy, but also deep understanding of digital technologies. These skills range from operational capabilities, like effectively utilizing digital tools, to advanced analytical skills such as data collection and interpretation. Together, these competencies enable entrepreneurs to manage, grow and scale digital enterprises in a constantly evolving digital landscape (ITU, 2018). In Fiji, one of the digitally more advanced Pacific SIDS, only 32 per cent of individuals were found to have basic ICT skills (performed one task), 18 per cent had proficient ICT skills, and 4.4 per cent had completed an advanced ICT task (i.e. having written a computer programme), with more highly educated individuals tending to be further ahead compared with less educated individuals in achieving ICT tasks (Woser, 2023).

Additionally, digital entrepreneurs must be proficient in accessing, understanding and communicating information online, whether through social media or digital forums (Broadband Commission for Sustainable Development, 2018). The use of digital software, including financial systems and online platforms, can further support essential business processes (ADB, 2022).

<sup>20</sup> See <https://www.facebook.com/groups/SOLOMONSFARMERSCORNER/members/>.





### Box III.3

#### SkyEye Pacific: Navigating Pacific digital entrepreneurship support organizations

SkyEye Pacific co-founder and Chief Executive Officer (CEO) Fa'aso'otauloa Sam Saili, from Samoa, provides a compelling example of navigating the digital entrepreneurship ecosystem while addressing unique business needs in the region. In 2018, he participated in the Scaling Frontier Innovation programme delivered by the Australian Government's Department of Foreign Affairs and Trade. As one of 15 successful applicants, and one of four from the Pacific (including representatives from Samoa, Tonga and Vanuatu), Fa'aso'otauloa Sam benefited from tailored training and support aimed at accelerating his company's development impact.

Through the programme, he received funding and participated in a detailed needs and capabilities assessment, market-readiness evaluation, creation of support plans, and identification of pathways for further capital raising or investment. He was also connected with local entrepreneurship ecosystem organizations, such as the Samoa Business Hub. Despite the support, Fa'aso'otauloa Sam noted a lack of tailored advice on designing, planning and achieving sustained success as a digital business in the Pacific.

Among the many hurdles faced when planning for growth as a digital business were a scarcity of detailed and current market data, insufficient access to reliable financial and technical support, and the unavailability in Pacific countries of e-commerce tools and platforms, such as PayPal, Shopify and Stripe. Additionally, the limited functionality of Google Maps, due to the absence of official street addressing systems, further complicated operations.

Recognizing that some of these gaps could be turned into business opportunities, SkyEye Pacific developed its own solution with the Ala addressing system (platform), which provides detailed navigation and location information, now a valuable tool for its clients and customers. Additionally, SkyEye launched the Maua application, the first e-commerce platform in Samoa, connecting local artisans, market vendors, utility services, supermarkets and restaurants with consumers both domestically and internationally.

Through these innovations, SkyEye Pacific has not only addressed specific regional challenges but it also exemplifies how digital entrepreneurship can thrive in the Pacific by developing tailored solutions to meet local needs.

*Source:* UNCTAD, based on an interview with Fa'aso'otauloa Sam Saili, co-founder and CEO of SkyEye Pacific (11 June 2024).

Promoting technical skills in information technology, software and web development will enhance the region's readiness for growth in the digital economy, including e-commerce and app development (ILO, 2021b, 2019; USAID, 2024). As higher education is strongly linked to ICT skill levels, countries should prioritize expanding access to higher education as a foundational step towards building a digitally skilled workforce (Woser, 2023). However, extending education can be costly, making lifelong learning initiatives important to complement

formal education and address knowledge gaps throughout individuals' careers.

Advanced data-dependent systems like AI, machine learning and automation are emerging globally. Strengthening data and digital financial literacy is essential to foster efficient economic practices in this evolving landscape (ILO, 2019). This also includes skills needed to understand data privacy, security and the protection rights essential for digital transitions (Pacific Data Hub, 2022).

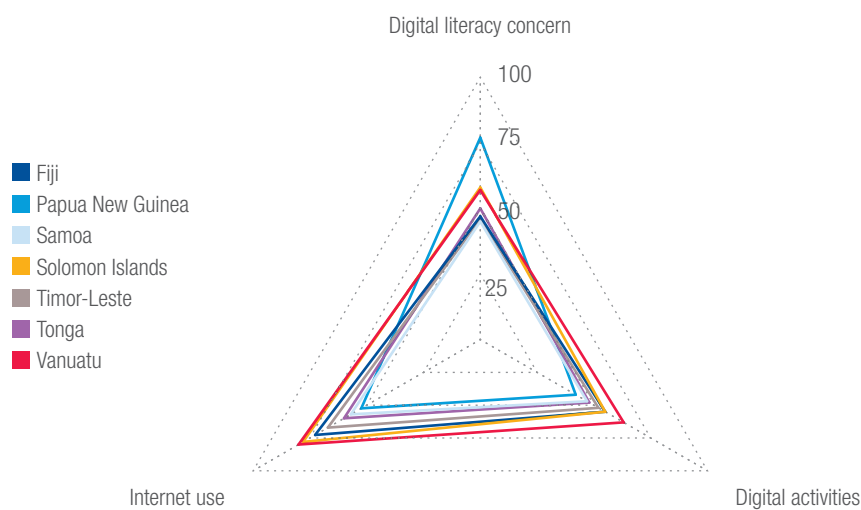


Recent UNCDF Digital and Financial Literacy Surveys indicate a discrepancy between general Internet use as seen in chapter II and engagement in other digital activities in some countries (see Figure III.1).<sup>21</sup> Digital engagement in selected Pacific SIDS is low to moderate, with many feeling left behind by technology,

particularly in Papua New Guinea, which has the lowest digital activity rate and the highest concerns about digital literacy. This gap between access and adaptation underscores the need for comprehensive and ongoing digital literacy programmes to equip individuals with skills and confidence.



**Figure III.1**  
**Digital activities and literacy concerns, selected Pacific SIDS, 2022**  
(Per cent of population)



Source: UNCTAD, based on UNCDF (2023a–g).  
Notes: Digital activities refer to the response indicating the creation, editing or saving of a document or image. Concerns about digital literacy are based on the agreed response: 'I feel like technology is leaving me behind'.

A lack of entrepreneurial knowledge and business skills limits Pacific businesses' ability to transition to digital operations.

Increasing financial literacy is also essential for leveraging digital resources like mobile money wallets and digital payment systems to address financial and economic exclusion and grow a country's digital economy. In Tonga, despite government and private-sector initiatives to create local e-commerce platforms, moderate to low financial literacy levels have hindered their adoption (UNCDF, 2023h). This is, for instance, reflected in the limited use of non-cash payment services; only about 30 per cent of Tongans have any type of payment card (UNCDF, 2023f). Similarly, Timor-Leste remains predominantly cash-based, even

for services like utilities that could support digital payments (UNCDF, 2023e).

A lack of entrepreneurial knowledge and business skills limits Pacific businesses' ability to transition to digital operations. Key skills include identifying market gaps, leveraging growth opportunities, managing logistics, and collaborating with suppliers and distributors. For digital platforms like online labour markets, managerial skills, vetting processes and maintaining digital relationships are essential. Soft skills such as communication, initiative, resilience and autonomy are equally critical for success.

<sup>21</sup> The data for Internet use in chapter II are sourced from ITU statistics. Separate statistics from UNCDF indicate that for all seven surveyed Pacific SIDS, more individuals have access to Internet compared to those performing basic ICT-related digital tasks (see Figure III.1).



With digital entrepreneurship still in its early stages in the Pacific, there is an absence of experienced digital entrepreneurs with the skills who can serve as role models and pass on their knowledge to emerging businesses. This may slow the spread of critical entrepreneurial knowledge, making it harder for new ventures to gain momentum (UNCTAD, 2019).

#### 4. Access to finance

Securing funding is a major challenge for digital entrepreneurs in the Pacific, whose financing needs differ from those of traditional businesses. Without tangible assets, they struggle to meet collateral requirements, and financial institutions often view them as high-risk due to limited collateral, revenue streams or credit histories. This challenge is heightened by the risk-averse nature of financial institutions in the region (UNCDF, 2021a; ADB, 2023).

In addition, Pacific entrepreneurs face major barriers in securing capital to start or scale digital ventures, often relying on personal savings, family networks or remittances. The need for rapid scaling adds to funding challenges, while financial regulations in the region exclude customary land as collateral. High financial service costs and a lack of tailored financial products further stifle innovation and slow the growth of the digital economy (Scheyvens et al., 2020).

The development of the financial sector and banking penetration across Pacific Islands varies significantly. Fiji, one of the region's most developed economies, has a relatively robust financial sector with commercial banks, insurance providers and credit institutions, and is home to one of the Pacific's two stock exchanges (Zhou et al., 2024). Samoa has over 30 financial and payment enterprises, including both locally owned and foreign-owned banks and non-bank financial institutions. In contrast, Kiribati has fewer than five financial entities

offering banking, credit, loan and insurance services (ADB, 2019; Zhou et al., 2024).

In terms of penetration, the number of bank branches per 100,000 adults remains low in some Pacific SIDS (see Figure III.2). For example, in Timor-Leste, Solomon Islands and Papua New Guinea, banking penetration is well below the global average. In contrast, high rates in some Pacific SIDS reflect their small populations. Unlike developed countries, where online banking dominates, banking in Pacific SIDS still relies heavily on physical branches (Zhou et al., 2024). In Fiji, which has the region's most developed financial sector, the penetration of bank branches reflects global and middle- and low-income countries' averages but is below the high-income countries.

Limited competition in the financial sector restricts access to diverse and affordable services in the Pacific. Non-bank payment service providers, emerging in places like Samoa, show potential to increase competition in remittances (see Table III.1) but alternative funding remains scarce. Without key non-bank financial institutions like venture capital or angel investors, digital entrepreneurs rely heavily on traditional funding (UNCDF, 2021a; Pacific Private Sector Development Initiative (PSDI), 2024a).

The high costs of financial services, coupled with a lack of tailored financial products for digital enterprises, further stifle innovation and slow the growth of the digital economy. This challenge is compounded by the overall high cost of doing business in the Pacific. For example, starting a business in the Solomon Islands, Kiribati and Vanuatu still costs between one-third and nearly half of per capita income, while in the Federated States of Micronesia, it costs nearly 1.5 times the annual income (see Figure III.3). Reducing these start-up costs would not only make business creation more accessible but also lower the financial risk of new ventures failing.

The high cost of financial services and lack of tailored products hinder digital economy growth.

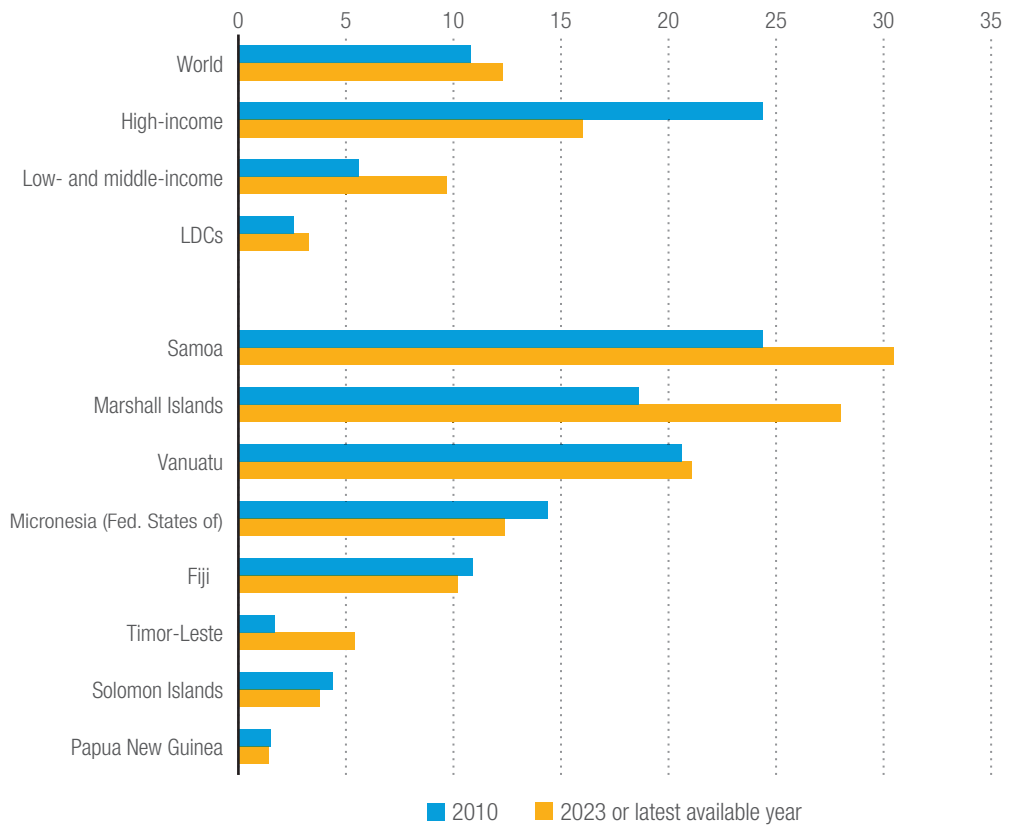




**Figure III.2**

**Commercial bank branches, selected country groupings, Pacific SIDS, and years**

(Per 100,000 adults)



Source: UNCTAD, based on World Development Indicators, available at <https://databank.worldbank.org/source/world-development-indicators#> (accessed 30 October 2024).

Notes: 2023 data concern all country groupings (except LDCs), Marshall Islands, Federated States of Micronesia, Samoa, Solomon Islands and Timor-Leste. 2022 data concern LDCs, Fiji and Papua New Guinea. 2021 data concern Vanuatu.

As a result of the high cost and the obstacles to access finance, local entrepreneurship support organizations like incubators and business hubs have an important role to play in financing by providing grants, small loans and microfinancing to emerging entrepreneurs (UNCTDF, 2024). However, these organizations typically rely on funding from development partners or donors, offering no long-term support for the entire entrepreneurial journey (UNCTDF, 2021a).

The Pacific Green Entrepreneurs Network offers seed funding and repayable grants or loans in several Pacific countries, though it is currently funded by the Qatar Fund for Development for only three years. Other initiatives, such as the UNCDF Innovation Challenge and PIFS E-Biz Plus, also provide grants. However, the ecosystem's over-reliance on short-term grants significantly limits financial resources, forcing digital entrepreneurs to compete with other MSMEs for limited funding (UNCTDF, 2024).







Table III.1

## Financial and payment institutions, selected Pacific SIDS

	Banks	Non-bank providers
<b>Fiji</b>	Six banks (ANZ, Bank of Baroda, Bank of South Pacific, BRED Bank, HFC Bank, Westpac)	Two non-bank payment service providers (Digicel MyCash (e-wallets) and Vodafone Fiji's M-PAiSA)
<b>Kiribati</b>	One commercial bank (ANZ)	
<b>Marshall Islands</b>	Two banks (Bank of Guam, Bank of Marshall Islands)	Two remittance providers (MoneyGram, Western Union)
<b>Micronesia (Fed. States of)</b>	Two banks (Bank of Guam, Bank of the Federated States of Micronesia)	At least two non-bank payment service providers (MoneyGram, Western Union)
<b>Nauru</b>	One commercial bank (Bendigo Bank)	
<b>Palau</b>	Five banks (Asia Pacific Commercial Bank, Bank of Guam, Bank of Hawaii, BankPacific, Palau Investment Bank Ltd)	
<b>Papua New Guinea</b>	Four banks (ANZ, Bank of South Pacific, Kina Bank, Westpac)	
<b>Samoa</b>	Four banks licensed (ANZ, Bank of South Pacific, National Bank of Samoa, Samoa Commercial Bank)	11 money transfer operators for remittances (Digicel Samoa Financial Services, FEXCO, Frankie Money Transfer, IMEX, Ink Patch Money Transfer, KlickEx, Pacific Ezy Money, Pacific Way, Samoa Money Transfer, Vodafone Samoa M-Tala, Western Union)
<b>Solomon Islands</b>	Four banks (ANZ, Bank of South Pacific, BRED Bank, Pan Oceanic Bank)	One mobile wallet (EziPei)
<b>Tonga</b>	Four banks (ANZ, Bank of South Pacific Tonga, MBF Bank, Tonga Development Bank)	Some financial institutions are licensed for inward and outward remittances
<b>Tuvalu</b>	Two banks (Development Bank of Tuvalu, National Bank of Tuvalu)	
<b>Vanuatu</b>	Five banks (ANZ, Bank of South Pacific, BRED Bank, National Bank of Vanuatu, Wanfuteng Bank)	Three non-bank payment service providers (e-wallets services) (IsiMoney, M-Vatu payments, MyCash)

Source: UNCTAD, based on Zhou et al. (2024).

In addition to start-up capital, access to bank accounts and digital payment solutions, such as mobile money services and payment gateways, is crucial for digital entrepreneurs, as it enables efficient financial transactions and broader market participation (Klapper, 2017). Digital payment solutions in most Pacific SIDS remain nascent (see Figure III.4), with digital wallets lagging behind bank

accounts. However, digital financial services are gradually expanding, with digital wallets now available in nine countries through providers like Digicel and Vodafone. Fiji shows higher adoption rates for both digital wallets and bank accounts, while Timor-Leste favours digital wallets over traditional banking, reflecting a shift towards digital solutions in areas with limited banking access.

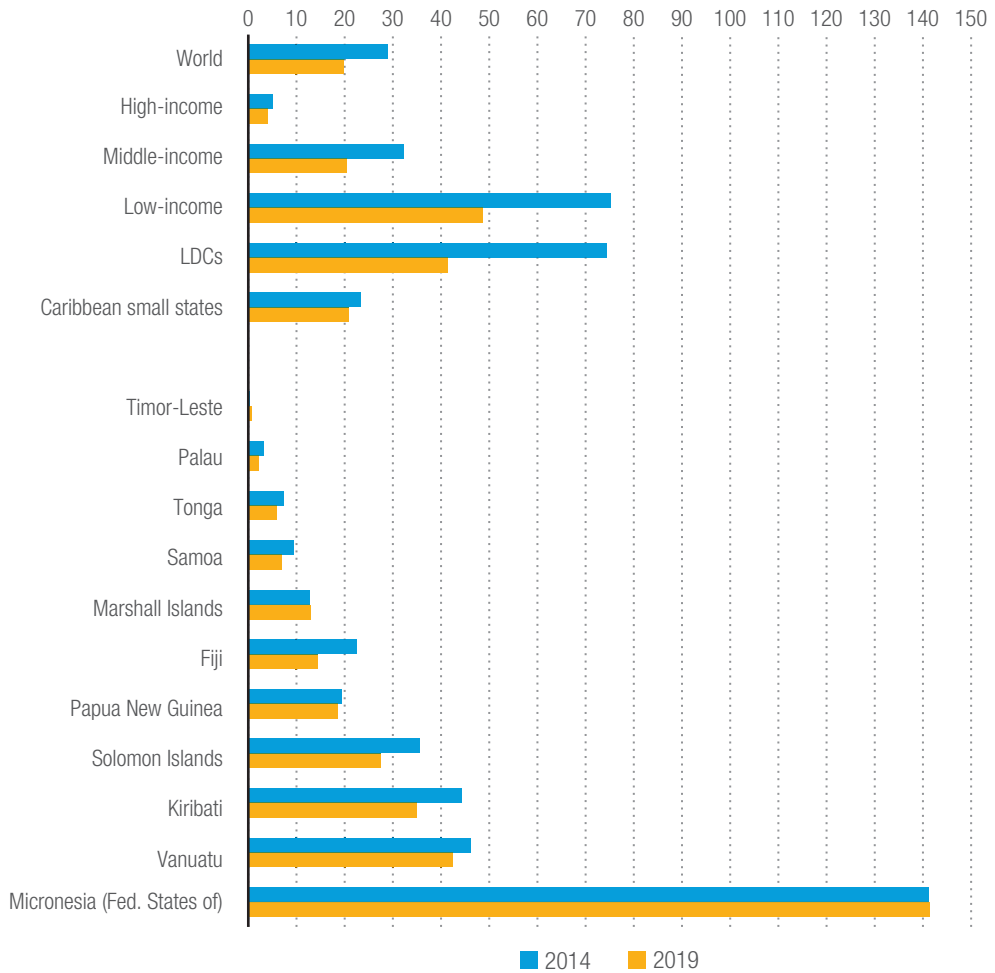




**Figure III.3**

**Cost of business start-up procedures, selected country groupings and Pacific SIDS, 2014 and 2019**

(Per cent of GNI per capita)



Source: UNCTAD, based on World Bank, World Development Indicators, available at <https://databank.worldbank.org/source/world-development-indicators#> (accessed 30 October 2024).

Notes: The cost of registering a business, measured as a per centage of GNI per capita, reflects the procedures, time, cost and minimum capital required to formally establish a small or medium-sized limited liability company. In all Pacific SIDS with available data, registration costs were the same for men and women. The latest data, from 2019, follows the source's classification of country groupings.

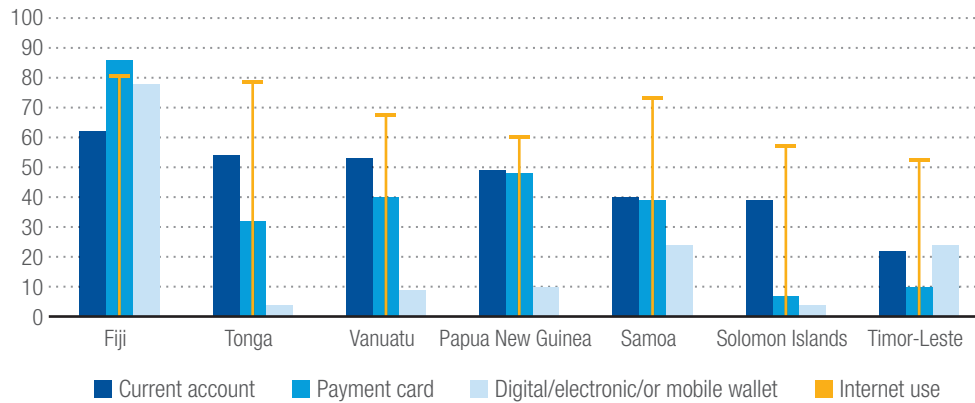
This trend underscores the potential of digital payments to boost financial inclusion, supported by the region's moderate to high Internet use. Central banks, like the Reserve Bank of Tonga, are embracing digital technologies, enabling non-bank e-money institutions to provide wallet services (UNCDF, 2023h). Additionally, Fiji and Papua New Guinea are collaborating with regional technical assistance facilities to establish regulations for alternative

financing mechanisms, like crowdfunding and peer-to-peer funding (ADB, 2023).

Despite this progress, international payment gateways—platforms that allow businesses to process online payments from customers using various methods such as credit cards, digital wallets and bank transfers—still pose significant challenges for digital enterprises and online transactions in the Pacific (Katakam, 2023; see also chapter IV).



**Figure III.4**  
**Current account ownership and digital payment solutions, selected Pacific SIDS, 2022**  
(Per cent of population)



Source: UNCTAD, based on UNCTAD, based on UNCDF (2023a–g).

Notes: Electronic payment cards can include public transport or debit cards. Internet use data in this figure are from UNCDF surveys and may differ from the data presented in chapter II (ITU statistics).

## 5. Sociocultural factors

Social and cultural factors play an important role in shaping digital entrepreneurship in the region, influencing attitudes, beliefs and societal norms around business. In SIDS, these dynamics present unique challenges, such as negative perceptions of entrepreneurship, traditional gender roles restricting participation, and strong family and community expectations. Rural entrepreneurs face additional barriers, including limited access to resources. Aligning digital business models with Pacific cultural values and providing inclusive support for vulnerable groups is essential to addressing these challenges.

Building on this, strengthening entrepreneurship through digitalization must also tackle broader economic and societal barriers. Pacific cultural knowledge, values and practices not only shape daily interactions but also influence aspirations

for prosperity and development (PIFS, 2017). Historically seen as barriers to economic development (Scheyvens et al., 2020), these cultural elements are now recognized as potentially critical assets for enhancing entrepreneurial activity (Curry et al., 2012; Moana Research, 2020).

For example, in Fiji, the *solesolevaki* concept has been effective in pooling resources, skills and labour to support entrepreneurial initiatives and sustain communal economic growth (Steven and Vunibola, 2021).<sup>22</sup> Similarly, customary practices in various Melanesian countries, such as Vanuatu and Solomon Islands, reflect traditional communal decision-making processes and resource management approaches that emphasize community consensus and cultural practices.

The potential for digital entrepreneurship is closely tied to maintaining Pacific sociocultural values within the digital economy. Developing business models

<sup>22</sup> The concept of *solesolevaki* is a traditional Fijian practice that emphasizes communal labour and collaboration for the common good. It involves communities working together to achieve shared goals, often related to agricultural activities, land management and other community projects. This collective effort not only enhances productivity and efficiency but also strengthens social bonds, mutual support and the overall well-being of the community (Steven and Vunibola, 2021).

Developing business models that align with Pacific cultural values can help to enhance the feasibility and sustainability of businesses.

that align with such values can help enhance the feasibility and sustainability of businesses, promoting long-term economic success (Moana Research, 2020).

For example, in Samoa, the partnership between Women in Business Development Inc. and SkyEye Pacific (see Box III.3) is empowering rural economies by supporting weavers, farmers and small businesses, particularly those led by rural women. Through the Maua app, a virtual platform, Women in Business Development Inc. members gain greater access to marketplaces to sell their goods online. This partnership blends Pacific traditions and values, such as family focus and shared benefits, with digital applications like e-commerce. This approach allows them to use their cultural identity as a competitive advantage in the global digital economy.

Many in the Pacific workforce are engaged in informal sector work, which often lacks protections for safe and stable employment. Before COVID-19, informal employment accounted for 60–80 per cent of the labour force, including 66 per cent in Fiji, 67 per cent in Vanuatu, and 75 per cent in Tonga (ILO, 2021b). This reliance on informal work shapes attitudes towards entrepreneurship, which is frequently seen as a fallback option or a ‘side hustle’ rather than a viable career path (UNCDF, 2021a).

Digital technologies, including gig economy platforms, reflect and sometimes exacerbate

these challenges. Entrepreneurs using these platforms often face risks like unstable wages and limited access to social protection (ILO, 2023). However, digitalization also offers potential benefits by increasing the visibility of skilled informal workers, creating opportunities to transition into the formal economy and shifting societal attitudes towards entrepreneurship.

Pacific digital entrepreneurs are leveraging opportunities through social media platforms, using buy-and-sell groups such as ‘Buy and Sell Kiribati’ (36,000 members), ‘Papua New Guinea Local Market’ (54,000 members) and ‘Samoa Buy and Sell Online’ (82,000 members) to cater to domestic needs. With limited access to large-scale global platforms like Alibaba and Amazon (see chapter IV), these localized platforms cater to self-sustaining economies and hold potential for regional expansion if key barriers such as poor trade logistics, supply inconsistencies and lack of payment gateways are addressed (see also chapter IV).

Building on this trend, Pacific Trade Invest Australia has supported entrepreneurs in expanding their reach via social media. Since 2019, it has conducted media masterclasses to enhance skills in using platforms like Facebook and Instagram. Its Digital Services Programme, now in its second year, trains freelancers on Upwork and provides tools like 12 months of sponsored Canva access.

## B. Promoting women’s digital entrepreneurship

This section explores the emerging role of women as digital entrepreneurs across the Pacific, examining how they are navigating and leveraging digital tools and platforms to establish and grow businesses. In doing so, it highlights key modes of digital business that are

working for women business leaders in the region. Within the broader context of more top-down, mainstream digital development and platforms, the section also identifies specific barriers that Pacific women face, providing insights into how these challenges are being addressed.



## 1. Digitalization, women and business

Expanding women's access to the digital economy can play a crucial role in closing the gender gap. This can also drive progress on SDG targets such as promoting equity, fostering inclusive growth and strengthening community resilience and societal development (UNESCAP, 2023, 2024). However, women are underrepresented in the fastest-growing sectors like ICT, where investor activity and returns on investment are high (Global Entrepreneurship Monitor, 2022). In line with global trends, Pacific women's participation in digital entrepreneurship is hindered by barriers to accessing finance, technology and entrepreneurial training. Digital technologies enable women to move beyond the limitations of the informal sector, rural areas and reliance on microloans (UNCTAD, 2019).

Consistently in the Pacific, labour-force participation rates are lower for women than men, with the widest gaps observed in Fiji, Samoa, Tonga and Vanuatu (see Figure III.5). Closing such gaps in the Pacific could, according to some estimates, increase GDP per capita by an average of 22 per cent in the long run (Pennings, 2022). Digital platforms, such as e-commerce marketplaces and mobile payment systems, are enabling women to overcome geographic, financial and educational barriers that have traditionally restricted their participation in the workforce. By fostering digital entrepreneurship, Pacific women are tapping into new market opportunities and moving beyond the limitations of subsistence-level work.

Despite structural transformations in the region, women remain over-represented in some domestic and market services sectors such as retail, tourism, accommodation, food services, education, health and social work (ILO and ADB, 2023) Post-COVID-19,

more women have transitioned to informal employment, especially in Kiribati, Papua New Guinea and the Solomon Islands (UN Women, 2022c). While domestic services sectors are globally poised for digital transformation, attention must be given to how informality affects women's employment and economic empowerment opportunities in the Pacific context.

Digital entrepreneurship may help some Pacific women overcome barriers to inclusion, not only in the digital economy but also in the broader global economy. For instance, as in other regions, women in the Pacific are disproportionately involved in unpaid care duties and domestic work, such as caring for children and family members, which often deters them from fully engaging in the labour market (Boccuzzi, 2021; UN Women, 2022a; ILO and ADB, 2023). The flexibility of digital entrepreneurship may allow women to navigate the 'motherhood employment penalty' (ILO, 2021a). Work on digital platforms can allow Pacific women to monetize activities like offering virtual language or cooking classes and selling artisan products, matching their time capacity for additional labour and aligning with their other responsibilities (Digital Future Society, 2024). Female labour-force participation, more so than male, is significantly impacted by the presence of young children. For instance, globally, approximately 25 per cent of women working on digital platforms (GLOW, Workana, You Do) have children under the age of six (Hernando and Calizo, 2024). At the same time, caution is necessary when designing interventions to support Pacific women's digital entrepreneurship, especially regarding gig work on online platforms. Various studies have pointed to the risk of exacerbating existing issues such as partner violence when working from home (ADB, 2023), labour exploitation, harassment, unpaid work, and safety and privacy issues (Digital Future Society, 2024).

Digital transformation must address informality's impact on women's economic empowerment in the Pacific.

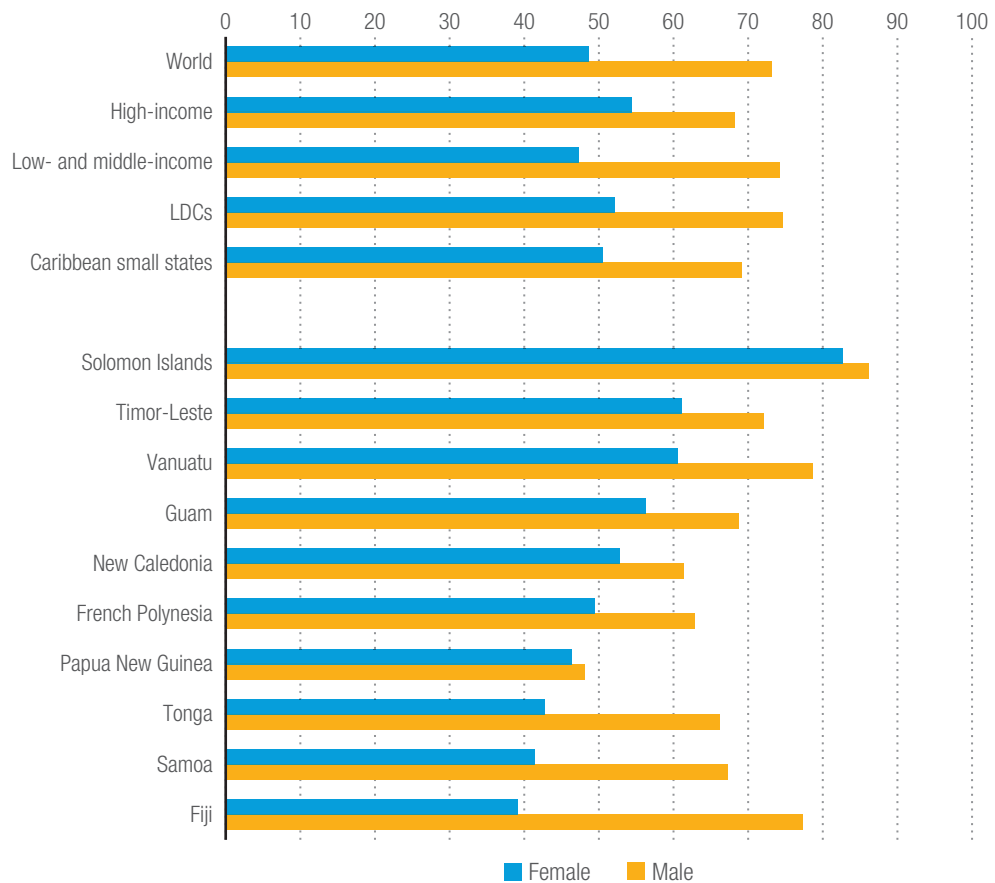




**Figure III.5**

**Labour-force participation rates, by sex, selected country groupings and Pacific SIDS, 2023**

(Per cent of population aged 15+)



Source: UNCTAD, based on World Bank Gender Data Portal, available at <https://genderdata.worldbank.org/en/economies> (accessed 30 October 2024).

Note: Country groupings are of those of the source.

To raise female labour-force participation, additional policy and societal efforts are needed to reduce women’s unpaid care work for children and the elderly. These interventions could also help shift cultural attitudes about gender roles, further supporting women’s greater participation in the workforce (Australian Department of Foreign Affairs and Trade, 2017; ILO, 2021a). Fostering women’s digital entrepreneurship can also be a way to elevate the profile of women in business, enhance gender diversity in the business community, expand decision-making opportunities and incorporate diverse voices, skills and leadership styles, which can enrich consumer experiences (PSDI, 2021).

To support women in the Pacific as digital entrepreneurs and business owners, better access to mentors and role models across various sectors and business models, also beyond the digital economy, is crucial. In this context, the region performs positively compared with global averages, despite men having the majority of leadership roles (PSDI, 2021). According to results from a survey of 274 businesses, women held 20 per cent of board seats, 11 per cent of board chair positions and 13 per cent of CEO positions, compared to 17 per cent of board seats, 5 per cent of chair positions and only 4 per cent of CEO positions globally. Although some Pacific countries have made progress in women’s representation



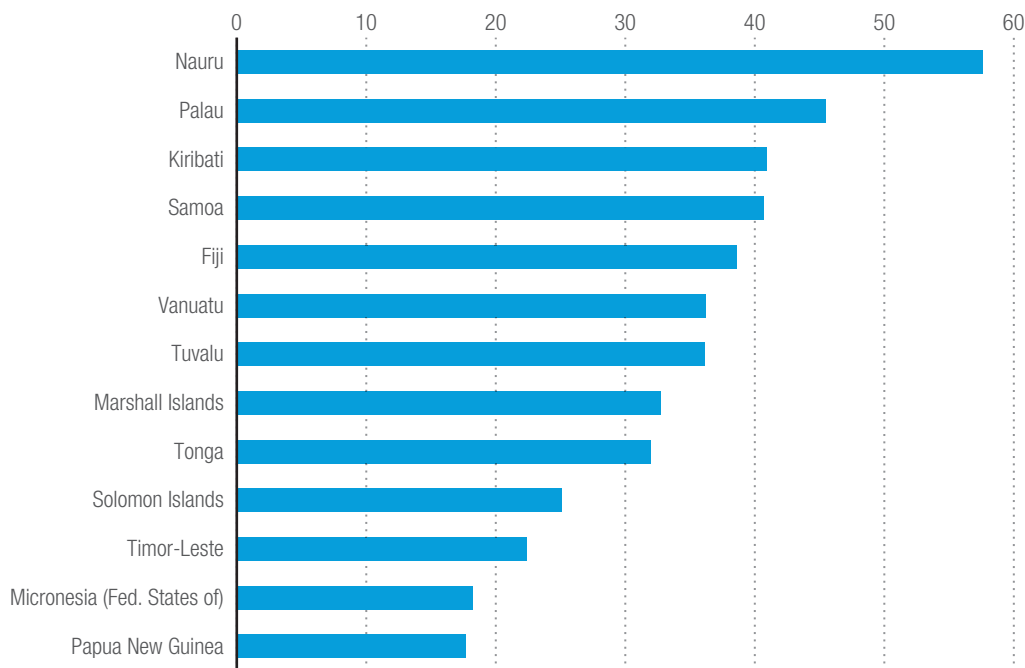
in business leadership roles, there is significant variation across the region. For example, in Nauru, women hold 58 per cent of senior and middle management roles, among the highest globally (see Figure III.6).

However, female representation remains low in many other Pacific countries. In Papua New Guinea, for instance, only 18 per cent of leadership roles are held by women, one of the lowest rates worldwide.

**Figure III.6**

**Female share in senior and middle management employment, selected Pacific SIDS, 2022 or latest available year**

(Per cent)



Source: UNCTAD, based on World Bank Gender Data Portal, available at <https://genderdata.worldbank.org/en/indicator/si-emp-smgt-fe-zs> (accessed 30 October 2024).

Notes: The latest available data cover the following years and countries: 2022 (Papua New Guinea, Samoa, Timor-Leste, Tuvalu), 2021 (Marshall Islands, Nauru, Tonga), 2020 (Kiribati, Palau, Vanuatu), 2016 (Fiji), 2014 (Federated States of Micronesia) and 2013 (Solomon Islands). Aggregate data for country groupings are not provided by the source. The data pertain to senior and middle managers in the public and private sectors, classified under ISCO-08 (Managers) and ISCO-88 (legislators, senior officials and managers), excluding category 14 in ISCO-08 (hospitality, retail and other services managers) and category 13 in ISCO-88 (general managers), which primarily represent managers of small enterprises.

**2. Entrepreneurial divides**

**Women entrepreneurship ecosystem**

Women entrepreneurs in the Pacific often have limited access to ecosystems, mentorship and networks that can provide them with the support, tools and entrepreneurial skills necessary to establish and sustain a business. In some Pacific

countries, entrepreneurial ecosystems for women are completely absent or lack the specific infrastructure necessary to provide targeted support to women entrepreneurs in the long term (Boccuzzi, 2021; ADB, 2023; PSDI, 2024a). Complementing these findings, a UNCDF study (2021a) revealed that although women microentrepreneurs initially may receive some support, this assistance often diminishes as they formalize their businesses and attempt to scale.



Women-owned MSMEs are more likely to primarily employ women.

However, the study also highlighted a positive trend: various women's associations across the Pacific are emerging as ecosystem leaders. These associations actively provide services within the broader entrepreneurial ecosystem and have significant potential to support women entrepreneurs in expanding their businesses. Women-led small and medium-sized enterprises (SMEs) are 14 per cent more likely than men-led SMEs to offer position-related training for their employees (Hooton, 2022). Additionally, women-owned MSMEs are more likely to primarily employ women (Boccuzzi, 2021). In the Pacific digital entrepreneurship context, this could involve women entrepreneurs equipping female employees with digital

or financial skills through internal on-the-job training or, as highlighted in Box III.4, collaborating with local women-led organizations or training providers.

Several formal business accelerators and incubators in the Pacific prioritize women's inclusion in the business sector, such as Sista hub in Vanuatu, the Solomon Islands Women in Business Association, the Women Entrepreneurs Business Council in Fiji, and Women in Business Development Inc. in Samoa. However, these networks often face constraints, including limited or short-term funding and narrow mandates. Their support is typically focused on specific initiatives, such as financial training or sector-based assistance delivered through one-off programmes (ADB, 2023).



#### Box III.4

#### TWICT: Advancing gender equality in Tonga's ICT sector

Seluvaia Kauvaka is a seasoned professional with 15 years of experience in the Information Technology / Intellectual Property / ICT Department, currently serving as the President of TWICT, an NGO dedicated to fostering gender equality and empowerment within the Tongan ICT industry. In addition to this role, Seluvaia is also a civil servant, holding the position of Project Coordinator at the Ministry of Education and Training.

As the driving force behind TWICT, Seluvaia is committed to advancing the presence and influence of women in the ICT sector. Through TWICT initiatives, she aims to break down barriers to career growth for women, promote inclusive training opportunities and establish vital connections between aspiring female professionals with national and international institutions such as the United Nations Educational, Scientific and Cultural Organization (UNESCO), UNDP, the Australian Government's Department of Foreign Affairs and Trade, Commonwealth of Learning, the United States Embassy, USAID and many more.

Seluvaia's vision for TWICT revolves around creating a more diverse and inclusive ICT landscape in Tonga. By advocating for women's participation in decision-making processes and raising awareness of TWICT's objectives and initiatives, she strives to catalyse positive change within a male-dominated industry. For example, in March 2024, TWICT conducted a national ICT Exhibition for Tonga that was launched by the Prime Minister of Tonga. In April 2024, a Science, Technology, Engineering, the Arts and Mathematics Camp was conducted for 180 girls aged 11–16.

With her extensive experience and unwavering dedication to gender equality and empowerment, Seluvaia emerges as a key figure in driving the growth and diversity of the Tongan ICT sector.

*Source:* UNCTAD, based on an email-based interview with Seluvaia Kauvaka, President of TWICT (27 April 2024).





### The regulatory environment

Digital entrepreneurship requires digital market regulations that encourage the adoption of digital business models that support scaling and equitable competition. However, current business regulations in the Pacific, both in terms of economic and legal policies, are largely not conducive to supporting women's inclusion as business owners and entrepreneurs within existing labour markets.

According to the World Bank (2024a), globally, only 44 per cent of the necessary legal provisions to support women's entrepreneurship are in place.

These provisions include laws regulating a woman's agency and freedom of movement, equitable ownership (and inheritance) of property (particularly land) and other immovable assets, as well as protections against discrimination in the workplace and rights to equal remuneration for work of equal value. Overall, Pacific SIDS scored poorly across most indicators, with Fiji and Timor-Leste being notable exceptions. Where data are available, the scores vary widely, reflecting the diverse conditions across the region. Although many Pacific countries continue to rank low on these indicators (see Table III.2), important progress is being made.



**Table III.2**

**Women, Business and the Law Index scores, by indicator, selected country groupings and Pacific SIDS, Australia and New Zealand, 2024**

Economy	Assets	Entrepreneurship	Parenthood	Pay	Workplace
<b>High income</b>	91.5	92.4	77.3	83.5	88.6
<b>Upper middle income</b>	86.7	83.3	57.6	73.0	79.9
<b>Lower middle income</b>	71.1	84.3	43.0	63.0	79.2
<b>Low income</b>	68.0	78.0	45.6	59.0	77.0
<b>Australia</b>	100.0	100.0	100.0	100.0	100.0
<b>New Zealand</b>	100.0	100.0	80.0	100.0	100.0
<b>Fiji</b>	100.0	75.0	60.0	50.0	100.0
<b>Kiribati</b>	40.0	75.0	20.0	100.0	100.0
<b>Marshall Islands</b>	0.0	100.0	0.0	100.0	50.0
<b>Micronesia (Fed. States of)</b>	40.0	75.0	0.0	75.0	25.0
<b>Palau</b>	0.0	75.0	0.0	75.0	25.0
<b>Papua New Guinea</b>	80.0	75.0	0.0	25.0	50.0
<b>Samoa</b>	60.0	75.0	40.0	75.0	100.0
<b>Solomon Islands</b>	80.0	75.0	0.0	25.0	25.0
<b>Timor-Leste</b>	100.0	75.0	60.0	100.0	75.0
<b>Tonga</b>	20.0	75.0	0.0	75.0	25.0
<b>Vanuatu</b>	40.0	100.0	0.0	50.0	25.0

Source: UNCTAD, based on selected indicator scores outlined in World Bank (2024a).

Notes: Data is unavailable for Cook Islands, French Polynesia, Nauru, Niue and Tuvalu. The Assets indicator assesses gender differences in property and inheritance laws, including customary law and judicial precedent. The Entrepreneurship indicator evaluates constraints on women starting and running businesses. The Parenthood indicator focuses on laws impacting women's work during and after pregnancy. The Pay indicator measures legal factors affecting occupational segregation and wage gaps. The Workplace indicator examines laws influencing women's ability to enter the labour market, their legal capacity to work, and protections against discrimination and harassment. Values closer to 100 signify stronger legal and economic frameworks supporting these indicators in the specified economy.



Digital gig platforms offer women opportunities but must tackle low wages, overwork and limited labour protections.

Pacific labour-market regulations limit women's digital entrepreneurship, especially in the informal economy and sectors like care, subsistence and domestic services. Constraints include inadequate employment protection, inflexible work arrangements and a lack of legal frameworks supporting entrepreneurial activities. However, digital platforms for gig work offer women new opportunities to overcome barriers by providing flexible, accessible ways to engage in entrepreneurship and bypass regulatory challenges. In sectors with limited formal employment, these platforms enable alternative business models and income streams.

For instance, in the care sector, digital marketplaces can streamline worker recruitment, match jobs efficiently, and ensure financial transparency through digital payments (UN Women, 2023). Steps to increase opportunities for 'gig work' within target sectors, however, must account for noted concerns regarding the low, unregulated wages, 'over-working', fewer labour protections and fewer opportunities for on-the-job training that are often associated with such work (Charles et al., 2022).

### Women's access to finance

Women encounter significant challenges that restrict their ability to start and grow businesses. Traditional social norms and customary laws in the Pacific often make women financially dependent on other household members, limiting their access to finance. This dependency affects their ability to secure loans. For example, since women are rarely able to inherit land, they cannot use it as collateral for loans (ADB, 2023). They may also face discrimination in financial institutions. This hinders their capacity to invest in their ventures (GSMA, 2023b; ADB, 2023).

Personal savings and family borrowing are the most common sources of start-

up capital in the Pacific (PSDI, 2024a), making steady income a critical factor for entrepreneurship. However, women are less likely than men to access personal income, leaving them at a disadvantage when securing start-up capital. In many Pacific countries, remittances play a vital role in financing for women, who are more likely than men to receive them (UN Women, 2022a). While these remittances primarily support family needs such as housing, education and health care, their potential for entrepreneurial investment often remains untapped.

Some Pacific countries, including the Marshall Islands and Samoa, have implemented legislative changes to support women's access to and control over economic assets, including prohibiting gender-based employment discrimination and ensuring equal pay for equal work.<sup>23</sup> This is important as entrepreneurs often have to provide significant collateral, proven revenue streams or a substantive credit history when seeking financial support from institutions (UNCDF, 2021a; ADB, 2023). However, in other Pacific SIDS, including Papua New Guinea and Tonga, unequal property ownership rights and other legal and social barriers continue to constrain women's ability to acquire the capital or credit needed for loans or financing from relevant institutions.<sup>24</sup>

Access to basic resources, such as active bank accounts, remains a significant barrier for many Pacific women seeking to start a digital business. In 2022, for instance, only 58 per cent of women in Fiji had a financial account compared with 66 per cent of men, while in Samoa, just 36 per cent of women had accounts compared with 44 per cent of men (UNCDF, 2023a, 2023c). Women in rural areas face even greater exclusion, as can be evidenced by the gender parity scores (see Figure III.7a).<sup>25</sup> While in urban areas in Timor-Leste, Tonga and Samoa there is a tendency for equality

<sup>23</sup> See for Marshall Islands: <https://wbl.worldbank.org/en/data/exploreeconomies/marshall-islands/2024>; and for Samoa: <https://wbl.worldbank.org/en/data/exploreeconomies/samoa/2023>.

<sup>24</sup> See for Papua New Guinea: <https://wbl.worldbank.org/en/data/exploreeconomies/papua-new-guinea/2024>; and for Tonga: <https://wbl.worldbank.org/en/data/exploreeconomies/tonga/2024>.

<sup>25</sup> For the gender parity definitions in this chapter, refer to the notes of the related figures.



Limited access to bank accounts hinders Pacific women from starting digital businesses.

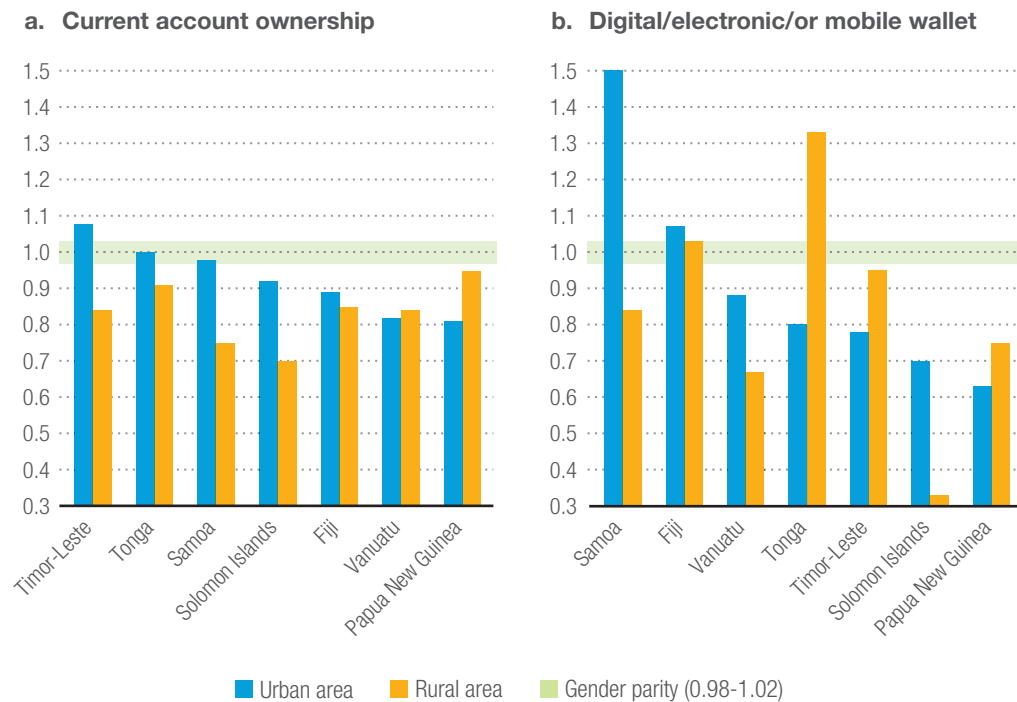
between men and women in terms of bank account ownership, in most Pacific SIDS, except Papua New Guinea, there is a wider gap between women and men.

While mobile wallets can offer an alternative to traditional banking, gender disparities persist in their access and use (see Figure III.7b).



**Figure III.7**

**Gender parity score in access to finance, by urban and rural, selected Pacific SIDS, 2022**



Source: UNCTAD, based on UNCDF (2023a–g).

Note: Gender parity is measured as the ratio of women’s ownership (current accounts, digital/electronic or mobile wallets) to men’s ownership. A value below one indicates higher ownership among men, while a value above one indicates higher ownership among women. Values between 0.98 and 1.02 represent gender parity.

### 3. Gender-based digital divides

#### Access to technology

Women in developing countries continue to face complex barriers to accessing and using digital technologies for social and economic inclusion. Aligning with key targets set out in SDG 5 to achieve gender equality and empower all women and girls, progress towards reducing the digital gender divide has been partially assessed through measures of individual mobile and smartphone ownership,

differentiated by gender. Access to other digital devices, such as computers, is also important when considering entrepreneurship (see also chapter II).

Recent country studies by UNCDF show significant variability in gender parity between countries and across different age groups in accessing digital devices, emphasizing the need for targeted interventions (see Figure III.8). For instance, Samoa, Tonga and Fiji exhibit gender parity or near parity in both smartphone access and tablet, laptop and desktop access across different age groups. In contrast, Papua New Guinea and Vanuatu show

Women in developing countries face barriers to accessing digital technologies for economic inclusion.



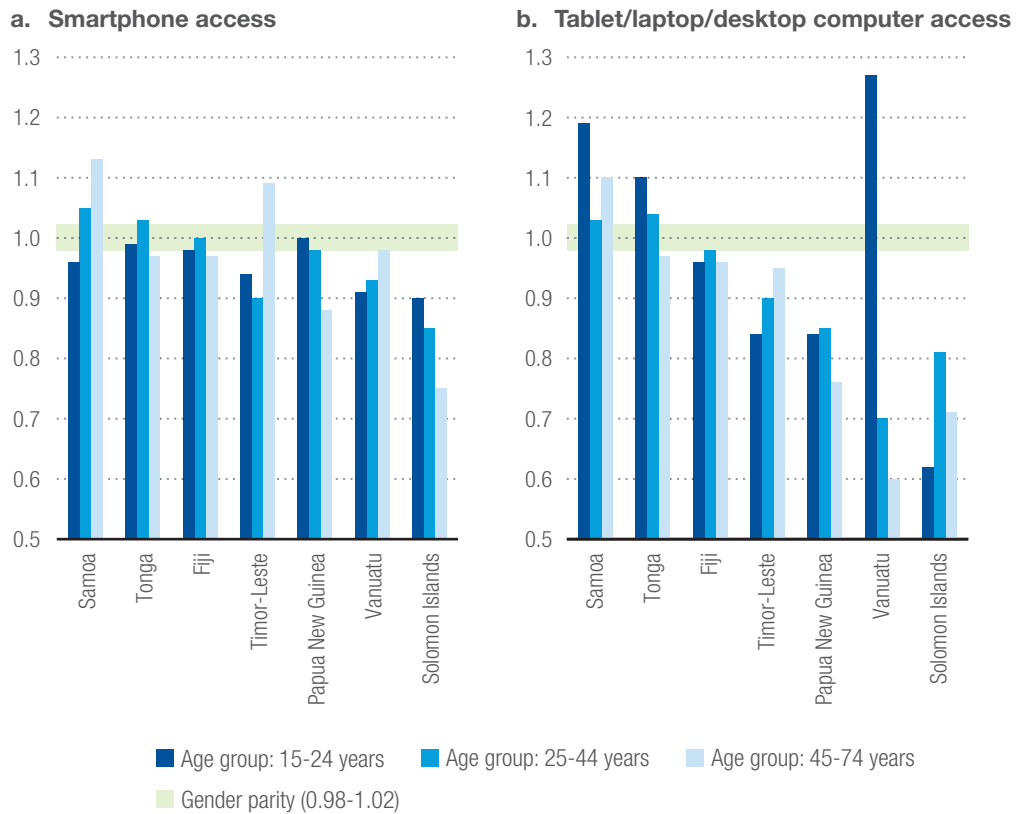
higher gender parity scores for smartphone access compared with tablet and computer access, suggesting that women in these countries have relatively better access to smartphones. These insights underscore the need for nuanced strategies to promote gender equity in digital access across the

Pacific SIDS, focusing on age-specific approaches for youth and the elderly, and enhancing smartphone access, but at the same time increasing access to the tablets, laptops and computers crucial for digital entrepreneurship.



**Figure III.8**

**Gender parity score for access to digital devices, by age group, selected Pacific SIDS, 2022**



Source: UNCTAD, based on UNCDF (2023a–g).

Note: Gender parity is measured as the ratio of women’s access to digital devices to men’s access. A value below one indicates higher access among men, while a value above one indicates higher access among women. Values between 0.98 and 1.02 indicate gender parity.

**Internet affordability and use**

Addressing the digital gender divide goes beyond increasing device ownership among women. It also requires tackling issues related to the ease and affordability of ongoing Internet connectivity, especially via mobile devices. Women in low- to middle-income countries are 19 per cent less likely to use mobile Internet due to the

cost of mobile-broadband connections or Internet-enabled handsets (GSMA, 2023b). While the affordability of mobile broadband has improved in some Pacific SIDS (see chapter II), cost remains a significant barrier, especially for women. For instance, in Fiji, 55 per cent of women report that the cost of connectivity limits their Internet use (UNCDF, 2023a).



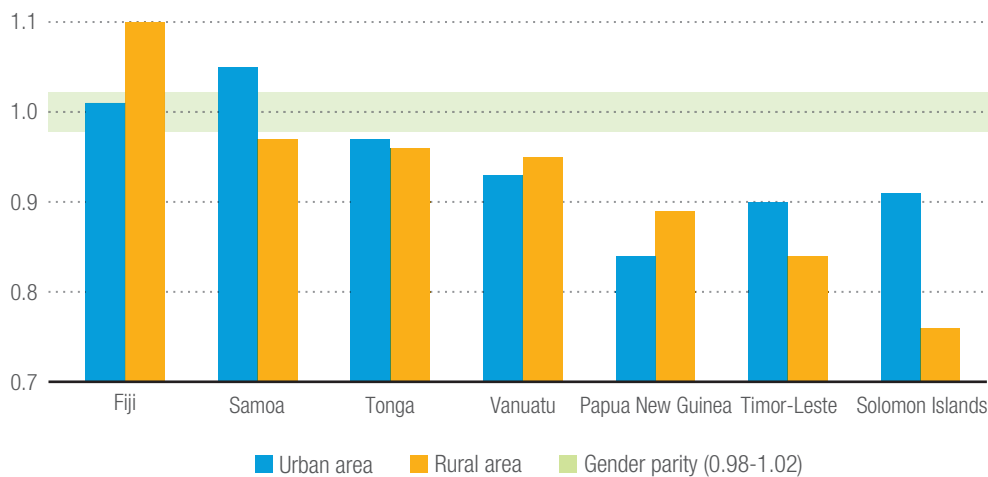
Figure III.9 illustrates the disparities in gender parity for Internet use both between and within countries. Fiji stands out, with women having greater Internet access than men in both urban and rural areas. In Samoan urban areas, women also have higher Internet access. Tonga shows near gender parity in both urban and rural

settings. Conversely, Papua New Guinea, Timor-Leste and the Solomon Islands exhibit significant disparities, with men having notably greater Internet access in both urban and rural areas. Additionally, instances of gender parity or near parity in rural areas merit further analysis and could serve as valuable country case studies.



**Figure III.9**

**Gender parity score in Internet use, by urban and rural areas, selected Pacific SIDS, 2022**



Source: UNCTAD, based on UNCDF (2023a–g).

Note: Gender parity is calculated as the ratio of women using the Internet to men using the Internet. A value below one indicates higher usage among men, while a value above one indicates higher usage among women. Values between 0.98 and 1.02 indicate gender parity.

### Digital skills

Developing digital skills is essential to foster women’s digital entrepreneurship in the Pacific. A lack of basic digital literacy, including the ability to use digital technologies effectively, hampers women’s ability to engage in high-growth sectors like e-commerce (UNCTAD, 2022). Enhancing the skills of early-stage women entrepreneurs through expanding access to education and targeted skills programmes is crucial to break down barriers to entry and foster long-term success. By understanding digital tools, such as devices and e-commerce platforms, women can better identify and capitalize on growth opportunities.

The pronounced gender imbalance in skills across the Pacific is illustrated in Figure III.10, which shows that women outperform men in digital literacy in only one-third of cases (Boccuzzi, 2021). Despite some progress, significant gaps remain in essential digital literacy skills. Gender parity is achieved only in urban Samoa and Tonga, as well as in rural Timor-Leste. Women in urban Samoa notably excel in digital literacy compared with their male counterparts. In some countries, such as Papua New Guinea and Vanuatu, men dominate in digital literacy, but to a lesser extent in rural than in urban areas.

Strengthening the digital literacy of Pacific women can help build confidence and

Enhancing early-stage women entrepreneurs’ skills is key to breaking barriers and ensuring success.



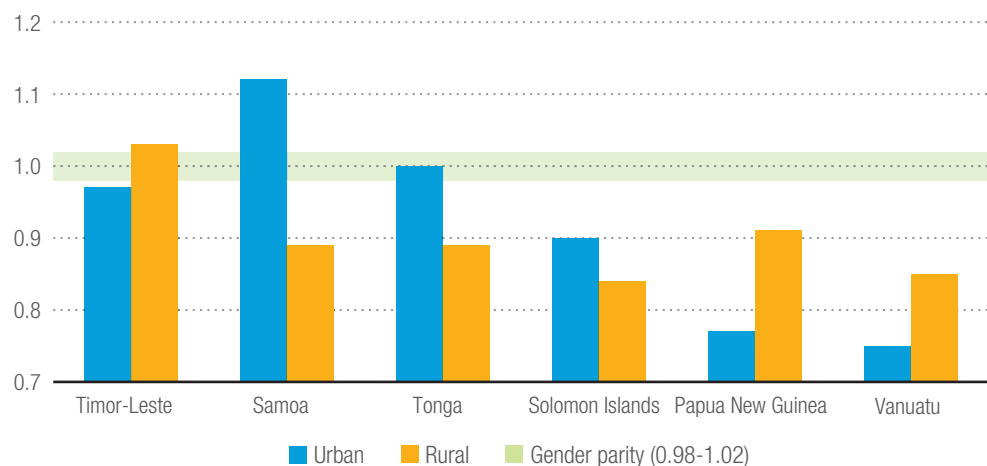
understanding of the benefits that the Internet and digital technologies can bring (see Box III.5). This emphasis on education is particularly evident in Samoa, where women outnumber men in finance-related studies, such as management and commerce, and more are pursuing information technology studies at the certificate level (Samoa Qualifications

Authority, 2021; UNESCO, 2023). Similarly, in Fiji, the Financial Education Project exemplifies how integrating financial literacy into the school curriculum for all grades can improve financial skills among both boys and girls. Approximately 197,000 students across more than 900 schools gain essential personal money management and investment knowledge each year.



**Figure III.10**

**Gender parity score in digital literacy, by urban and rural areas, selected Pacific SIDS, 2022**



Source: UNCTAD, based on UNCDF (2023a–g).

Notes: In this report, digital literacy is defined as the ability to create, edit or save a document or image, based on UNCDF Survey Reports. This metric represents one of the most basic tasks on ICT devices. Gender parity is measured as the ratio of women to men performing this task. A value below one indicates higher proficiency among men, while a value above one indicates higher proficiency among women. Values between 0.98 and 1.02 indicate gender parity.

Addressing online safety and trust issues is crucial for women’s positive inclusion in digital spaces.

**Online safety**

Women in the Pacific face some of the highest rates of physical and sexual violence globally, with approximately 60 per cent experiencing violence from an intimate partner or family member in their lifetime (United Nations Population Fund, 2023). This violence extends online, manifesting as cyberstalking, and online harassment and hate speech, which can lead to severe psychological and physical health issues. It is estimated that around 47 per cent of women entrepreneurs in developing countries encounter online gender-based violence.

For women digital entrepreneurs these challenges can make it difficult to focus on their business or secure funding

and access to mentorship (Keni, 2023). Addressing online safety and trust issues is crucial for women’s positive inclusion in digital and online spaces. At the first ‘Safe and Equal Online Spaces – Pacific Cyber Safety Symposium’ held in Fiji in 2023, stakeholders from across the Pacific discussed technology-facilitated gender-based violence and explored practical and policy-based solutions for women’s online safety. Additionally, the Australian Office of the eSafety Commissioner is collaborating with Pacific partners, such as the Fijian Online Safety Commission, to design and deliver workplace training, education programmes and policy guidance to combat technology-facilitated gender-based violence.





### Box III.5

#### Shenal Harakh: Empowering women through digital skills

In 2023, Shenal Harakh, a software developer and technology business owner based in Fiji, launched an initiative to teach people in Fiji how to build a website, regardless of their technical background. Inspired by the transformative power of digital technologies she witnessed while growing up in Australia and later in New York (United States), Shenal moved to Fiji to share these opportunities. Her workshops quickly drew a diverse group that developed digital skills to create and manage their own business websites successfully.

Shenal's software development agency in Nadi hosts regular workshops aimed at helping locals develop digital skills. These workshops focus on making technical concepts digestible and engaging, ensuring participants have successful learning experiences. Her presence as a Fijian in-person mentor significantly impacts the effectiveness of the sessions.

To date, around 120 individuals with diverse professional backgrounds have participated, 80 per cent of whom are women. Shenal emphasizes the importance of having a digital presence for their businesses and teaches the fundamentals of website building, including database management, email responses, hosting and design.

By offering digital skills training, Shenal addresses gaps in learning pathways and strengthens the presence of Fijian women in local technology spaces. Her efforts were recognized at the 2023 Women in Digital Awards in Australia, where she received the Rising Star of the Year Award (Fiji Sun, 2023). Shenal's initiative not only provides essential digital skills but also empowers Fijian women, encouraging them to participate actively in the digital economy and technology sector.

*Source:* UNCTAD, based on an interview with Shenal Harakh, Owner of Shenal (21 April 2024).

## C. Policy options and conclusions

Digital entrepreneurship offers a pathway for economic growth, innovation and social development in the Pacific region. To seize this opportunity, it is important to enable entrepreneurs to overcome traditional barriers, open new markets and reduce costs. The following sections look at policy actions that can be taken in Pacific SIDS to promote digital entrepreneurship and overcome the entrepreneurship gender divide in the region.

### 1. Strengthening the digital entrepreneurship ecosystem

#### Addressing regulatory barriers

To enhance the institutional environment for digital entrepreneurship, Pacific

legislative institutions, regulatory bodies and policymakers should look at ways to reduce business registration costs, promote financial sector development, and reinforce the rule of law for MSMEs engaged in digital operations. These steps could help create a more conducive environment for the growth and sustainability of digital businesses in the region.

The PRESR (PIFS, 2021), developed under the Pacific E-Commerce Initiative, outlines steps to enhance regional cohesion and drive macroeconomic growth through e-commerce. It prioritizes MSMEs, highlighting how digital tools can improve market access, competitiveness, cross-border trade and overall economic value. Complementing this, the Pacific E-Commerce Portal serves as a central hub for e-commerce development, offering



resources on regulations, ongoing projects, regional and national reports, infographics tracking strategy implementation, training programmes, and access to community platforms like E-Biz and eCove.<sup>26</sup>

At the national level, several Pacific SIDS have included regulatory measures in support of digital entrepreneurs and MSMEs in their national e-commerce strategies. For example, the Government of Solomon Islands (Government of Solomon Islands, 2022), proposed regulatory changes that focus on improving the affordability, accessibility and sustainability of digital devices and services; and enhancing e-transaction, trade laws and cyberlaw frameworks.

Similarly, the Cook Islands' E-commerce Acceleration Work Plan prioritizes amending consumer protection laws for online transactions and establishing data protection and privacy regulations. These efforts aim to align with international standards and support the growth of emerging e-commerce and digital business practices (Government of the Cook Islands, 2023). Separately, in Kiribati, with the support of the UNCTAD digital government platform initiative, the introduction of a Trade Portal has served as a business facilitation tool. It streamlines regulatory processes, provides information to entrepreneurs and reduces administrative burdens.

In their respective national e-commerce strategies, the Governments of Fiji (Government of Fiji, forthcoming) and Timor-Leste (Government of Timor-Leste, forthcoming) also focus on initiatives that streamline business operations, simplify business licensing processes and expedite Customs procedures to facilitate market entry and expand the regional and global reach of MSMEs. Similarly, the Samoa e-commerce strategy (Government of Samoa, 2022) focuses on supporting MSMEs through PPPs, and providing assistance with intellectual property, e-signatures and

consumer protection laws to ensure compliance with national regulations.

To strengthen the digital entrepreneurship ecosystem, regulatory responses should consider how cultural structures, such as family responsibilities and communal resource ownership, impact economic practices. For instance, innovative financing mechanisms like crowdfunding align with family-based structures in the Pacific and can support entrepreneurial activities, despite limited current uptake (Moana Research, 2020; PSDI, 2024a). Adjusting financial regulations to acknowledge customary land and asset ownership can help overcome barriers to start-up financing (Scheyvens et al., 2020).

By integrating Pacific cultural values into business practices, non-monetary benefits such as kinship and reciprocity can be fostered, enhancing socioeconomic development through stronger village ties and collaboration (Scheyvens et al., 2020; Steven and Vunibola, 2021). Policymakers should accommodate these cultural values in regulations to shape e-commerce and digital business, fostering mutual support and collaboration across Pacific digital businesses, building trust and spreading economic benefits throughout the community (Moana Research, 2020). This is also in line with the 2050 Strategy for the Blue Pacific Continent, which emphasizes people-centred development and seeks to ensure the protection of the diversity and heritage of Pacific Islands' cultural values and traditional knowledge.

### Using regulatory sandboxes to manage innovation

In many Pacific SIDS, inadequate legal frameworks for addressing high-risk financial crimes remain a challenge for innovative digital financial services (Zhou et al., 2024). To mitigate these vulnerabilities, policymakers should consider implementing innovation facilitators like regulatory sandboxes. These controlled

Policymakers should integrate cultural values into regulations to foster collaboration, trust and community benefits.

<sup>26</sup> See <https://pacificcommerce.org/>.





environments enable the testing of new financial technologies under regulatory oversight, reducing risks while fostering innovation. Regulatory sandboxes not only strengthen legal frameworks to address emerging financial crimes (World Bank, 2021), but also enhance MSMEs' access to innovative financial tools like digital payment platforms and alternative lending models.

The Bank of Papua New Guinea led the way in 2019, launching the first domestic regulatory sandbox among Pacific SIDS. That same year, Fiji introduced its FinTech Regulatory Sandbox, which trialled a climate risk parametric microinsurance product, successfully entering the market in 2022 (Chanel, 2022). The Fiji National Financial Inclusion Strategy (2022–2030) further accelerated digital payment adoption (Reserve Bank of Fiji, 2023). Similarly, the Central Bank of Solomon Islands launched its domestic FinTech Regulatory Sandbox in 2022, trialling a digital money transfer service and assessing three more applications by the end of 2023 (Central Bank of Solomon Islands, 2023).

The Pacific Regional Regulatory Sandbox initiative, launched under the Pacific Islands Regional Initiative with support from the Alliance for Financial Inclusion, represents an emerging, collaborative framework that harmonizes regulatory requirements across countries such as Fiji, Papua New Guinea, Samoa, Solomon Islands, Timor-Leste, Tonga and Vanuatu. This unified platform allows financial service providers to test innovative fintech solutions in a broader Pacific market (Shust, 2022). By simplifying the regulatory process across multiple countries, this sandbox aims to enhance the appeal of the Pacific region as an attractive and cohesive market for fintech innovations.

### Encouraging the use of innovation hubs, incubators and accelerators

Strong PPPs play a crucial role in e-commerce, embedding resilience, integrity, inclusivity and adaptability within the development and delivery of digital

infrastructure and services, enabling access to resources, training and support for emerging entrepreneurs (UNDP, 2023; Zhou et al., 2024). As discussed earlier in this chapter, the recent implementation of government-led regulatory initiatives to strengthen the market maturity of national banking sectors through greater private-sector input (fintech innovation) is a positive indicator of Pacific Islands' growing recognition of the role of PPP investment for entrepreneurship.

In this context, the digital dimension could be more pronounced among local entrepreneurship ecosystem stakeholders, such as incubators, ESOs and business associations (many of which are funded or delivered by international development agencies). A comprehensive approach can be adopted in stages. Initially, structured incubation programmes should be introduced to assist entrepreneurs in transforming their ideas into minimal viable products. Following this, the focus should shift to the medium term, where ESOs can play a vital role in fostering collaboration by sharing experiences and best practices, while also mentoring the next generation of digital entrepreneurs. In the long term, it will be essential to establish specialized technology support institutions—such as tech hubs, robotics labs and 3D printing facilities (UNCDF, 2021a).

Incubators, ESOs and business associations are crucial support hubs. By connecting entrepreneurs with the right opportunities, and offering tailored services and strategic guidance, such partnerships can create a robust environment for long-term success. Successful innovation hubs often balance a strong, cohesive community of entrepreneurs with a diverse range of skills and resources (UNCTAD, 2019). However, they also depend heavily on the existing entrepreneurial ecosystem, and isolated efforts without addressing broader ecosystem challenges—such as lack of access to mentors, investors or entrepreneurial knowledge—often fail to produce lasting impact.

Successful innovation hubs balance community cohesion with diverse skills and resources.



Governments must invest in digital education, including lifelong learning and sector-specific training in agriculture and tourism.

The PRESR (PIFS, 2021) prioritizes building a regional innovation ecosystem by strengthening business incubators and accelerators to support digital start-ups. It also promotes collaboration between entrepreneurs and investors to facilitate the scaling of digital ventures. Additionally, the creation of regional e-commerce business associations is recommended to support these efforts.

At the national level, Timor-Leste (Government of Timor-Leste, forthcoming) and Samoa (Government of Samoa, 2022), are advancing similar goals through their e-commerce strategies. Both countries focus on fostering digital entrepreneurship via innovation hubs, incubation programmes and mentorship initiatives. Initiatives like the Samoa Business Hub Business Incubator Programme and the UNDP Youth Co-Lab delivered by the Samoa Chamber of Commerce and Industry aim to cultivate digital talent by providing entrepreneurs with access to innovation labs, financial support, networking opportunities and business development resources. Particular focus is placed on sectors like digital tourism and agriculture, where tailored programmes are designed to help entrepreneurs innovate and scale their businesses.

## 2. Building digital skills

Investing in education and training in digital technologies and entrepreneurship is crucial to advance digital entrepreneurship in the Pacific. Despite the availability of free or low-cost digital business tools on social platforms, many entrepreneurs generally lack the skills needed to utilize digital opportunities fully (UNCDF, 2021b).

Several Pacific countries—including Kiribati, the Marshall Islands, the Federated States of Micronesia, Nauru and Tonga—face significant foundational digital skills shortages, even among educators (World Bank, 2024b). Strengthening digital capabilities among teachers can improve support for technology adoption and foster stronger entrepreneurship ecosystems

(ILO, 2019). Governments need to invest in digital education across all levels, including lifelong learning and sector-specific training in key industries such as agriculture and tourism. Initiatives like Fiji National University offering free upskilling courses in digital marketing and e-commerce (Fiji National University, 2022) showcase models that other vocational and higher education institutions in the region should replicate.

Business development intermediaries, such as incubators and sector-specific associations, also need greater technological competencies. By equipping these facilitators with the skills to utilize emerging technologies like AI, they can better support entrepreneurs (Cruz and Zhu, 2023). This requires collaboration between Pacific governments, private sectors and educational institutions to expand learning opportunities and ensure cohesive adoption of advanced digital tools (Charles et al., 2022; Bhatia, 2024).

Investing in regional digital skills development will empower Pacific entrepreneurs to thrive in the digital economy. The PRESR (PIFS, 2021) underscores the importance of digital skills development programmes, particularly for MSMEs, women and youth, focusing on areas like app development and community management. National e-commerce strategies also reflect this priority, within initiatives such as that of Timor-Leste (Government of Timor-Leste, forthcoming), which includes digital literacy campaigns promoting gender equality and youth participation to ensure e-commerce benefits all segments of society.

## 3. Improving access to finance and digital financial services

The significant financing gap in the Pacific hinders digital entrepreneurship, as limited access to information and financing complicates planning and resource allocation, while available options often come with complex requirements and high



upfront costs (PSDI, 2024a). Policymakers should collaborate more with the private sector and civil society to raise awareness about financing options for businesses. Many Pacific governments, including the National Reserve Bank of Tonga (Tonga, Ministry of Trade and Economic Development, 2021), have implemented financial inclusion strategies with targets for improving financial literacy. These programmes should go beyond basic education to include MSME-specific training and support for financing applications. Policy approaches could include establishing business support networks, creating websites with comprehensive financing information, and working with financial institutions to simplify application processes, with ESOs potentially playing a key role in implementation and advocacy.

Remittances from overseas family members are a crucial alternative financing source for digital entrepreneurs, particularly women, though they have declined post-COVID-19, impacting overall funding availability (UN Women, 2022a, 2022b). Harmonizing regulatory frameworks and investing in cross-border digital transactions can improve remittance inflow and support MSME financing (PSDI, 2024a). PIFS' work on Correspondent Banking Relations and other collaborations is essential to enable mobile money and digital remittance channels (PIFS, 2024b).

Other alternative financing mechanisms, such as crowdfunding and peer-to-peer lending, can also play a role in expanding the digital entrepreneurship ecosystem. However, to facilitate these options, legal and regulatory frameworks must be streamlined. The Fiji Access to Capital Bill 2024 aims to support businesses in raising capital through such financing options (Government of Fiji, forthcoming). Similarly, the Government of the Cook Islands (Government of the Cook Islands, 2023) has highlighted the need for more direct private-sector partnerships to provide entrepreneurs with access to alternate financing, such as angel investment, with proposals to facilitate this through annual 'matchmaking' events

supported by local or regional accelerators.

In addition, governments and financial institutions should focus on improving digital payment infrastructure to support digital entrepreneurs (Zhou et al., 2024). Prioritizing investment in this area, especially in underserved regions, will ensure seamless transactions through interoperability standards, directly benefiting entrepreneurs by improving access to markets and fostering business growth. Expanding international payment gateways like Stripe and PayPal beyond Fiji and Papua New Guinea, and integrating local systems (such as MauaPay in Samoa) into the wider market, are crucial steps. To support these advancements, consistent legal and regulatory frameworks are necessary to ensure financial integrity, enable secure operations and enhance access to finance for digital entrepreneurs. (USAID, 2024; Zhou et al., 2024).

The PRESR (PIFS, 2021) advocates non-bank digital payment solutions and fintech innovations to promote financial inclusion. At the national level, countries are taking measures to promote access to finance and financial services. For instance, Fiji is working on aligning MSME support with existing initiatives such as the credit guarantee scheme, ensuring that MSMEs benefit from accessible financing. This initiative aims to improve coordination between MSMEs and financial institutions to streamline access to funding and regulatory compliance, particularly for digital businesses looking to scale (Government of Fiji, forthcoming).

Timor-Leste prioritizes digital literacy to enhance financial inclusion, alongside e-wallet solutions that improve access to financial services (Government of Timor-Leste, forthcoming). Financial inclusion is promoted through access to products such as mobile banking and digital wallets (Government of Samoa, 2022). Likewise, Solomon Islands supports financial inclusion by expanding mobile money services and offering digital skills training targeted at rural communities (Government of Solomon Islands, 2022).

Governments and financial institutions should enhance digital payment infrastructure to support entrepreneurs.



## 4. Supporting women's digital entrepreneurship

Women entrepreneurs' inclusion fosters inclusive growth, enhancing resilience, creativity, innovation and adaptability in local economies (PSDI, 2024b). Effective policy changes require the engagement of all stakeholders across public and private sectors, as well as civil society, both nationally and regionally. The recent revitalization of the Pacific Leaders Gender Equality Declaration in November 2023 by Pacific political leaders is a promising step, demonstrating their commitment to collaborative efforts aimed at advancing gender equality. This initiative recognizes the transformative potential of digital technologies to bridge the gender divide by promoting access to ICT and digital services for all Pacific peoples. It aims to drive innovation, uplift communities and create opportunities that can accelerate the realization of the 2050 vision while promoting gender equality and social inclusion across the Blue Pacific Continent.

### Targeted skills development and support systems

Gender disparities in education and training significantly limit women's opportunities in digital entrepreneurship. As discussed earlier, addressing these gaps requires a coordinated effort involving schools, universities, the private sector and other stakeholders in the skills ecosystem. Incorporating digital literacy and e-commerce into national curricula, as demonstrated by the Fiji Financial Education Project, can further ensure that girls and women gain equal access to essential skills from an early age. (Boccuzzi, 2021; Samoa Qualifications Authority, 2021; UNESCO, 2023). In Tonga, the government is considering measures to promote gender balance in ICT education by integrating ICT and digital economy topics into the curricula

of secondary and tertiary institutions. This initiative aims to improve opportunities for women to pursue careers in ICT.

In addition, it is vital to develop policies and initiatives that promote gender equality in e-commerce activities, including the development of e-commerce entrepreneurship and capacity-building programmes specifically targeted at women. One example is the World Bank-led 'Women Entrepreneurs Finance Initiative',<sup>27</sup> which provides tailored, country-specific e-commerce skills training and coaching to local women-led SMEs, many of whom formerly operated as informal businesses in sectors such as handicrafts, food and fashion. Initiatives that focus on the incubation and mentoring of women-owned digital businesses, such as the UNCTAD eTrade for Women initiative (see Box III.6), are particularly crucial in nurturing the next generation of women entrepreneurs.

At the national level, the Government of Timor-Leste seeks to design training programmes on digital best practices for women entrepreneurs to ensure secure and successful participation in e-commerce. It also seeks to promote gender inclusion in business incubation and accelerator programmes that nurture innovative ideas and start-ups led by women (Government of Timor-Leste, forthcoming).

To encourage Pacific women to embrace digital entrepreneurship, governments should launch public awareness campaigns highlighting the accessibility and benefits of e-commerce. For example, the Tongan National E-Commerce Strategy integrates women's empowerment across all policy areas, recognizing that their participation—whether informal or formal—is vital to the success of e-commerce platforms. The strategy includes awareness programmes designed to promote e-commerce activities and improve accessibility for women (Tonga, Ministry of Trade and Economic Development, 2021).

<sup>27</sup> <https://digitalforwomen.worldbank.org/leveraging-commerce>.





### Box III.6 The eTrade for Women initiative

The eTrade for Women initiative, part of the broader UNCTAD eTrade for all programme, is designed to empower women digital entrepreneurs. It aims to accelerate inclusive growth and contribute to the 2030 Agenda for Sustainable Development by supporting women as leaders, innovators and decision makers in the digital economy. The initiative operates along four key strategic action lines: advocacy, capacity-building, community-building and policy dialogue.

In the Pacific region, the initiative offers unique opportunities for women entrepreneurs to share knowledge, broaden their networks, gain visibility and expand their reach. In 2023, five women entrepreneurs from three Pacific countries participated in a masterclass organized in Kuala Lumpur. The masterclass offered them valuable opportunities to engage with experienced mentors, develop entrepreneurial skills and grow their e-commerce ventures, reinforcing the initiative's long-term goal of transforming women's interest in e-commerce into sustained careers as digital entrepreneurs.

In 2025, the eTrade for Women Community plans to expand its reach in the region through a workshop aimed at scaling women-led digital businesses. This workshop, facilitated by an industry expert and Community member, will provide hands-on training and tools designed to help participants navigate the digital economy and increase their business impact. A focus on building a robust community will ensure that women not only gain the technical skills necessary to succeed in the digital economy but also receive ongoing support, mentorship and opportunities to engage in policy dialogue at both national and regional levels.

This initiative underscores the importance of fostering women's leadership in the digital economy, not only in the Pacific but globally, by providing structured support and platforms for these entrepreneurs to influence policy debates and become role models for others.

*Source:* UNCTAD.

As outlined in the PRESR (PIFS, 2021), a key policy priority is enhancing the digital and business skills of women managing or owning firms in the Pacific. Closing persistent gender gaps through tailored training is crucial to fully integrating women into the rapidly evolving digital economy. The PRESR also emphasizes the need to collaborate with relevant stakeholders, such as Ministries of Women's Affairs, to ensure these initiatives support broader gender equity goals and foster inclusive economic empowerment.

Finally, women-owned MSMEs are more likely to employ women (Boccuzzi, 2021), creating opportunities in the Pacific for female employees to develop digital skills through on-the-job training or collaborations with women-led organizations. Governments can enhance these efforts by promoting partnerships

between women-owned MSMEs, local training providers and international organizations to deliver tailored digital skills training, while incentivizing collaborations with educational institutions can expand mentorship and internship programmes.

#### **Tailoring financial products for women entrepreneurs**

Women in the Pacific face several barriers in accessing financial services and funding. As a result, Pacific women, particularly those in the informal sector, are continually excluded from opportunities to build savings, accrue financial credit, and access available financial services and support mechanisms, such as insurance (PSDI, 2023).

According to the Better Than Cash Alliance (Goodwin-Groen and Klapper, 2023), designing financial products that respond to women's lives, or better marketing



existing products to show how they align with women's needs, will lead to long-term benefits for women. This has proven effective in Fiji where local fintech organizations, such as Solé Fintech, have had a substantive and long-term impact in providing women with access to suitable financial products and services, with their current focus on supporting women's means of saving, making payments and budgeting.

From a financial sector governance and policy perspective, Fiji has also become the third country, globally, to adopt a dedicated Women Entrepreneurs Finance Code, which seeks to explicitly develop integrated and multi-stakeholder ecosystem responses to strengthen pathways for women entrepreneurs to transition or scale their businesses. Tailored products could include loan options with lower interest rates, flexible repayment schedules, digital payment options and no collateral requirements, helping address the specific situations of women digital entrepreneurs.

The Tonga Development Bank and the National Bank of Samoa are trialling a psychometric-based credit scoring tool, developed as part of the 'Pacific Islands Fintech Innovation Challenge', to offer loans to individuals with limited or no formal credit history. This innovation is unlocking access to finance for women, as well as other marginalized and vulnerable populations, including youth, seasonal workers and rural enterprises (UNCDF, 2022). In Timor-Leste, the government aims to facilitate provisions of grants, loans and other financial resources to support women entrepreneurs in starting and scaling their e-commerce businesses (Government of Timor-Leste, forthcoming).

In addition, initiatives to improve women's access to remittances and digital financial services should address regulatory barriers and develop tailored financial products, including insurance. Addressing unequal property ownership, inheritance laws and land rights can also enhance women's access to financing. Expanding access to business associations, e-commerce networks and entrepreneurial ecosystems

can offer collective support through member-financed savings or insurance schemes, especially for women in the informal economy (PSDI, 2024b).

Tax reforms can also play an important role. In Papua New Guinea, for instance, the introduction of lower tax rates for microenterprises or small businesses has provided women (and other excluded demographics) with more competitive means of entry into digital entrepreneurship. The provision of additional targeted support to guide women through taxation administration processes also strengthens their economic participation as business owners and entrepreneurs. (PSDI, 2023; OECD, 2022)

### Regulatory reforms in support of women digital entrepreneurs

Mainstreaming gender into digital entrepreneurship may also require adapting regulations. To enable Pacific women to benefit from digital advancements and enhance their workforce participation, Pacific SIDS should implement national policies that protect women's rights as both domestic workers and digital entrepreneurs. This includes enacting comprehensive labour laws that ensure fair wages, safe working conditions and maternity leave rights. In particular, extending maternity protections in the informal economy through allocated social security funds would significantly contribute to achieving decent and equitable work outcomes (ILO, 2016).

Relatedly, national policy responses pertaining to the governance and regulation of local labour markets should more explicitly recognize the digital skill-based needs of Pacific women currently involved within key sectors that are poised for digitalization, such as the care economy or localized, non-digital gig work that centres on the production of cultural goods. As these markets and value chains increasingly involve digital components, regulation is needed to accommodate the specific needs and experiences of women, and to further avoid exacerbating the

Tailored products could include low-interest loans, flexible repayments, digital payments and no collateral.



adverse gendered patterns of informality that exist within these sectors and within gig work more broadly (PSDI, 2024b).

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Digital entrepreneurship has the potential to contribute to economic growth, innovation and social development in the Pacific region. However, the development of a robust digital entrepreneurship ecosystem faces several challenges that go beyond access to essential digital infrastructure and devices to include concrete policy actions to create a supportive ecosystem, promoting digital literacy and skills, and facilitating access to financial resources.

Women's digital entrepreneurship plays an important role in advancing gender equality and economic empowerment in the Pacific. However, women digital entrepreneurs

encounter significant barriers, including limited access to financial resources, digital devices and the Internet, and lower digital literacy compared with men, alongside societal norms that prioritize unpaid care work. Although progress has been made through initiatives such as targeted entrepreneurship training, regulatory reforms and new financial products for women, further efforts are required to address the persistent social and economic challenges they continue to face.

Addressing existing barriers to digital entrepreneurship requires comprehensive support from various stakeholders, including capacity-building organizations, government programmes and international development agencies. Initiatives like digital skills training, mentorship programmes and supportive policies can help bridge the gender divide.









Chapter IV

# Laying the groundwork: The early stages of digital trade in the Pacific





**Building on the discussions in previous chapters on Internet connectivity and digital entrepreneurship, this chapter focuses on digital trade, which is increasingly shaping global economic interactions (International Monetary Fund (IMF), OECD, UNCTAD, et al., 2023). In 2022, global exports of DDS reached \$3.94 trillion, accounting for 55 per cent of the total global services trade that year.<sup>28</sup>**

**This chapter examines opportunities and challenges for Pacific SIDS that seek to engage in digital trade. It looks at the Pacific's trade context (section A) and surveys the role of digital marketplaces and online retail shops, identifying key challenges faced by businesses to engage in digital trade (sections B and C). The chapter also reviews existing legal frameworks for digital trade in the Pacific (section D) and concludes by considering policy options to promote digital trade (section E).**

## A. Digital trade in the Pacific

Digital trade is comprised of international trade that is ordered or delivered digitally, or both (see Figure IV.1). It encompasses activities including the international sale of goods and services through digital marketplaces and online retail shops (i.e. international e-commerce), and the digital delivery of services such as software, elearning and online media content (IMF, OECD, World Trade Organization (WTO), et al., 2023). These elements of digital trade have been facilitated by advancements in digital technology and the growing use of online platforms, which allow businesses to engage with global markets more efficiently.

Digital trade has the potential to help businesses, particularly in developing regions, overcome traditional barriers to market access (UNCTAD, 2017; UNESCAP et al., 2023). By leveraging digital platforms, businesses can reach international customers without a need for physical presence abroad, offering opportunities for diversification and enhanced participation in global value

chains. However, significant challenges remain for Pacific SIDS to fully participate in and benefit from digital trade (IMF, OECD, UNCTAD, et al., 2023; UNESCAP et al., 2023), as outlined in earlier chapters.

Disentangling digital trade from total trade in goods and services remains challenging (IMF, OECD, WTO, et al., 2023). Digitally delivered trade can be approximated by aggregating services products that can be delivered and consumed digitally (referred to as DDS).

Digitally ordered trade is the international subset of e-commerce, which is itself not widely measured. The latest UNCTAD estimates (UNCTAD, 2024b), which cover 43 developed and developing economies accounting for three-quarters of global GDP and trade, find ecommerce sales by businesses were worth around \$27 trillion in 2022. Of these, around \$2.9 trillion were estimated to be international sales. It is estimated that roughly 12 to 14 per cent of these 43 economies' total exports of goods and services are ordered digitally.

<sup>28</sup> See <https://unctad.org/news/digitally-deliverable-services-boom-risks-leaving-least-developed-countries-behind>.

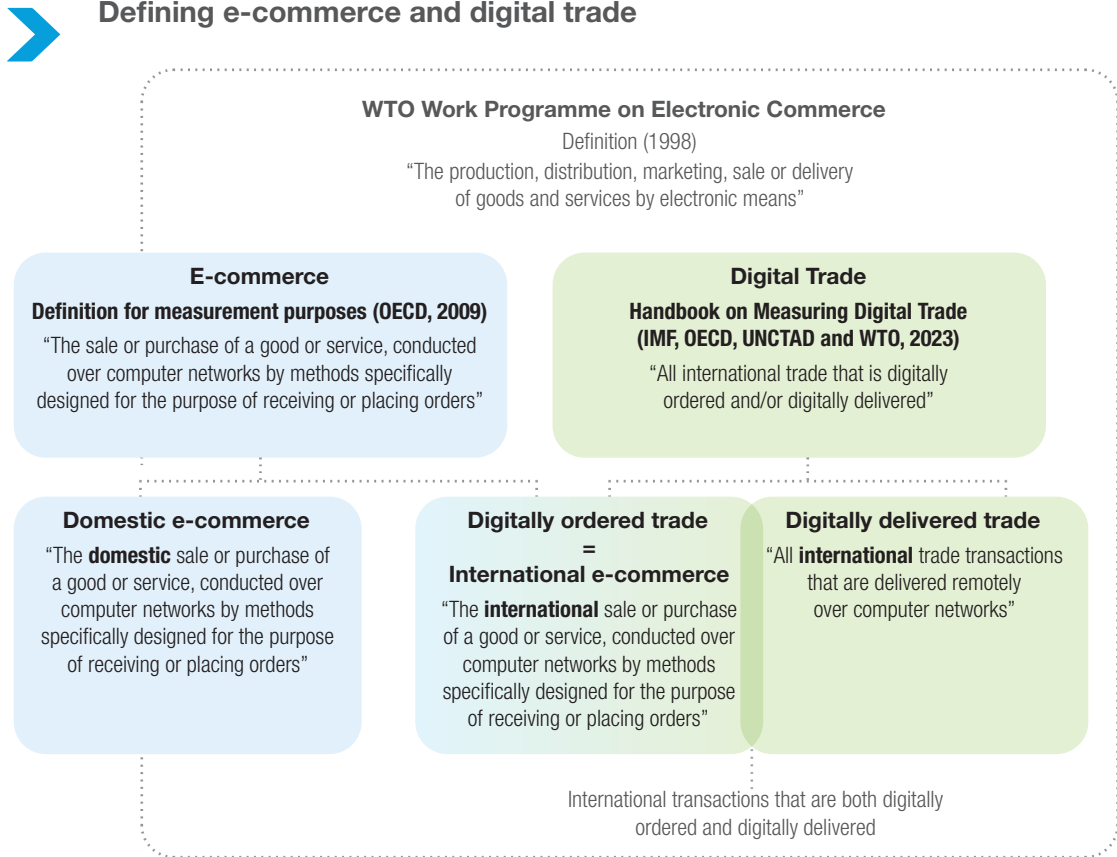


Significant challenges persist in differentiating digitally ordered goods or services from traditional commerce. For instance, Customs merchandise trade statistics and data on low-value shipments from logistics providers cannot distinguish whether parcels were digitally ordered or not.

Additionally, household e-commerce surveys often struggle to identify whether digital services (e.g. music streaming or e-books) purchased online are delivered across borders and from which specific country or territory, making it difficult to obtain more detailed cross-border e-commerce data.

Figure IV.1

Defining e-commerce and digital trade



Source: UNCTAD, based on IMF, OECD, UNCTAD and WTO (2023).

1. Trade in goods and services

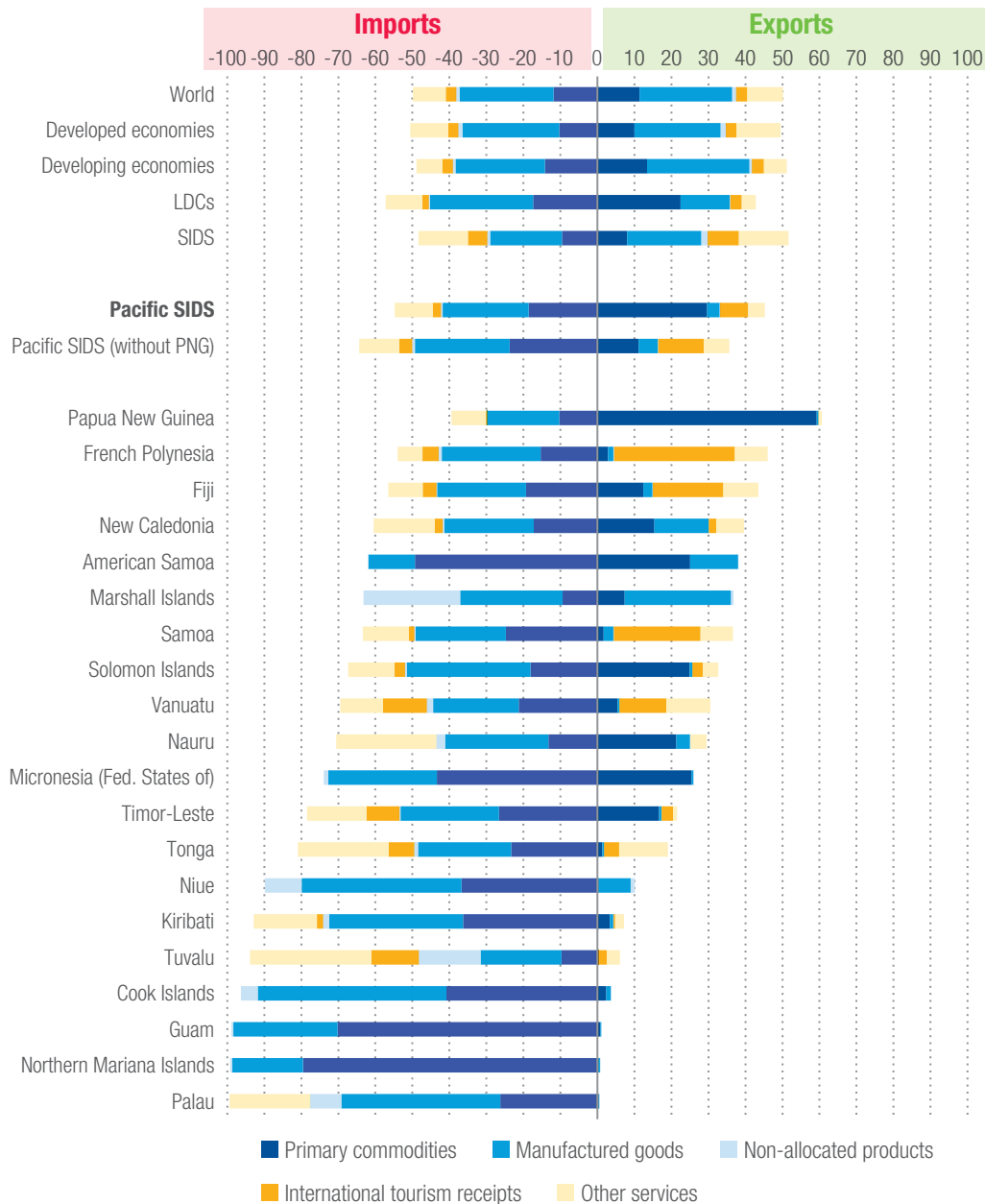
Digital trade offers Pacific SIDS a path to overcome geographic barriers and diversify economies.

Digital trade encompasses both goods and services, each with distinct characteristics and implications. Digitally ordering of goods can open new markets and boost exports of niche, high-value products like organic agricultural or cultural goods. However, trade logistics, Customs procedures, tariffs, transport infrastructure and last-mile delivery services can still pose challenges. Services ordered but

not delivered digitally, such as tourism, can provide access to overseas markets and increase services exports. In contrast, services both ordered and delivered digitally—such as online purchases or sales of intangible products like software, music or e-learning—are not restricted by physical barriers, offering a significant opportunity to overcome geographic trade challenges faced by Pacific SIDS.

The trade composition of Pacific SIDS is primarily characterized by a high reliance on trade in goods (see Figure IV.2).

**Figure IV.2**  
**Trade balance, by flow and selected categories, country groupings and Pacific SIDS, 2023**  
(Per cent of total trade)



Source: UNCTAD calculations, based on UNCTADstat (updated 29 July 2024 for services; 21 October 2024 for products), accessed 31 October 2024.

Notes: Primary commodities category comprises primary commodities, precious stones and non-monetary gold (SITC 0 + 1 + 2 + 3 + 4 + 68 + 667 + 971). The manufactured goods category includes manufactured goods (SITC 5 to 8 less 667 and 68). The international tourism receipts category includes passenger transport (all modes) and travel. The statistics were not available for services, both exports and imports, for the following economies: American Samoa, Cook Islands, Fiji, French Polynesia, Guam, Kiribati, Marshall Islands, Federated States of Micronesia, Nauru, New Caledonia, Niue. Data on services exports were not available for Palau.

Imports are largely concentrated in primary commodities and manufactured goods, reflecting the structural dependence of many Pacific SIDS on external sources for essential goods. Exports, on the other hand, are predominantly composed of primary commodities, with limited diversification into manufactured goods. Services, particularly tourism, represent an important component of the export for several economies, such as Fiji, French Polynesia and Samoa. Most countries experience a persistent and widespread trade deficit, with the notable exception of Papua New Guinea, which maintains a trade surplus driven by its strong primary commodity exports (notably representing 59 per cent of all trade).

Compared with other country groupings, Pacific SIDS exhibit a more homogeneous trade composition, suggesting a need for economic diversification to address these trade imbalances and bolster economic resilience. The expansion of services can play a key role in this context, reducing dependence on primary commodities, increasing value addition and enhancing competitiveness. This could support a deeper integration into regional and global value chains. While this enhances trade resilience, it also increases vulnerability to external economic shocks, such as

global market fluctuations, supply chain disruptions and changes in demand for specific products and services. Therefore, a balanced approach to integration is needed, with a focus on building resilience to such shocks through strategies like product diversification, regional collaboration and the development of robust local productive capabilities.

Most trade in the region occurs with larger external markets, in particular Australia and New Zealand, but also North America and Europe. Intraregional trade represented only 2.6 per cent of all merchandise trade in 2023, of which 30 per cent were manufactured goods.<sup>29</sup> This pattern is influenced by several factors. In merchandise trade, limited sea transport and virtually non-existent air connectivity between islands pose significant barriers, with high costs making cargo flights impractical. Interviews with businesses for this report highlight a primary focus on expanding domestic markets and maintaining links with larger, more profitable markets outside the Pacific. However, a recent survey by Pacific Trade Invest Australia suggests a gradual shift away from focusing only on exporting outside of the Pacific Islands towards exporting both intra-regionally and internationally (see Figure IV.3).



**Figure IV.3**

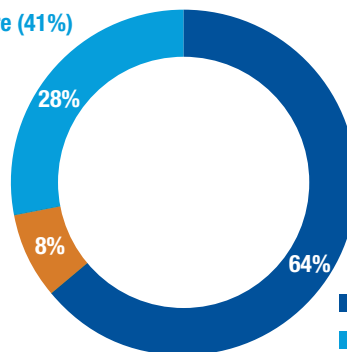
**Origins of export revenues for Pacific islands exporters, 2014–2024**

**Skew towards agriculture (41%)**

2022: 34%    2016: 49%  
2020: 23%    2014: 45%  
2018: 32%

**Skew towards services (incl. ICT) (20%)**

2022: 7%    2016: 8%  
2020: 6%    2014: 7%  
2018: 7%



**Skew towards manufacturing (70%) and tourism (74%)**

2022: 60%  
2020: 70%  
2018: 60%  
2016: 43%  
2014: 48%

- Export to both Pacific Islands and other markets
- Only export outside Pacific islands
- Only export to Pacific islands

Source: UNCTAD, based on Pacific Trade Invest Australia (2024).

Notes: The data are available for every other year from 2014 to 2024. The number of respondents per year is: 270 (2014), 200 (2016), 201 (2018), 226 (2020), 200 (2022) and 252 (2024). The survey question (Q12) was: 'From which geographic areas did your company generate export revenue, including revenue from overseas visitors over the past 12 months?'

<sup>29</sup> UNCTAD, based on the same source as Figure IV.2.

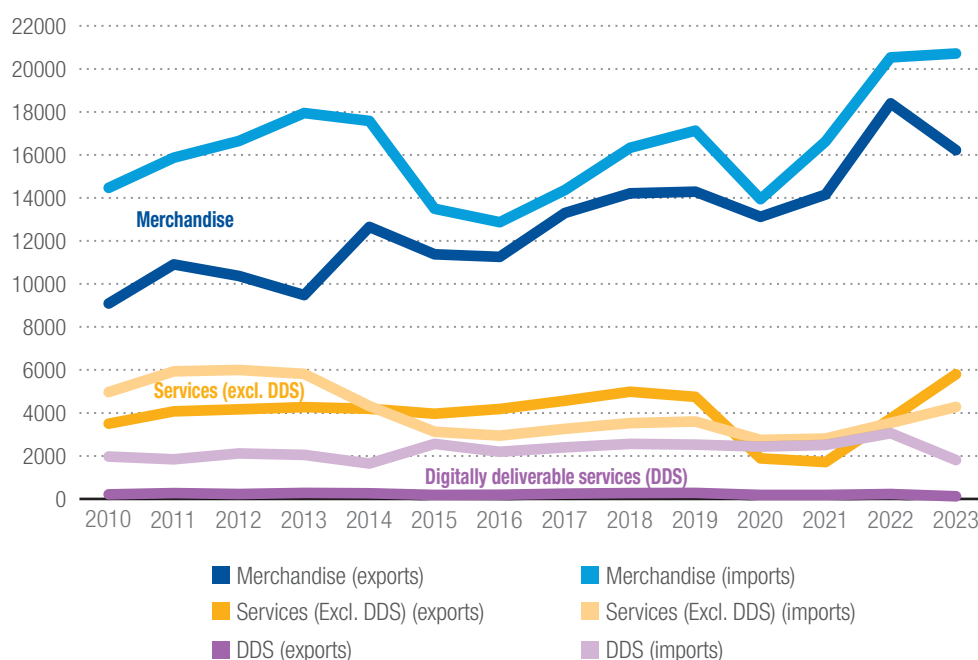


Since 2010, trade in Pacific SIDS has been marked by a persistent imbalance (see Figure IV.4), with significant deficits in goods trade. Imports consistently exceed exports, driven by essential items like fuel, machinery and manufactured products. In contrast, trade in services shows more variability, shaped by the sharp decline and recovery

of tourism revenues following the COVID-19 pandemic. While tourism is vital for some Pacific SIDS' foreign exchange earnings, heavy reliance on it leaves economies vulnerable to external shocks. Although DDS remain a small share of overall trade, they have consistently shown a trade deficit over the past decade (see next section).<sup>30</sup>

**Figure IV.4**  
**Trade by category and flow, Pacific SIDS, 2010–2023**

(\$ millions)



Source: UNCTADstat, accessed 4 November 2024.

Notes: The 2023 data for DDS exports and imports of Pacific SIDS were only available for five countries, i.e. Fiji, Papua New Guinea, Samoa, Solomon Islands and Timor-Leste, as compared to 13 (exports) and 14 countries (imports) in 2022.

## 2. Digitally deliverable services

DDS are services which, by their nature, can be delivered remotely by using computer networks to transfer electronic data.

They are measured by an aggregation of different service categories, including insurance and pension services; financial services; charges for the use of intellectual property, telecommunications, computer

and information services; other business services; and audiovisual and related services (IMF, OECD, WTO, et al., 2023). Examples include software development, cloud computing, online education, telemedicine, digital media and online financial services. DDS differ from services that require physical delivery, like tourism, transportation or construction. They exclude services that are digitally enabled but not digitally delivered, such as online booking of travel or accommodation.

<sup>30</sup> The 2023 data for the trade of DDS were unavailable for many Pacific SIDS, unlike in 2022 (see note in Figure IV.4). Consequently, the observed decrease of deficit in 2023 may not reflect an actual trend if comprehensive data were available.

Trade in DDS across Pacific SIDS exhibited a significant deficit in 2023, both collectively and within individual economies, with Samoa being the exception (see Figure IV.5). In 2023, insurance and pension services represented the largest share of DDS imports for Pacific SIDS, particularly

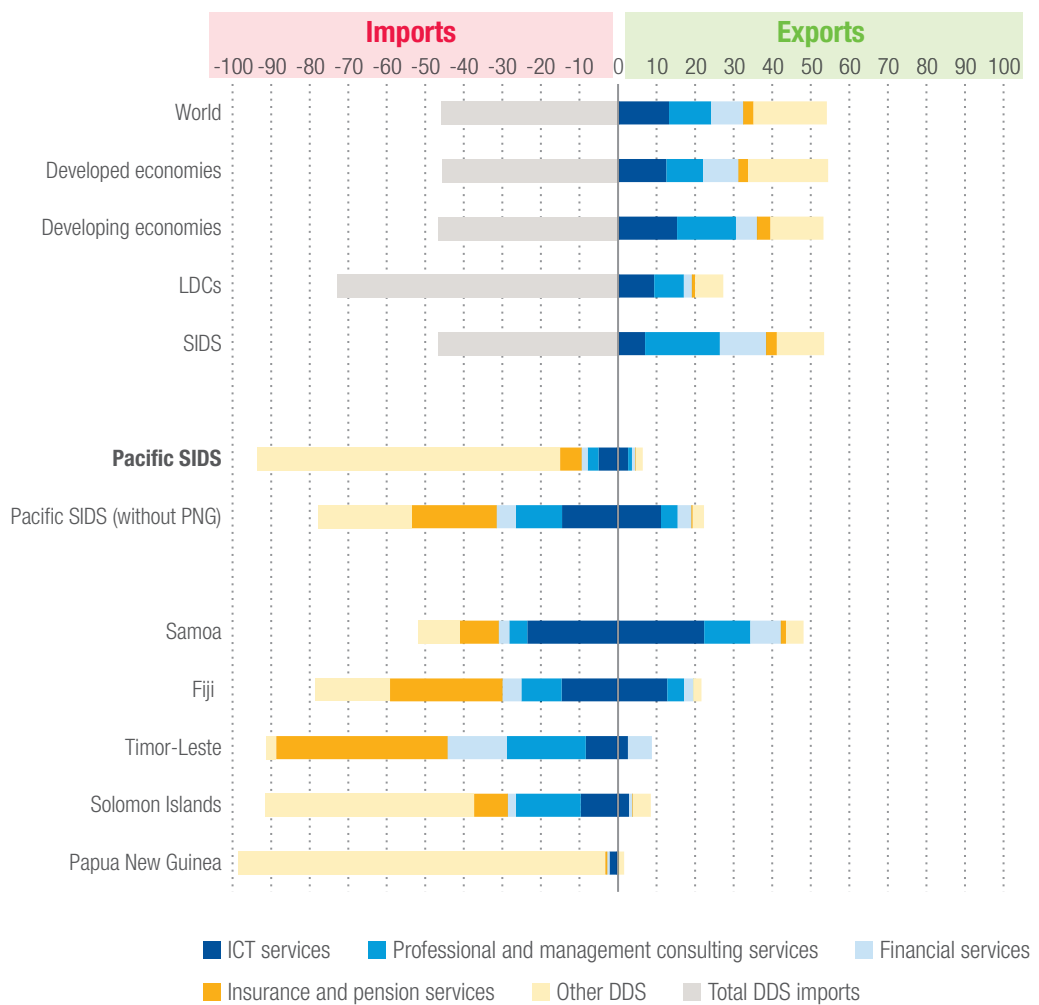
in Timor-Leste and Fiji. ICT services and professional and management consulting significantly contributed to the group's DDS trade deficit, while financial services imports had a lesser impact. On the export side, ICT services dominated, with Samoa and Fiji leading.



**Figure IV.5**

**Trade balance in DDS, by category, selected country groupings and Pacific SIDS, 2023**

(Per cent of DDS trade)



Source: UNCTAD calculations, based on UNCTADstat (updated 30 September 2024), accessed 6 November 2024.

Notes: ICT services refers to telecommunications, computer and information services, Balance-of-Payments Manual, 6th Edition. The analysis includes only countries for which complete DDS export and import data (both totals and components) were available. The data for country groupings for imports by DDS category were not available (except Pacific SIDS, UNCTAD calculations). The weighted average for Pacific SIDS is also presented without Papua New Guinea, whose imports of DDS represented 80 per cent of the group total in 2023.

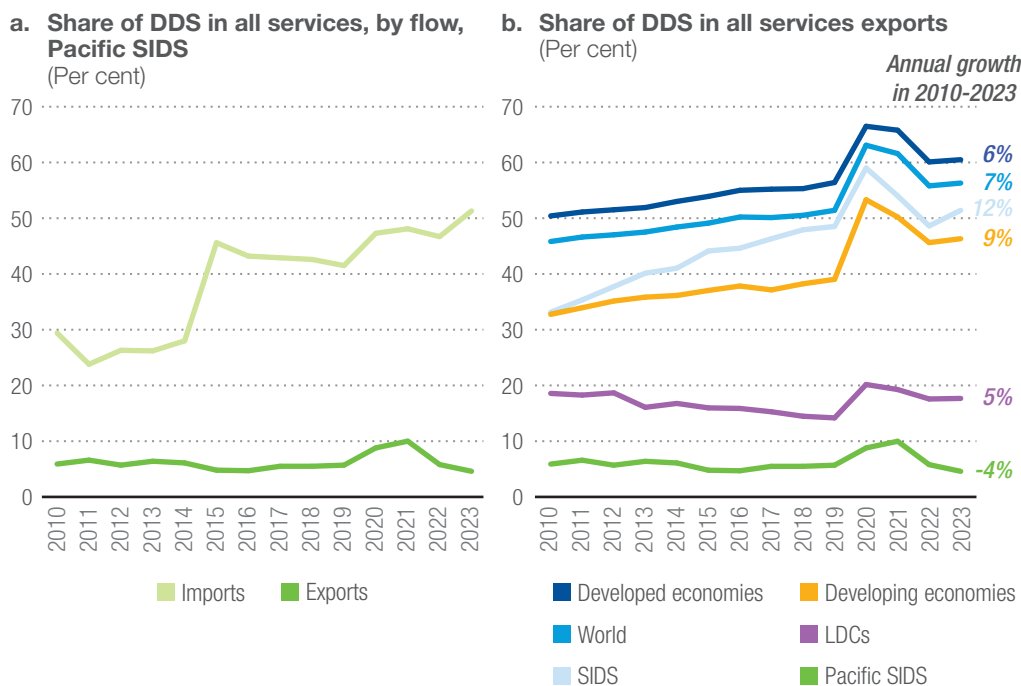




Although professional and management consulting services were notable for these two countries, their export contribution remained minimal for other Pacific SIDS. Outside Papua New Guinea—which accounted for 80 per cent of DDS imports among Pacific SIDS based on 2023 figures—the reliance on ICT services imports is even greater for the remaining countries. Overall, Pacific SIDS have a less balanced and less diversified DDS trade structure compared with other groupings, with a trade deficit exceeding that of both LDCs and all SIDS.

Since 2010, the Pacific SIDS have experienced a widening gap between DDS exports and imports (see Figure IV.6a).<sup>31</sup> The increasing share of DDS in total services imports reflects the region's growing dependence on external digital services, especially driven by the demand for ICT services. In contrast, DDS exports have remained low and stable, aside from a brief increase during the COVID-19 pandemic. The limited growth in DDS exports highlights that the digital economy in Pacific SIDS is nascent, despite the global rise in digitally deliverable trade.

**Figure IV.6**  
**DDS, Pacific SIDS and selected country groupings, 2010–2023**



Source: UNCTAD calculations based on UNCTADstat, accessed 4 November 2024.

Notes: The 2023 data for DDS exports and imports of Pacific SIDS were only available for five countries, i.e. Fiji, Papua New Guinea, Samoa, Solomon Islands and Timor-Leste, as compared to 13 (exports) and 14 (imports) in 2022. Annual growth in 2010–2023 is calculated based on the absolute values of DDS exports.

Indeed, the low share of DDS in Pacific SIDS' exports is striking compared with other country groupings (see Figure IV.6b). Moreover, between 2010 and 2023, both

the absolute value of DDS, and their share in total services exports, declined. While DDS exports in absolute values across all SIDS increased by an average of 12 per cent

<sup>31</sup> The statistics for 2023 concern only Fiji, Papua New Guinea, Samoa, Solomon Islands and Timor-Leste, however they represented together more than 50 per cent and 70 per cent of export and import services in 2022, respectively (UNCTAD, based on the same source as Figure IV.6).

DDS hold promise for Pacific SIDS but the sector is still in its early stages.

during this period, Pacific SIDS saw a 4 per cent decrease.<sup>32</sup> In contrast, LDCs recorded a 5 per cent increase in DDS exports over the same period. Generally speaking, following a surge in DDS exports during the COVID-19 pandemic, most country groupings capitalized on such services, with the share of total services exports surpassing 2019 levels in 2022 and recording further gains in 2023. In contrast, the Pacific SIDS returned to pre-COVID levels in 2022, followed by a further decline. This trend may reflect a continued reliance on traditional service sectors and limited diversification into digital services in the region.

Despite its current low base, DDS holds strategic potential for the Pacific. As some of the most isolated and vulnerable nations globally, Pacific countries face threats from climate change, natural disasters and

external shocks. However, the region also benefits from a young, dynamic population; a rich cultural and natural heritage; and significant potential for innovation and creativity (UNDP, 2019). DDS could help overcome geographical disadvantages by leveraging these strengths (PIFS, 2022a).

Given the early stage of development of the digital economy, rapid global technological advancements and intense international competition, Pacific SIDS will require international support to integrate effectively into the growing DDS sector. BPO presents a promising opportunity, enabling services to be delivered despite geographic isolation. Fiji's progress in developing its BPO sector offers valuable lessons for the region, although challenges in attracting companies persist and may be faced by other Pacific SIDS as well (see Box IV.1).



#### Box IV.1

#### BPO services in the context of DDS in Fiji

BPO involves contracting non-core business functions—such as customer service, accounting, data processing and technical support—to external providers. Increasingly delivered digitally, BPO services allow companies to access global talent and operate across borders, with the global market valued at over \$100 billion in 2019. Dominant suppliers include India, the Philippines, South Africa and Eastern Europe.

In Fiji, BPO has become a vital component of the digital economy, contributing \$100 million annually, with projections to triple within three years. The sector employs 8,000 Fijians and supports economic diversification by leveraging English proficiency, cultural alignment with key markets, and strategic time zone advantages. Fiji is recognized as the leading offshore BPO destination in the Pacific, benefiting from government support through tax incentives and infrastructure development (Investment Fiji, 2023).

Digitalization offers significant growth opportunities for Fiji's BPO sector. Enhanced digital infrastructure, such as undersea cables linking Fiji to Australia and the United States, enables high-quality, reliable service delivery. Rising global demand for DDS, coupled with the 99 per cent literacy rate in Fiji and established BPO reputation, positions the sector to expand beyond traditional markets like Australia and New Zealand to include the United States and Europe. By seizing these opportunities, Pacific BPO firms can attract new clients, diversify service offerings and create specialized roles requiring higher skills and greater value.

However, the Pacific BPO industry faces challenges. Labour costs remain higher than in outsourcing hubs like India and the Philippines, and the limited labour pool constrains scaling. Digitalization demands greater investment in training employees for specialized systems and software. Legislative gaps,

<sup>32</sup> As of 2023, DDS export data was available for only five Pacific SIDS. For context, even in the period of 2010–2022, during which data for 13 countries was included in 2022, Pacific SIDS saw an average DDS export growth of just 0.6 per cent—the lowest growth rate among all country groupings (UNCTAD, based on the same source as Figure IV.6).



particularly in data protection, cybersecurity and intellectual property laws, deter international clients. The industry also faces disruption from AI and automation, which threaten low-skilled roles, underscoring the need to upskill workers for more complex, human-centric tasks. Additionally, retaining talent is a persistent issue, as lucrative opportunities abroad attract skilled workers, particularly in information technology and accounting. Reliable power supply is another critical need for uninterrupted operations.

Addressing these challenges is essential for the Pacific BPO industry to maximize digitalization opportunities, enhance competitiveness and sustain long-term growth.

*Source:* UNCTAD, based on interviews with Ms. Sagufta Janif, Executive Director, Outsource Fiji (7 March 2024) and Mr. Luke Whyley, General Manager, Packleader (6 March 2024).

## B. Digitally ordered trade in goods: Unlocking opportunities, navigating challenges of e-commerce platforms

Digital marketplaces, or digital intermediary platforms, can provide businesses, particularly MSMEs, with new opportunities to participate in digital trade in goods and services (UNCTAD, 2017, 2019, 2023). They enable businesses to expand into international markets without a physical presence, overcoming geographic barriers. They lower transaction costs by streamlining cross-border transactions, reducing traditional trade obstacles such as Customs delays and regulatory compliance, and leveraging standardized processes and digital documentation.

Integrated logistics and payment solutions—including real-time tracking, multi-currency gateways and secure processing systems—enhance trade efficiency and reliability. Data-driven insights allow businesses to tailor offerings to specific

markets, while features like customer reviews and secure transaction guarantees build trust. By supporting regulatory compliance and providing scalable infrastructure, digital platforms facilitate smoother international trade, enabling businesses to grow globally with reduced investment and operational challenges.

The Pacific region is experiencing a gradual increase in the use of digital platforms across various sectors (UNCTAD, 2023b), though their impact on cross-border trade remains limited. While the term ‘platform’ often evokes images of large multinational e-commerce giants managing every aspect of online transactions, the current digital landscape in the Pacific includes a diverse range of platform companies offering various services to support buying and selling (mainly domestically) (see Table IV.1).





**Table IV.1**

**Types of global and local or regional platforms operating in one or more Pacific SIDS**

Digital platforms	Category	Examples of global platforms	Examples of national or regional platforms
<b>Goods e-commerce platforms</b>	Business-to-business (B2B) and business-to-consumer (B2C) marketplaces	Alibaba.com, Amazon, Shopify	BulkShop (Solomon Islands), Bzzmart (Papua New Guinea), Jungle (Papua New Guinea), Klikpei (Solomon Islands), MarkertMeri (Papua New Guinea), Maua (Samoa and Vanuatu), PACIFIKart (New Zealand), Shop Vanuatu, VitiKart (Fiji)
	Social sellers (social media and messaging)	Facebook, Facebook Messenger, Instagram, LinkedIn, TikTok, Viber, WeChat, WhatsApp, X	
<b>Services e-commerce platforms</b>	Tourism	Agoda, Airbnb, Booking.com, Expedia, Skyscanner	
	Information reviews	Facebook Reviews, Google Reviews, Tripadvisor	
	Business services and hires	Clickworker, Fiverr, Freelancer, Matchboard, Outsource Accelerator, Upwork	
	Delivery	DHL, FedEx	
	Food Delivery	Menulog, Uber Eats,	Seki Eats (Samoa), Takeaway (Tonga), Talofa Eats (American Samoa)
	Entertainment	Amazon Prime Video, Disney+, iTunes, Netflix, Spotify, YouTube	TicketMax (Fiji)
	Education	Coursera, Udacity, Udemy	mVuli Academy (Fiji)
	Search	Baidu, Bing, Google, Yahoo	
	Advertising	Google Ads, Facebook Ads	
	Apps and software	Apple App Store, Google Play	
<b>Digital payment platforms</b>	Mobile wallet	AliPay (Fiji), PayPal, WeChat Pay (Fiji)	Cell Moni (Papua New Guinea), EziPei (Solomon Islands), iumiCash (Samoa), M-PAiSA (Fiji), MiCash (Papua New Guinea), MyCash (Fiji)
	Bank and credit cards	Mastercard, UnionPay, Visa	
	Mobile banking	ANZ Banking Group, Westpac, Bred Bank	Bank South Pacific (Cook Islands, Fiji, Papua New Guinea, Samoa, Solomon Islands, Tonga, Vanuatu), Kina Bank (Papua New Guinea), Pan Oceanic Bank (Solomon Islands)
	Remittances	Remitly, Ria Money Transfer, Western Union, WorldRemit	Ave Pa'anga Pau (from New Zealand to Tonga), KlickEx Pacific (from Australia or New Zealand to Cook Islands, Fiji, Papua New Guinea, Samoa, Tonga and Vanuatu), Rocket Remit (from Australia to Cook Islands, Fiji, Papua New Guinea, Samoa, Tonga and Vanuatu)

Source: UNCTAD, updated from UNCTAD (2023).

Note: WeChat and Alipay are available to customers that already have accounts from China.



Goods e-commerce platforms in the region are still in their early stages (UNCTAD, 2023b), with few local options available, mainly in more developed countries like Fiji and Samoa. Local e-commerce and social selling platforms primarily focus on national markets and have not ventured into cross-border trade significantly. There are no global B2C e-commerce platforms active in the region that facilitate MSME exports, although Alibaba has made initial strides in B2B e-commerce. Platforms like Amazon provide an alternative for reaching overseas customers. However, many Pacific businesses face challenges in meeting Amazon’s compliance requirements to access and utilize the platform effectively. Local e-commerce platforms like Maua and VitiKart, along with online retail shops (web shops), are seeking to expand their reach by offering niche products to overseas markets. Concerning the tourism sector, the main services sector in the Pacific,

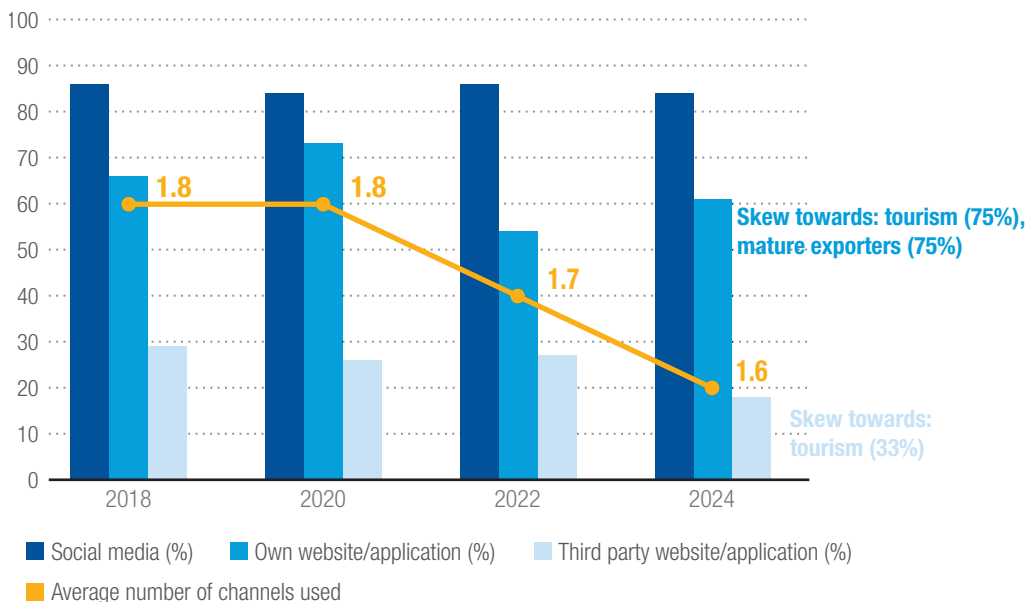
some travel platforms are operational and facilitate cross-border bookings.

In this context, it should be noted that social media and messaging platforms still play an important role in e-commerce in the Pacific (UNCTAD, 2023). Platforms like Facebook are widely used for informal e-commerce, allowing MSMEs to connect with buyers locally and regionally. These ‘social sellers’ often operate without formal e-commerce infrastructure, using social media as their primary marketing and sales channel. A recent Pacific Trade Invest Australia Pacific Islands survey (2024) found the proportion of businesses generating revenue online continues to grow, with most export revenue by Pacific businesses considered to be ‘generated’ through social media platforms, even if the actual transactions are not taking place on these platforms (see Figure IV.7). This is particularly the case for trade in goods.

While social media dominates e-commerce, platforms are striving to overcome challenges and expand.

➤ **Figure IV.7**

**Use of online channels for export revenue in the Pacific, selected years**



Source: UNCTAD, based on Pacific Trade Invest Australia (2024).

Notes: The respondents were exporters generating revenue online. The number of respondents per year is: 133 (2018), 168 (2020), 145 (2022) and 192 (2024). The question of the survey was: ‘Which of the following online channels does your business use to generate export revenue?’

## 1. Global platforms: Unrealized potential

Global e-commerce retail platforms have a limited presence in the Pacific region, largely due to the challenges they face in establishing operations. For example, Alibaba has only recently started developing

B2B services in the region (see Box IV.2), while Amazon, despite being a viable B2C platform, imposes stringent compliance requirements that many Pacific businesses struggle to meet, such as access to credit cards. Amazon's limited regional operations, with the nearest fulfilment centres in Australia, further restrict accessibility for local businesses.



### Box IV.2 Alibaba ventures into the Pacific

One of the few global platforms currently operating in the Pacific is Alibaba.com, the B2B service of Alibaba Group. The platform connects sellers and buyers of various goods across different markets. Entering the Pacific region has required the platform to address many challenges, such as the small market size, the high costs of business development and the low level of export readiness among local MSMEs. Typically, global e-commerce marketplaces like those embedded in the Alibaba Group require that firms using their services be prepared to manage significant order sizes with consistency and speed. The costs to the firm working with Alibaba's B2C platforms can therefore be substantial, particularly for smaller companies.

To overcome these challenges, the Alibaba Group has adopted a strategy that leverages its experience and expertise in helping sellers from emerging markets region-wide to achieve sales through its B2B platform. Contrary to B2C e-commerce platforms, which require substantial investment in building brand awareness to compete with other global sellers, selling through B2B is less costly and thus sometimes more approachable for MSMEs that lack financial resources and technical capacity in marketing. Business buyers may also be more accommodating of longer delivery times from the Pacific. Moreover, many of the Pacific sellers are also a good fit to product categories commonly sourced through B2B platforms, such as food and agriculture, beauty and personal care, and apparel.

Recognizing that Pacific MSMEs have limited financial resources, Alibaba Group partners with either governments or multinational agencies to help fund Pacific small sellers into a two-year programme that provides comprehensive support. The support programme includes use of the platform tools to respond to enquiries, obtain support from Alibaba service partners to list and price their products, look for requests for quotations, and conduct digital marketing.

In the South Pacific, Alibaba works with the Market Development Facility, which is funded by Australia and co-funded by New Zealand to build MSME digital capability to export via e-commerce. The pilot programme has launched in Fiji and will be rolled out in other Pacific Islands such as Papua New Guinea, Samoa, Tonga and Vanuatu. Through this programme, the Alibaba Group aims to empower Pacific sellers to access new markets and opportunities, increase their income and employment, and contribute to the economic development of the region. The Group also hopes to encourage the development of a local ecosystem of digital services providers that can offer their services to MSMEs selling on Alibaba.com once the programme has scaled up.

*Source:* UNCTAD, based on an interview with Pier Smulder, General Manager Australia and New Zealand, Alibaba Group (15 February 2024).



Interviews conducted for this report highlight several challenges limiting the engagement of global e-commerce platforms in the Pacific, including a lack of scale and sophistication among Pacific brands. As noted in the trade analysis of Pacific SIDS, merchandise exports feature a low share of manufactured goods, which are commonly traded on retail platforms. Many businesses also lack essential digital infrastructure, such as automated inventory management and digital payment solutions, hindering their ability to compete effectively. This digital gap highlights the broader challenge of integrating Pacific brands into the complex supply chains of large-scale consumer marketplaces.

Access to digital payment systems and formal banking solutions is a significant challenge for Pacific businesses aiming to participate in global e-commerce platforms. Many MSMEs lack bank accounts or credit cards required by platforms like Amazon and Alibaba. While local mobile payment options, such as M-PAiSA, enable transactions through social media channels like Facebook and WhatsApp, they do not meet the formal payment requirements of major platforms. Limited access to online banking also restricts alternatives.

High costs and skill shortages further hinder participation in e-commerce. Substantial investments in equipment, digital marketing, video production and customer acquisition are often prohibitive for MSMEs. Advanced practices like live streaming and sophisticated fulfilment models, essential for success in developed markets, demand resources and expertise beyond the reach of many Pacific businesses.

Additionally, Pacific brands face challenges with export readiness. Many businesses lack the capacity to handle large orders or maintain reliable supply chains, crucial for meeting international consumer expectations. These constraints suggest that focusing on B2B platforms could

better align with the current capabilities of Pacific MSMEs, offering a more sustainable and achievable pathway to participate in global digital trade.

Remoteness poses significant challenges for goods-related e-commerce in the Pacific. Following the pandemic, reduced or cancelled flight routes have further limited access for businesses, particularly in rural or remote islands. Interviews for this report reveal that high costs and unreliable shipping erode the price advantage and customer satisfaction of Pacific products. The region's imbalanced cargo demand, with imports far exceeding exports (see Figures IV.8a and b), hinders air and sea freight operators from utilizing cargo space efficiently, making competitive shipping rates difficult. Additionally, long and unpredictable shipping times, caused by limited transport frequency and weather conditions, further complicate e-commerce logistics and the development of regional networks.

Shipping costs for Pacific SIDS, measured as freight costs relative to the value of traded goods, are the highest globally and rose for both air and sea transport between 2016 and 2021 (see Figure IV.9). Significant rate increases, particularly after the COVID-19 pandemic, highlight the logistical challenges stemming from geographic isolation, limited shipping options and unpredictable transport conditions. These issues impact e-commerce more acutely than traditional trade, as e-commerce depends on frequent, smaller shipments and fast delivery, unlike traditional trade's larger, less time-sensitive shipments. Pacific-based exporters often rely on third-party logistics to meet the requirements of platforms like Amazon, adding significant costs and reducing feasibility. Consequently, global e-commerce platforms are discouraged from operating in the Pacific, where small, dispersed populations and high investment requirements offer limited returns.

Efforts to overcome e-commerce challenges in the Pacific are beginning, with a focus on B2B models.

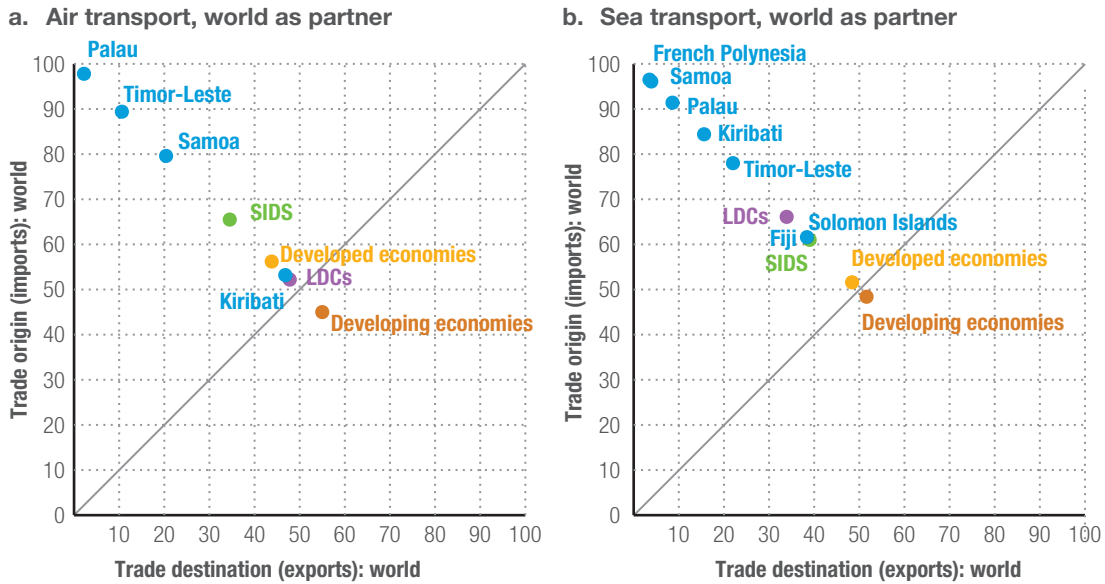




**Figure IV.8**

**Trade origin and destination, by transport mode and weight, selected country groupings and Pacific SIDS**

(Per cent of total trade weight)



Source: UNCTAD, based on UNCTADstat (2024).

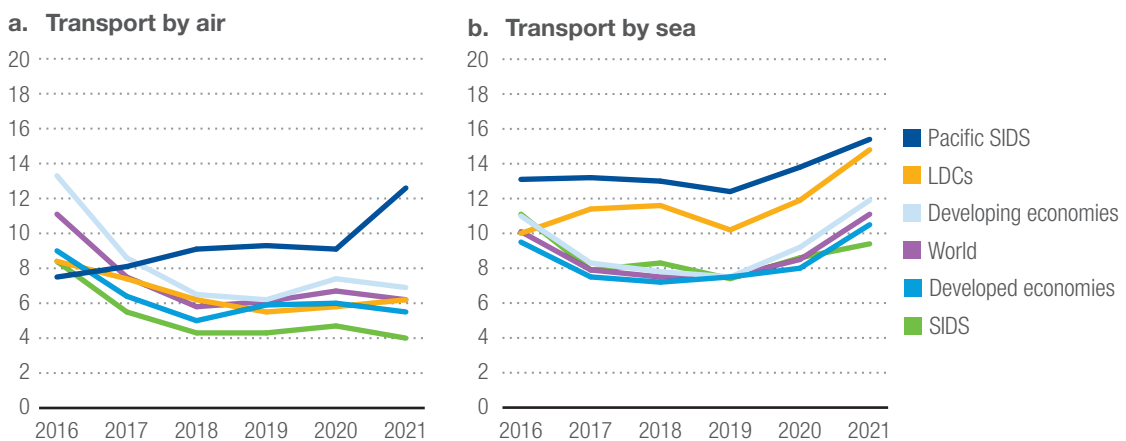
Notes: The weight of the internationally traded goods net of packaging (kilograms). The trade in goods, measured by weight, for countries in the top left of the chart is predominantly driven by imports. In contrast, for countries positioned closer to the centre, trade in goods is more evenly distributed between imports and exports, indicating a more balanced demand for cargo. Country groups are those of the source.



**Figure IV.9**

**Ad-valorem freight rates, by transport mode, selected country groupings and Pacific SIDS, 2016–2021**

(Percentage)



Source: UNCTAD calculations, based on UNCTADstat (2024).

Notes: The ad-valorem freight rate represents transport expenditures as a percentage of the free-on-board value of transported goods. Sea transport data were available for all Pacific SIDS, while air transport data were limited to Kiribati, Federated States of Micronesia, Nauru, Niue, Northern Mariana Islands, Palau, Papua New Guinea, Samoa, Timor-Leste, Tuvalu and Vanuatu.





## 2. Local platforms: Building the tools for intraregional digital trade?

Where global e-commerce retail platforms would especially provide an opportunity to export outside of the Pacific region, local e-commerce platforms could potentially provide opportunities for cross-border trade within the region. Local e-commerce retail platforms in the Pacific also face challenges, primarily stemming from physical infrastructure deficiencies. The lack of standardized street addresses and accurate mapping data poses severe logistical difficulties, complicating last-mile delivery of goods and services. In many Pacific Island nations, customary land ownership further complicates the creation of a formal addressing system, which is essential for the efficient operation of goods-related e-commerce platforms.<sup>33</sup> However, some platform operators have found innovative solutions to address some of these challenges (see Box IV.3).

Moreover, the region's limited digital infrastructure, including the scarcity of integrated payment systems and the high cost of essential technologies like cloud hosting and one-time password services, hinder the development and profitability of e-commerce platforms in the Pacific.<sup>34</sup> Maintaining reliable Internet connectivity is also costly but crucial to prevent service interruptions. Additionally, local businesses face challenges like double taxation and currency fluctuations, as they often need to register in foreign countries, like Australia, where the necessary banking infrastructure is available.

Market size and vendor readiness also challenge local e-commerce platforms. The

small population and limited technology adoption in Pacific Island nations constrain the customer base, making it difficult to achieve the scale required for financial viability. Similar to global platforms, vendors often face challenges with digital literacy and managing online product listings, resulting in inconsistencies and poor user experiences. Continuous training and support are necessary but strain the resources of these platforms.

Scalability and sustainability beyond individual countries add to the difficulties. High operational costs and small market sizes hinder regional expansion, with platforms needing to overcome infrastructure and logistical barriers in each country. These challenges collectively contribute to the slow uptake of international e-commerce in the Pacific.

## 3. Online retail shops: Balancing opportunities and barriers

Interviews conducted for this report highlight several opportunities that online retail shops can offer Pacific businesses, including increased global market visibility, niche market appeal, resilience, scalability, cost efficiency and expanded product offerings, particularly in the context of exporting.<sup>35</sup> Online retail shops enable Pacific SIDS businesses to access international markets. This broad visibility is crucial for exporting, as it allows businesses like Vaoala Vanilla (see Box IV.4) and Eau Des Iles (see Box IV.5) to reach and engage with international buyers directly, facilitating trade with overseas markets including Australia, the United States and the Caribbean, or scale exports within the region.

<sup>33</sup> Customary land ownership in many Pacific Island nations complicates the creation of a formal addressing system because land is often communally owned, passed down through generations, and boundaries may not be officially registered or clearly defined. This lack of formal land registration makes it difficult to assign standard postal addresses, which are crucial for logistics, deliveries and the efficient functioning of e-commerce platforms.

<sup>34</sup> One-time password services provide an additional layer of security for activities like online payments and account verification by sending a unique code to the user's device. However, in the Pacific region, limited digital infrastructure and high costs make these services less accessible or reliable. This can lead to difficulties in processing secure online transactions, undermining trust in e-commerce platforms and restricting both businesses' and consumers' ability to engage in digital trade effectively.

<sup>35</sup> Web shops referenced here include those built on platforms like Shopify or similar e-commerce solutions.



### Box IV.3

#### **Sky Eye and Maua: Local solutions for e-commerce challenges in the Pacific**

Sky Eye Pacific is a family-run geospatial technology company set up in 2016. It operates in Samoa, Tonga and Vanuatu to deliver innovative technological solutions to address unique challenges in Pacific Island states. The company offers vehicle tracking, geospatial data services and an e-commerce platform (Maua) to serve communities that lack official addressing systems.

According to Sam Salli, CEO and co-founder of Sky Eye Pacific, a lot of software and platform solutions used in developed countries come with technological or infrastructure restrictions. For instance, many available vehicle tracking products run on Google maps and thus require input of physical addresses; however, in many parts of the Pacific, absence of a physical address reduces the accuracy of such geospatial software products. Moreover, it may prove difficult for Pacific Island governments to develop official addresses for customary land owned by the people.

To mitigate related challenges in e-commerce deliveries, Sky Eye Pacific created its own street address system by assigning and verifying street addresses for first-time buyers on their Maua e-commerce platform. Their database can be made available as an application programming interface that can be integrated by other service providers. Maua is available in both mobile application and desktop versions in Samoa and Vanuatu.

Due to a lack of online payment methods in the Pacific that could be integrated on their platform, the company adopted the Stripe payment platform (Australia) to accept payments from the diaspora community in Australia and New Zealand, and relies on an Australian bank to settle payments to sellers in the Pacific through mobile wallets. While the Maua platform is designed for domestic e-commerce transactions, the small local population in Pacific Island states also pushed Sky Eye Pacific to seek customers located overseas that wished to send gifts or groceries to relatives back home. In contrast to larger platforms, Sky Eye Pacific settles payments to sellers daily to ensure that these small businesses have sufficient cashflow to sustain business operations.

While circumventing e-payment challenges by registering the Maua platform in Australia and establishing a bank account there because the local banks in Samoa and Vanuatu do not support mobile payment services, the business must pay taxes to the Australian government and pay value added tax/goods and services tax to the Samoan Government for each transaction. This implies that without a functioning and affordable cross-border e-payments system in place to send and receive payments from overseas, businesses like Maua in Pacific Island states often need to rely on offshore banking and financial services, and thus need to pay transaction fees to overseas platforms, as well as taxes in the overseas countries where their businesses are incorporated.

Despite the workarounds made by Sky Eye Pacific to develop their in-house software systems, the company incurs substantial operational costs for purchases of foreign services. This includes Amazon Web Services to host data in overseas servers and Twilio to generate a one-time password for mobile users to verify their identity. Such services supplied to the Pacific can be more costly than elsewhere in the world given its limited digital infrastructure, small market size and reliance on international service providers.

For digital service suppliers like Sky Eye Pacific, network connectivity and reliability are essential. To ensure network reliability for the digital services it supplies, the company has to subscribe to two local telecommunications service providers, which adds costs.

*Source:* UNCTAD, based on an interview with Sam Salli, CEO and Co-founder of Sky Eye Pacific (16 February 2024).



Operating an online retail shop offers businesses in Pacific SIDS several advantages, particularly reducing overhead costs tied to physical storefronts. For example, Vaoala Vanilla has lowered operational expenses by focusing on online exports, while Eau Des Iles has managed high shipping costs through selective online sales. Online retail also enables businesses to start small and scale operations incrementally, reducing risks and effectively managing export volumes as demand grows.

Pacific SIDS businesses often produce unique cultural and environmentally rooted products, appealing to international niche markets that value authenticity and exclusivity. Online platforms help maintain brand control and attract customers seeking premium products. For instance, Rise Beyond the Reef empowers rural indigenous women in Fiji to produce handmade goods sold through expanded e-commerce channels, improving local livelihoods while providing global access via multiple stores and diverse payment options.<sup>36</sup>



#### Box IV.4

#### Vaoala Vanilla: Onboarding e-commerce to increase sales

Vaoala Vanilla is a small business in Samoa selling organic vanilla products—cured vanilla beans, vanilla syrup and vanilla extract—made from beans grown locally. Shelley Burich, the founder, started growing vanilla plants as a hobby 18 years ago and it eventually grew into a business exporting to overseas spice retailers.

When borders were closed at the height of the COVID-19 pandemic, local product sales declined, and Shelley knew that she needed to get her products to overseas markets. She attended a nine-week online course to learn how to build a website and successfully launched one for Vaoala Vanilla using Shopify. Shelley also actively marketed her products on social media and created short videos (Facebook reels) to engage viewers/followers. Vaoala Vanilla's e-commerce website attracted new overseas clients and additional spice retailers, and this resulted in sales worldwide, for instance to Australia, Canada, Japan, New Zealand, the United States and Europe. Most of Vaoala Vanilla's sales come from Australia and New Zealand due to geographic proximity.

To export vacuum-packed vanilla beans overseas, Shelley applied for phytosanitary certification from the Samoan authority to be included with her product shipment to meet the compliance requirements of import destinations. Shelley ships out her products via Samoa Post express mail service, which allows shipments to be tracked.

Vaoala Vanilla is currently the sole commercial producer of vanilla in Samoa because it requires substantial investment and time to grow and harvest the beans (the first bean harvest takes four years). Due to adverse weather events in the Pacific, Shelley's farm has at times been hit by cyclones that wiped out her entire harvest. Shelley has been working with the local farming community to provide mentorship for growing vanilla plants and increase production of vanilla beans in Samoa to be sold through e-commerce. Shelley is also helping other Samoan entrepreneurs build their e-commerce websites by leveraging her experience gained from online e-commerce courses.

*Source:* UNCTAD, based on an interview with Shelley Burich, founder of Vaoala Vanilla (5 March 2024).

<sup>36</sup> See also <https://risebeyondthereef.org/>.





## Box IV.5

### Eau Des Iles: Challenges of a Pacific MSME

Eau Des Iles is a niche perfumery company based in Vanuatu selling locally made fragrances, perfumes and botanical oils. Products are retailed in Vanuatu and Fiji and are also available through e-commerce on their website. Selling through cross-border e-commerce is challenging for Eau Des Iles due to a range of issues—finance, payments and logistics.

During Eau Des Iles' start-up phase, Lee-Anne Sackett, the founder and creative director, found securing low-cost and timely financing to be extremely difficult because interest rates charged by banks could be as high as 15–20 per cent. While local government agencies provide grants for small businesses, disbursement requires waiting time.

While setting up Eau Des Iles' e-commerce website and attempting to integrate online payments, Lee-Anne found that there are limited online payment options because only one local bank provides an online payment gateway. Lee-Anne decided to adopt PayPal out of Australia for online payments on the website due to the long waiting time for the bank to respond to her enquiry.

Shipping fragrances is another challenge. International express carriers have high compliance requirements for carrying flammable substances like perfumes (which contain alcohol). Meanwhile, sea freight takes too long and is not conducive to B2C sales. Sea freight routes have also been disrupted by the pandemic, which further prolongs shipping time out of the Pacific.

To tackle the challenges of operating through the Pacific Islands, Lee-Anne is considering establishing an entity in Australia to gain access to international payment gateway services that are not available in Vanuatu and tap into a wider range of freight options and faster shipping time from Australia to boost her e-commerce sales.

*Source:* UNCTAD, based on an interview with Ms. Lee-Anne Sackett, Founder and Creative Director of Eau Des Iles (1 March 2024).

Online shops also allow businesses to diversify exportable product lines, broadening offerings and increasing revenue. Vaoala Vanilla, for example, exports both vanilla beans and value added products like extracts, while Eau Des Iles leverages its platform to expand product diversity and market reach.

Additionally, online retail provides resilience during disruptions or economic transitions. During the COVID-19 pandemic, businesses like Vaoala Vanilla sustained exports despite interruptions to physical sales, while Fuko Fishing Company adapted its focus from fishing to tourism by offering related products online. These platforms ensure continuity and adaptability, helping businesses navigate changing market conditions.

While online retail shops offer opportunities for Pacific SIDS businesses, they also present significant challenges. One of the primary issues is the high cost of shipping, which substantially raises the overall cost of goods sold. Logistical complications, such as uncertified local couriers, restrict the ability to ship certain products, like perfumes with high alcohol content. Regulatory hurdles, including complex Customs procedures and certification requirements (e.g. phytosanitary certificates) further complicate exports. Limited access to capital adds to these difficulties, making it hard for businesses to scale or invest in the infrastructure needed to support exports.

The digitalization of trade procedures offers potential solutions to overcome these barriers.<sup>37</sup> Technologies such as

<sup>37</sup> <https://unctad.org/news/advancing-digital-transformation-global-insights-digitalization-trade-procedures>.



blockchain, AI and digital payment gateways can streamline cross-border transactions, enhance transparency and reduce delays. Implementing supportive digital trade facilitation measures could create a more efficient environment for MSMEs in Pacific SIDS to expand their operations and access international markets.

Interviews conducted for this report highlight additional challenges related to the digitalization of trade through online retail shops, beyond connectivity issues (see chapter II). One major obstacle is the limitation of payment gateway options. Many international systems, like PayPal and major credit card processors, are inaccessible due to local banking regulations and infrastructural constraints. For instance, Shelley Burich of Vaoala Vanilla had to route payments through a New Zealand bank account because her Samoan account was incompatible with Shopify, adding inefficiency and complexity to her

operations. Such limitations deter customers expecting seamless payment options and complicate financial management for small businesses reliant on third-party providers.

Another critical issue is the digital literacy gap among entrepreneurs and employees in Pacific SIDS. Business owners like Shelley Burich and Lee-Anne Sackett of Eau Des Iles have had to self-learn e-commerce and digital marketing due to a lack of formal training and support. This skills gap limits their ability to fully leverage web shops, hindering efforts to attract international customers, optimize online presence and use analytics effectively. Moreover, inadequate technical expertise in website security, inventory management and user experience optimization can result in suboptimal online shop performance and missed global opportunities. Addressing these gaps is essential to help businesses maximize their potential in the global digital economy.

Successful online retail must address logistics, costs and digital skills gaps.

## C. Trade in services: Success and ongoing challenges of tourism platforms

### 1. The role of platforms in the tourism sector

Tourism is vital for many Pacific SIDS, contributing significantly to GDP, employment and export revenue. Indeed, international tourism receipts (travel and passenger transport) accounted for an average of 60 per cent of Pacific SIDS' services exports in 2023, outperforming all other country groupings and remaining at a similar level to that before the COVID-19 crisis (see Figure IV.10). However, at the individual country level, French Polynesia exceeded its 2019 levels, while Samoa and

Kiribati returned to pre-pandemic levels. In contrast, Fiji, Vanuatu, the Solomon Islands, Tuvalu and Tonga remain below their 2019 levels. For some Pacific SIDS, the loss in export revenues has been considerable, underscoring the risks associated with reliance on tourism for export earnings.<sup>38</sup>

In 2019, tourism generated \$2.4 billion in revenue, accounting for over 10 per cent of GDP in seven of these countries, and directly employed around 71,000 people in formal jobs, with many more supported through informal and indirect employment. For instance, that year Fiji, Palau, Samoa and Vanuatu had the highest tourism receipts

<sup>38</sup> In the case of Fiji, international tourism receipts increased slightly in value (current \$) between 2019 and 2023; however, their share of total services exports declined as other exports grew more important.



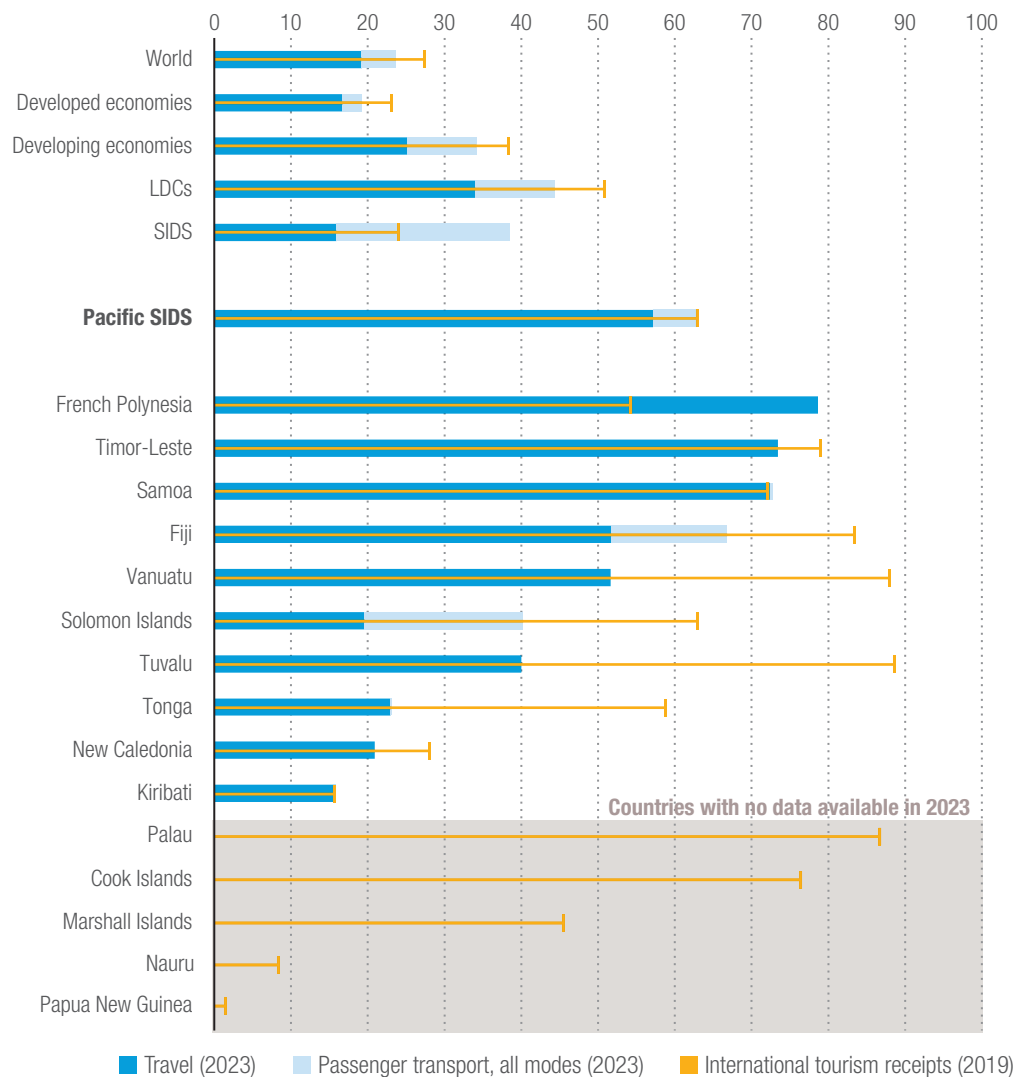
relative to GDP, ranging between 25 and 35 per cent, making them among the most tourism-dependent countries in the world. In contrast, Papua New Guinea and Kiribati were significantly less reliant on the sector

(World Bank, 2022). However, the pandemic had a severe impact on the tourism sector in the Pacific, as evidenced by the drastic decline in overseas visitor arrivals from nearly 5 million in 2019 to under 300,000 in 2021.<sup>39</sup>



**Figure IV.10**

**International tourism receipts as share of total services exports, by product, selected country groupings, Pacific SIDS and years**  
(Per cent)



Source: UNCTAD, based on UNCTADstat (updated 29 July 2024), accessed 19 September 2024.

Notes: International tourism receipts comprise the sum of travel and passenger transport across all modes. Travel includes expenditures on accommodation, food and beverages, local transportation, recreational and cultural services, souvenirs, personal care items and other goods, excluding international passenger transport services. Passenger transport encompasses air, sea and other transportation modes such as rail, road and inland waterways. For Pacific SIDS, the group's weighted average reflects available data for travel, passenger transport, or both in 2019 and 2023, respectively.

<sup>39</sup> Pacific Data Hub, available at [https://sdd.spc.int/dataset/df\\_overseas\\_visitors](https://sdd.spc.int/dataset/df_overseas_visitors) (accessed 21 August 2024).



Digitalization has become increasingly vital to the tourism industry, enabling adaptation to shifting consumer preferences and enhancing resilience. Hotels use social media and online platforms to advertise and sell rooms, while tourists book and pay for accommodation online. Shuttle operators use mobile wallets for fuel payments, and restaurants procure ingredients via e-commerce. The global acceleration of digital adoption, as noted by ADB and the World Tourism Organization (2022), has allowed the tourism sector to diversify markets, attract new customer segments, and foster competitiveness and innovation.

Booking accommodation online is now the norm in global tourism, transforming the market by making it more accessible and diverse. Platforms like Airbnb and Booking.com empower smaller venues, including private residences, to compete with traditional hotels and resorts. This inclusivity benefits small businesses and hosts, often owned by women and minority groups, contributing to a more dynamic and equitable industry.

Digital platforms have extended their impact beyond accommodation to include a wide range of tourist activities, such as tours, excursions and experiences. Platforms like Expedia allow companies to list services across multiple channels, dramatically increasing visibility. Smaller operators benefit from cost-effective exposure, as booking platforms typically charge fees only upon successful bookings. Enhanced tools, like channel managers, help operators synchronize listings across platforms, ensuring consistency and maximizing reach.

The Pacific tourism sector holds significant growth potential through the use of online platforms for promoting and booking additional travel services. Platforms like Expedia's 'Things to Do' category provide access to activities such as cultural experiences, water sports and outdoor adventures. While major destinations like Fiji and French Polynesia have substantial

listings, many other Pacific locations remain underrepresented (see Table IV.2). Expanding the range of online offerings, such as cooking classes, photography tours and sunset cruises, could boost visibility and attract more tourists planning their trips in advance. This integration aligns with the trend of travellers seeking to organize comprehensive itineraries before arrival, enhancing the visibility of local experiences and driving sector growth.

Online customer reviews play a vital role in the digital tourism landscape, particularly for small operators aiming to stand out in competitive markets. Positive reviews help showcase the high service standards of smaller businesses, build trust with potential customers, and drive traffic to lesser-known venues. This is particularly relevant in the Pacific, where destinations like American Samoa, the Federated States of Micronesia and Tuvalu have limited representation on major online travel platforms. Platforms like Tripadvisor.com provide valuable opportunities by ranking companies based on customer reviews, enhancing visibility and facilitating informed choices through booking and contact options. These platforms often serve as the first online presence for small enterprises, helping them attract customers and increase bookings. However, a review of these countries' Tripadvisor.com pages reveals significant room for growth, with listings still in early development compared with more established tourism markets.

For smaller operators in these underrepresented markets, encouraging satisfied customers to leave reviews can be a powerful, cost-effective marketing strategy. As online reviews increasingly shape consumer choices, they offer an opportunity for small businesses to compete globally, demonstrating service quality and building customer loyalty. To support this effort, training in basic ICT skills to establish and maintain a presence on digital platforms like Tripadvisor.com could help small tourism businesses improve visibility and drive digital transformation in the Pacific tourism sector.

Digital tools and platforms are transforming Pacific tourism, enabling visibility, bookings and global competitiveness.





**Table IV.2**

**Number of accommodations and tourist listings on popular travel platforms, 2024**

	Accommodations on Airbnb	Accommodations on Booking.com	Tourist activities on Agoda and Expedia	Number of overseas visitors (thousands), pre-Covid-19 and latest available	
				2019	2022
<b>French Polynesia</b>	1 000	1 001	384	236.6	218.8
<b>Fiji</b>	1 000	391	441	968.9	652.2
<b>Cook Islands</b>	879	199	41	171.7	113.6
<b>New Caledonia</b>	625	84	59	474.4	139.2
<b>Vanuatu</b>	310	119	131	256.0	25.4
<b>Guam</b>	274	44	46	1 666.7	328.4
<b>Northern Mariana Islands</b>	230	41	6	487.0	96.0
<b>Samoa</b>	224	48	8	180.9	50.6
<b>Papua New Guinea</b>	196	31	10	211.0	69.4
<b>Tonga</b>	100	33	37	94.0	..
<b>Solomon Islands</b>	88	21	3	28.9	..
<b>Palau</b>	86	221	5	89.7	9.2
<b>Micronesia (Fed. States of)</b>	30	0	0	18.0	..
<b>Timor-Leste</b>	30	19	4	..	..
<b>American Samoa</b>	16	1	0	58.7	..
<b>Marshall Islands</b>	16	1	0	6.1	1.3
<b>Niue</b>	13	3	0	10.2	..
<b>Tuvalu</b>	5	0	0	3.6	0.3
<b>Kiribati</b>	2	0	0	12.0	1.8
<b>Nauru</b>	1	1	0	..	..

Source: UNCTAD, based on searches on Airbnb, Booking.com, Agoda and Expedia for accommodations and tourist activities. The data for the number of visitors are from Pacific Data Hub (accessed 22 February 2024).

Notes: Tourist activities include tours, transport, land experiences, food, and water activities. The total count reflects unique listings, as some listings may overlap across categories, such as a tour package that includes snorkelling and lunch.

Online payments are a cornerstone of the digital tourism ecosystem, as travellers increasingly prefer completing bookings online. Secure and convenient payment options have become essential, with platforms like Expedia and Airbnb offering integrated gateways for immediate payments and instant confirmations. This capability is

particularly beneficial for smaller businesses in the Pacific, helping them secure bookings and manage cash flow more effectively by receiving payments months in advance.

Additionally, automated payment systems simplify financial management for service providers. For example,





Expedia directly deposits payments into vendor bank accounts on the first day of the month, eliminating manual invoicing. This automation enhances cash flow management and builds trust by ensuring secure and reliable transactions for both customers and providers.

## 2. Challenges of digitalization

The growth of online platforms for promoting and booking travel services in Pacific SIDS presents significant opportunities but also highlights challenges for local tourism providers. Small businesses often struggle with the rapid digitalization of tourism services, making it difficult to fully capitalize on these platforms (see Box IV.6).

### Accessing booking platforms

While listing on online platforms is often free initially, small businesses must meet various requirements, such as providing a business licence or tax identification number. These requirements pose challenges, particularly for informal operators like independent tour guides. Insurance coverage is another obstacle, with platforms like Expedia requiring minimum liability coverage ranging from \$250,000 for activities like snorkelling to \$500,000 for high-risk activities such as scuba diving or jet skiing.

However, these requirements can provide reassurance to customers, attracting tourists to those who meet these criteria. To help small businesses navigate these hurdles, Pacific SIDS could support tourism operators with compliance in areas such as insurance, licensing, taxation and marketing.

### Digital marketing

Many small operators lack the skills and resources to invest in effective digital marketing strategies. Limited time and expertise further hinder operators who prioritize delivering quality services over

maintaining an active online presence. Neglecting digital communication channels can lead to missed bookings and negative reviews, impacting revenue. Additionally, small businesses in remote Pacific locations face intense competition from larger, more established players with greater resources and experience in digital marketing. To stand out, small operators must leverage tools like social media, geo-tagging and content marketing to showcase their unique cultural experiences and connect with potential travellers.

### Digital payments

The digital payment infrastructure in the Pacific is another significant barrier for small tourism businesses, particularly in managing cross-border transactions (World Bank, 2022). Tourism, inherently international, requires businesses to process payments from global customers. However, limited access to reliable, affordable payment systems hinders this process. Platforms like Airbnb, which lack a legal presence in Pacific Island countries, process payments via international transfers, incurring fees that reduce revenue for accommodation providers. High transaction fees, currency conversion issues, and inadequate access to advanced payment gateways further complicate cash flow management and deter potential customers expecting secure, seamless transactions. Investing in digital payment infrastructure is crucial for Pacific SIDS to compete globally.

While digital platforms offer significant opportunities for growth in the Pacific tourism sector, they also increase economic reliance on tourism, leaving countries vulnerable to external shocks like pandemics and natural disasters. To mitigate this risk, Pacific SIDS should explore opportunities to diversify their economies, including developing DDS. Such diversification requires sustained investment and development but is essential.

Small tourism businesses face significant hurdles with digital marketing, payments and online compliance.





## Box IV.6

### E-Tourism Frontier: Leveraging digital tools for success in Pacific tourism

Digital tools offer significant opportunities for small tourism businesses in the Pacific to expand their reach and improve their competitiveness. Sarah Mathews, Managing Director at E-Tourism Frontier, emphasizes the importance of working with online travel agencies like Booking.com, Expedia and Tripadvisor. While these platforms charge commissions, they help small businesses in remote Pacific locations reach potential customers worldwide. Effective profile management, such as regularly updating photos and responding to reviews, can further enhance visibility and drive bookings.

Additionally, businesses that are comfortable with the digital space can thrive by using visual social media platforms like Instagram and TikTok effectively. They are particularly well-suited for travel marketing, allowing small operators to connect with a global audience, showcase their offerings through beautifully produced content, and even secure direct bookings—something that was not possible a decade ago. Sarah also suggests that MSMEs can start with basic tools like Excel to track customer data such as nationality and booking dates, which can then be built upon with more sophisticated tools like Zoho as they grow.

Despite these opportunities, significant challenges remain. Sarah notes that many small business owners in the Pacific prioritize service delivery over digital marketing and efficient booking systems. Delayed responses to inquiries and an inactive online presence can result in lost bookings and negative reviews. Managing online reviews is particularly critical; Sarah advises businesses to regularly update their photos, respond to reviews, and use free tools provided by platforms like Tripadvisor and Google to improve their online presence.

Another challenge is the overwhelming amount of information and digital tools available, which can be daunting for small business owners. Sarah recommends starting simple and gradually building a more sophisticated digital strategy. She also points to successful examples of collaboration among local businesses, such as those in Watamu Beach, Kenya, where operators pool resources to create consistent branding and amplify their reach through shared content and dedicated hashtags. This kind of collaboration could be particularly beneficial for Pacific tourism businesses looking to enhance their digital presence and compete more effectively in the global market.

*Source:* UNCTAD, based on an interview with Sarah Mathews, Managing Director, E-Tourism Frontier (25 March 2024).

## D. The legal framework for digital trade in the Pacific

### 1. Provisions underpinning digital trade

Adopting the appropriate legal framework can be instrumental in addressing some of the challenges associated with digital trade (IMF, OECD, UNCTAD, et al., 2023; UNCTAD, 2015; Jaller et al., 2020). Legal provisions are particularly important for

creating a trustworthy environment that facilitates seamless digital transactions across national borders and ensures that digital trade can operate efficiently and securely within the region.

A foundational element of such frameworks is the recognition of electronic authentication and signatures, as emphasized in the United Nations Commission on International



Trade Law Model Laws on Electronic Commerce and on Electronic Signatures, and the United Nations Convention on the Use of Electronic Communications in International Contracts. These provisions ensure that contracts and documents executed electronically are legally recognized and enforceable. By embedding these rules in both national legislation and international agreements, countries can guarantee the legal certainty necessary for digital transactions, thus reducing costs and delays associated with cross-border trade. The framework mentioned above plays a key role in standardizing these practices globally, promoting trust and efficiency in digital commerce.

Cybersecurity provisions can ensure the resilience of e-commerce systems by mandating comprehensive measures to prevent, detect and respond to cyberthreats. These provisions not only protect the data and privacy of e-commerce participants but can also promote international cooperation on cybersecurity, which is crucial for maintaining a secure digital trading environment. The non-discriminatory treatment of digital products is another important component, prohibiting the preferential treatment of domestic digital products over foreign ones. This principle is vital to maintain a level playing field in digital markets.

Provisions that facilitate cross-border data flows and address data localization can enhance the functioning of digital trade (UNCTAD, 2021). These rules allow data to be transferred and processed across borders, reducing operational costs and improving efficiency in digital markets. However, it is essential to recognize that data are not merely an economic asset but have multidimensional implications, including privacy, security and human rights. National data policies, such as data localization measures, often reflect legitimate concerns about sovereignty and security, though they may pose challenges to global digital trade. In this context, there is a need for a balanced approach

to regulating cross-border data flows, one that ensures both the free flow of data and the fair distribution of its benefits.

Online consumer protection, data protection and privacy regulations are also integral to building trust in digital transactions. They help ensure that consumers are protected from fraud and that their personal data are safeguarded, which is crucial for fostering consumer confidence in the digital marketplace.

## 2. National legislation

While digital trade in the Pacific is just starting to develop, it is important for countries in the region to start preparing for the policy challenges that are emerging. According to an UNCTAD study (forthcoming), the regulatory landscape across the Pacific is uneven, with some countries making more progress in areas such as electronic transactions, online consumer protection and cybersecurity (see Table IV.3).

In the area of electronic transactions and electronic signatures, several Pacific nations have made strides in aligning their legislation with international standards. Fiji, Kiribati, Papua New Guinea, Samoa, Timor-Leste and Vanuatu have enacted laws that validate electronic records and signatures, with Fiji and Kiribati adopting the United Nations Convention on the Use of Electronic Communications in International Contracts. These efforts are crucial for facilitating secure and reliable digital interactions within and across borders.

However, online consumer protection in the Pacific remains inconsistent, with most jurisdictions relying on outdated or overlapping legislation. While some countries like Nauru have implemented comprehensive consumer protection laws, significant gaps persist, leaving consumers vulnerable in the online space. There is a clear need for modernized consistent frameworks that can adequately address the complexities of digital transactions.

Uneven regulatory progress in the Pacific highlights the need for cohesive digital trade frameworks.





**Table IV.3**

**Overview of the status of e-commerce/digital trade law in the Pacific**

Jurisdiction	E-transactions / E-signatures	Online consumer protection	Data protection and privacy	Cybercrime and cybersecurity	Intellectual property and copyright	Online content regulation	Domain names	Online dispute resolution	Digital identification	E-payments	Taxation
<b>Cook Islands</b>	Limited/none	Partial	Limited/none	Limited/none	Partial	Limited/none	Comprehensive	Limited/none	Limited/none	Limited/none	Comprehensive
<b>Federated States of Micronesia</b>	Limited/none	Partial	Limited/none	Limited/none	Partial	Limited/none	Limited/none	Limited/none	Limited/none	Limited/none	Limited/none
<b>Fiji</b>	Comprehensive	Partial	Limited/none	Comprehensive	Partial	Comprehensive	Limited/none	Limited/none	Limited/none	Partial	Partial
<b>Kiribati</b>	Comprehensive	Partial	Limited/none	Comprehensive	Partial	Limited/none	Limited/none	Limited/none	Limited/none	Limited/none	Partial
<b>Marshall Islands</b>	Limited/none	Partial	Limited/none	Limited/none	Partial	Partial	Limited/none	Limited/none	Limited/none	Partial	Limited/none
<b>Nauru</b>	Limited/none	Comprehensive	Limited/none	Comprehensive	Partial	Partial	Limited/none	Limited/none	Limited/none	Limited/none	Limited/none
<b>Niue</b>	Limited/none	Limited/none	Limited/none	Limited/none	Partial	Limited/none	Partial	Limited/none	Limited/none	Limited/none	Partial
<b>Palau</b>	Limited/none	Partial	Partial	Comprehensive	Partial	Limited/none	Limited/none	Limited/none	Comprehensive	Partial	Partial
<b>Papua New Guinea</b>	Comprehensive	Partial	Limited/none	Comprehensive	Comprehensive	Partial	Partial	Limited/none	Comprehensive	Partial	Comprehensive
<b>Samoa</b>	Comprehensive	Partial	Limited/none	Comprehensive	Partial	Partial	Limited/none	Limited/none	Limited/none	Limited/none	Comprehensive
<b>Solomon Islands</b>	Limited/none	Limited/none	Limited/none	Partial	Partial	Limited/none	Limited/none	Limited/none	Limited/none	Partial	Partial
<b>Timor-Leste</b>	Comprehensive	Partial	Partial	Partial	Partial	Limited/none	Limited/none	Limited/none	Limited/none	Limited/none	Limited/none
<b>Tonga</b>	Limited/none	Partial	Limited/none	Comprehensive	Partial	Comprehensive	Comprehensive	Limited/none	Limited/none	Limited/none	Partial
<b>Tuvalu</b>	Partial	Limited/none	Limited/none	Partial	Partial	Partial	Partial	Limited/none	Limited/none	Limited/none	Partial
<b>Vanuatu</b>	Comprehensive	Limited/none	Limited/none	Comprehensive	Partial	Partial	Limited/none	Limited/none	Limited/none	Limited/none	Partial

Source: UNCTAD, based on UNCTAD (forthcoming).

Notes: 'Comprehensive' refers to countries with comprehensive laws specifically dedicated to addressing the legal area(s) in question. 'Partial' indicates that the legal framework addresses certain aspects of the digital environment but is not fully comprehensive. 'Limited/none' indicates that there are no laws specifically dedicated to addressing digital or online environments in relation to the legal area(s) in question. However, certain relevant provisions may be found in other general legislation. For further information, please refer to the country reports for detailed insights.



Data protection and privacy regulations are still underdeveloped in many Pacific nations. Further work is needed to map out the core components of data privacy laws that are necessary to provide effective data privacy in smaller economies and SIDS. The current lack of comprehensive data protection frameworks poses risks to personal and sensitive information in an increasingly digital world but it may also reduce opportunities for trade with partner countries that have stricter data protection provisions. Similarly, cybercrime and cybersecurity laws vary widely, with some countries having enacted dedicated cybercrime legislation, while others participate in regional initiatives like the ‘Cyber Safety Pasifika’ programme to enhance cybersafety awareness and build investigative capacities.

Intellectual property laws in the Pacific are shaped by a combination of historical and modern legislation, with most countries adhering to international agreements. However, keeping these laws updated with the rapid evolution of digital technologies remains a challenge. Intellectual property laws can help protect traditional knowledge, cultural expressions and indigenous rights. This is particularly important in the Pacific, where many communities have rich cultural heritages that need safeguarding from exploitation and misappropriation.

Online content regulation is typically based on constitutional provisions related to freedom of expression but there is a lack of specific laws that offer detailed guidance on managing online content, with notable exceptions in Fiji and Tonga.

Other areas—such as domain names, online dispute resolution, digital identity, e-payments and taxation—also reveal varying degrees of regulatory development. While countries like Fiji and Papua New Guinea have begun establishing frameworks for digital governance, e-payments and taxation of digital services, much work remains to create cohesive and comprehensive systems that support

digital economy growth and associated development benefits. The development of these areas is crucial to ensure that Pacific nations can fully benefit from the digital economy while safeguarding the rights and interests of their citizens. To this end, countries may wish to seek support from development partners and relevant international organizations to strengthen their regulatory frameworks.

### 3. International agreements

Most Pacific SIDS are constrained by a lack of both legislation in key areas of the digital economy and technical capacity to enter digital trade negotiations. Legislation on topics such as e-transactions, e-payment, data protection, cybersecurity and consumer protection provide the foundations to build trust in digital transactions and encourage the adoption of paperless trade. Such legislations also provide the legal basis for economies to commence digital trade negotiations for agreements containing legally binding rules and provisions.

Building on the need for robust national provisions to support digital trade, it is also essential to consider the international dimension, particularly the role of trade agreements. While national regulations lay the groundwork for digital transactions, participation in international agreements can ensure that these frameworks align with global standards and facilitate cross-border e-commerce.

In general, Pacific SIDS have signed few trade agreements with other economies, and they mostly only cover tariff concessions for goods. Almost none of the Pacific SIDS has participated in international trade agreements that include e-commerce provisions (see Table IV.4). Regional trade agreements, such as the Pacific Agreement on Closer Economic Relations Plus<sup>40</sup> or the Pacific Island Countries Trade Agreement,<sup>41</sup> do not have specific

<sup>40</sup> <https://pacerplus.org/resources/public/pacer-plus-agreement/download/0pya46evmbq9/PACER-Plus-consolidated-legal-text.pdf>.

<sup>41</sup> [https://forumsec.org/sites/default/files/2024-03/Pacific-Island-Countries-Trade-Agreement-PICTA\\_compressed.pdf](https://forumsec.org/sites/default/files/2024-03/Pacific-Island-Countries-Trade-Agreement-PICTA_compressed.pdf).



Strengthening digital trade legislation can unlock opportunities for participation in global and regional e-commerce agreements.

provisions on e-commerce or digital trade. A notable exception is the Indo-Pacific Economic Framework,<sup>42</sup> of which Fiji is a member and which under Pillar I emphasizes the importance of fostering an inclusive and resilient digital trade environment in the Indo-Pacific region.

Only seven Pacific SIDS<sup>43</sup> are members of the WTO, with Timor-Leste having joined in February 2024. None of the Pacific SIDS are participating members of the WTO Joint Statement Initiative on E-commerce, which aims to agree common rules in areas including enabling electronic commerce; promoting openness and trust in e-commerce; cross-cutting issues; telecommunications; and market access for e-commerce firms. On 26 July 2024, participants to the initiative, co-convened by Australia, Japan and Singapore, achieved a so-called stabilized text after five years of negotiation.<sup>44</sup>

In contrast, in the wider Asia-Pacific region, digital trade agreements have proliferated in recent years without the participation of Pacific SIDS. Examples of digital trade agreements include the Australia–Singapore Digital Economy Agreement<sup>45</sup> and the Digital Economy Partnership Agreement<sup>46</sup>

between Chile, New Zealand and Singapore. Regional trade agreements such as the Comprehensive and Progressive Agreement for Trans-Pacific Partnership<sup>47</sup> and the Regional Comprehensive Economic Partnership Agreement<sup>48</sup> also contain a dedicated chapter on e-commerce. ASEAN has a 2018 E-commerce Agreement<sup>49</sup> and members are working on a Digital Economy Framework Agreement.<sup>50</sup>

Having robust digital trade legislation is typically a prerequisite for acceding to digital trade agreements because applicants are evaluated on their abilities to meet the required digital standards as stipulated in the agreements. The absence of digital trade legislation in most Pacific SIDS could become a roadblock to joining a regional trade network and even to participating effectively in digital trade when other economies adopt more stringent digital trade rules, e.g. only permit data transfer to jurisdictions with an adequate level of data protection. It is therefore important that Pacific SIDS attempt to keep up with evolving trade trends and digital regulatory landscapes to ensure that digital trade opportunities are kept open for its citizens and businesses.

<sup>42</sup> <https://www.dfat.gov.au/trade/organisations/wto-g20-oecd-apec/indo-pacific-economic-framework>.

<sup>43</sup> Fiji, Papua New Guinea, Samoa, Solomon Islands, Timor-Leste, Tonga and Vanuatu.

<sup>44</sup> [https://www.wto.org/english/tratop\\_e/ecom\\_e/joint\\_statement\\_e.htm](https://www.wto.org/english/tratop_e/ecom_e/joint_statement_e.htm).

<sup>45</sup> <https://www.dfat.gov.au/trade/services-and-digital-trade/australia-and-singapore-digital-economy-agreement>.

<sup>46</sup> The Republic of Korea formally applied to join the Digital Economy Partnership Agreement in September 2021. See also <https://www.mfat.govt.nz/en/trade/free-trade-agreements/free-trade-agreements-in-force/digital-economy-partnership-agreement-depa/overview>.

<sup>47</sup> <https://www.dfat.gov.au/trade/agreements/in-force/cptpp/comprehensive-and-progressive-agreement-for-trans-pacific-partnership>.

<sup>48</sup> <https://www.dfat.gov.au/trade/agreements/in-force/rcep>.

<sup>49</sup> <https://agreement.asean.org/media/download/20190306035048.pdf>.

<sup>50</sup> <https://asean.org/asean-defa-study-projects-digital-economy-leap-to-us2tn-by-2030/>.



**Table IV.4**  
**Bilateral and regional trade agreements involving Pacific SIDS**

International agreement	Parties	Digital provisions
Agreement on Trade and Commercial Relations between the Government of Australia and the Government of Papua New Guinea	Australia and Papua New Guinea	None
Interim Partnership Agreement between the European Community and the Pacific States	European Union (non-reciprocal tariff concession to eligible Pacific States)	None
Melanesian Spearhead Group Trade Agreement	Papua New Guinea, Solomon Islands and Vanuatu	None
Pacific Agreement on Closer Economic Relations Plus	Australia, Cook Islands, Kiribati, Marshall Islands, Federated States of Micronesia, Nauru (not ratified), New Zealand, Niue, Palau, Samoa, Solomon Islands, Tonga, Tuvalu and Vanuatu	None
Pacific Island Countries Trade Agreement	Cook Islands, Kiribati, Marshall Islands, Federated States of Micronesia, Samoa, Tonga, Tuvalu and Vanuatu	None
South Pacific Regional Trade and Economic Co-operation Agreement	Australia and New Zealand (non-reciprocal tariff concession to Pacific Islands Forum countries)	None
Indo-Pacific Economic Framework	Australia, Brunei Darussalam, Fiji, India, Indonesia, Japan, Malaysia, New Zealand, Philippines, Singapore, Republic of Korea, Thailand, United States and Viet Nam	Pillar I emphasizes the importance of fostering an inclusive and resilient digital trade environment in the Indo-Pacific region

Source: UNCTAD.

## E. Policy options and conclusions

Digital trade offers Pacific businesses an opportunity to overcome geographic isolation and access global markets. However, Pacific SIDS face significant barriers, including high shipping costs, limited transportation options, complex Customs procedures and the absence of standardized addressing systems. Foundational challenges such as limited Internet connectivity, high digital costs and gaps in digital skills further restrict participation in global digital trade.

Despite these obstacles, there are encouraging signs of increased engagement, as both global and local e-commerce platforms gain traction in the region. By addressing these challenges through

targeted policy measures, Pacific SIDS can create a more supportive environment for digital trade. The following sections explore recent actions taken in selected policy areas to advance digital trade in the region.

### 1. Facilitating digital trade

Pacific SIDS are implementing various measures to facilitate digital trade, with a strong focus on Customs modernization, paperless trade and harmonizing procedures regionally. These initiatives are aimed at addressing the unique challenges posed by cross-border e-commerce in the region, particularly the handling of small-value, high-volume shipments typical in online trade.

Pacific SIDS are preparing for digital trade by modernizing Customs and adopting paperless trade.

## Customs modernization and harmonization

Customs procedures across the Pacific are being modernized to align with global standards, which is crucial to enhance efficiency in cross-border e-commerce, with the deployment of the UNCTAD-developed Automated System for Customs Data (ASYCUDA) in all 14 countries in the region. ASYCUDA is a computerized Customs management system that covers most foreign trade procedures, a key tool for automating Customs processes and improving the flow of goods across borders.<sup>51</sup> The system has enabled these countries to transition from manual, paper-based Customs processes to streamlined, digital systems that has seen reduction in trade bottlenecks, increased transparency and enhanced revenue collection.

Building on their Customs modernization initiative, Pacific Island countries are looking to address the lack of integration between Customs and postal systems that causes delays and inefficiencies in the processing and clearance of international shipments. In Vanuatu, a communication platform between ASYCUDA and Vanuatu Post's Customs Declaration System was implemented by the UNCTAD/ASYCUDA Programme in 2022. This enabled electronic exchange of advance postal consignment data for pre-arrival clearance and saw improvements in clearance times, with goods available for release within the day of arrival.

In Fiji (Government of Fiji, forthcoming), Customs modernization efforts include plans to replicate the integration of ASYCUDA and the Customs Declaration System to streamline the handling of e-commerce parcels. This system would enable better data sharing and analysis, improving Customs' capacity to manage risks, ensure accurate valuations and speed up shipment clearance.

The World Customs Organization (2022) *Framework of Standards for Cross-*

*Border E-commerce* has been identified in the regional e-commerce strategy as a key tool for facilitating cross-border e-commerce across the Pacific (PIFS, 2021). This framework provides guidelines for simplifying Customs clearance for small parcels, ensuring secure and efficient processing through the use of electronic data and risk management systems. Adoption of these standards across Pacific SIDS will lead to more consistent and predictable Customs processes, supporting both national and intraregional trade.

## Paperless trade initiatives

Moving towards a paperless trade environment is another key goal for Pacific SIDS. The Framework Agreement on Facilitation of Cross-Border Paperless Trade in Asia and the Pacific is being leveraged by countries such as Timor-Leste and Tuvalu to promote electronic exchange of trade data and documents.<sup>52</sup> By adopting this agreement, the countries aim to improve interoperability between national and regional trade systems, facilitating more efficient transactions across borders. The digital exchange of information, enabled by systems such as ASYCUDA and the Customs declaration system, is expected to reduce delays, lower administrative costs and enhance compliance with international trade standards.

The Government of Vanuatu (2022) is planning to simplify Customs processes by providing merchants with easy access to a user-friendly Customs declaration system that is interoperable with e-commerce platforms. This initiative is designed to reduce the complexity of cross-border transactions and make it easier for small businesses to engage in global trade. Similarly, the Governments of Fiji (forthcoming) and Tonga (Tonga, Ministry of Trade and Economic Development, 2021) are planning to adopt paperless trade measures to further streamline Customs processes.

<sup>51</sup> See also <https://asycuda.org/en/>.

<sup>52</sup> [https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg\\_no=X-20&chapter=10&clang=\\_en](https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=X-20&chapter=10&clang=_en).





## Trade in low-value goods

The high administrative burden associated with processing low-value e-commerce transactions has prompted many Pacific countries to explore the implementation of a regional *de minimis* value threshold. By exempting small-value goods from Customs duties, the Solomon Islands (Government of Solomon Islands, 2022) and Vanuatu (Vanuatu, Ministry of Tourism, Trade, Commerce and Ni-Vanuatu Business, 2022) aim to reduce the costs of handling low-value shipments. This exemption would save resources for Customs authorities and lower trade costs for businesses, potentially promoting e-commerce growth. Establishing a harmonized *de minimis* value across the Pacific would create consistency, encourage predictability in cross-border trade, and level the playing field for businesses across the region engaged in e-commerce and other trade in low-value goods.

## 2. Building logistics for digital trade

Reliable logistics and warehousing are critical for the growth of e-commerce in Pacific SIDS, addressing challenges like long shipping times, high costs and underdeveloped last-mile delivery systems (see section B.1).

### Warehousing

In digital trade, warehouses or fulfilment centres play a vital role by supporting quicker delivery times, which is crucial for the success of global and regional e-commerce platforms. Regional warehousing allows businesses to store products closer to key markets, reducing shipping times and costs while improving integration into global e-commerce networks. PPPs could support the development of affordable and accessible fulfilment centres, including climate-controlled warehouses essential for preserving agricultural commodities during long-distance transportation in the Pacific.

In its national e-commerce strategy, the Government of Solomon Islands (2022) emphasizes the need for significant upgrades to transportation and storage infrastructure. Key initiatives include improvements to airport facilities, the creation of e-commerce hubs with shared storage spaces, and the development of rural cold-chain infrastructure to reduce product spoilage in the fisheries and agricultural sectors. The strategy also aims to attract international logistics and e-commerce platforms by promoting investment opportunities for establishing order fulfilment centres. These efforts are expected to provide businesses with affordable, accessible warehousing solutions that meet the unique demands of e-commerce.

### Last-mile delivery

The absence of reliable last-mile delivery infrastructure is a significant barrier not only to the development of national e-commerce but also to the development of intraregional digital trade. To address this issue, Pacific countries are focusing on two key areas: developing physical addressing systems and establishing local pick-up and drop-off points.

Several Pacific countries are taking concrete steps to address the absence of formal physical addressing systems. For instance, Tonga is developing a national home addressing system in line with Universal Postal Union standards (Tonga, Ministry of Trade and Economic Development, 2021). Similarly, the Government of Samoa (2022) has initiated a project that will assign street numbers to homes and businesses in and around Apia, which will not only improve local logistics but also make the country's addressing system compatible with international e-commerce platforms through integration with the Universal Postal Union database.

The Universal Postal Union is also supporting the development of a similarly compatible national addressing system in Fiji (Government of Fiji, forthcoming).



By adopting international addressing standards, Pacific SIDS can facilitate faster processing for international shipments and improve the overall functionality of their postal services. These measures will also enable businesses to accurately estimate shipping costs, plan logistics efficiently and ensure timely deliveries.

Local pick-up and drop-off points are being explored as a more feasible solution in the short term. In Vanuatu, for example, businesses such as the Vanuatu Craft Association are offering options for customers to collect their orders from convenient third-party locations, such as airports and local business hubs (Vanuatu, Ministry of Tourism, Trade, Commerce and Ni-Vanuatu Business, 2022). This model has proven effective, especially where home delivery is difficult.

Similarly, in Solomon Islands, alternative solutions like pick-up and drop-off services are being piloted by Solomon Post, using geographic information systems technology to identify accurate locations for drop-offs and pick-ups, even in rural areas (Government of Solomon Islands, 2022). A network of independent entrepreneurs is being encouraged to offer these services, initially in key areas like Honiara, with plans for nationwide expansion. These pick-up and drop-off solutions are crucial for improving access to e-commerce and facilitating efficient order fulfilment in the absence of robust home delivery systems.

Apart from government actions, there are also private-sector initiatives originating in the region. For example, Sky Eye Pacific's Maua e-commerce platform has developed its own street address system in Samoa and Vanuatu, demonstrating how local businesses are creating solutions to overcome the lack of formal addressing infrastructure (see Box IV.3).

### 3. Strengthening digital trade skills

To succeed in the digital economy, businesses need a broad range of digital

skills. Foundational competencies like digital literacy, communication technology use and e-commerce platform management are essential for maintaining efficiency and competitiveness. Advanced skills, particularly for Pacific businesses engaged in digital trade, include expertise in cross-border e-commerce regulations, global digital marketing and international payment systems; and managing digital Customs, logistics and supply chains.

Many Pacific businesses lack the export readiness and digital literacy needed to meet e-commerce platform requirements. Governments can collaborate with global and local platforms to deliver targeted capacity-building programmes, focusing on areas such as digital marketing, e-commerce platforms and online payments, as highlighted in a recent study (see Figure IV.11). The PRESR further emphasizes the importance of regional partnerships with multinational platforms to support business growth.

This need is also acknowledged in recent e-commerce strategies. In Vanuatu, improving public understanding and awareness of e-commerce and its benefits has been a recurring theme in public-private dialogue (Vanuatu, Ministry of Tourism, Trade, Commerce and Ni-Vanuatu Business, 2022). While some e-commerce activities are already occurring through social media platforms like Facebook and Instagram (social selling), the government seeks to enable greater participation in formal digital trade, equipping businesses with the necessary knowledge and skills. The Government of Solomon Islands (2022) is also planning to provide training that supports businesses in transitioning from social media-based transactions to more formal online platforms.

Export promotion in developing countries must evolve to address the demands of the digital economy (UNCTAD, 2017). As digital trade grows, trade promotion policies can help MSMEs leverage digital tools to access international markets. Despite online platforms enabling direct

Building reliable logistics and last-mile delivery infrastructure will be essential for e-commerce growth in the region.



connections with foreign buyers, challenges like meeting standards, handling Customs and addressing trust gaps persist. Effective cross-border e-commerce requires strategic branding, pricing and market-specific online marketing—areas where traditional export promotion efforts often

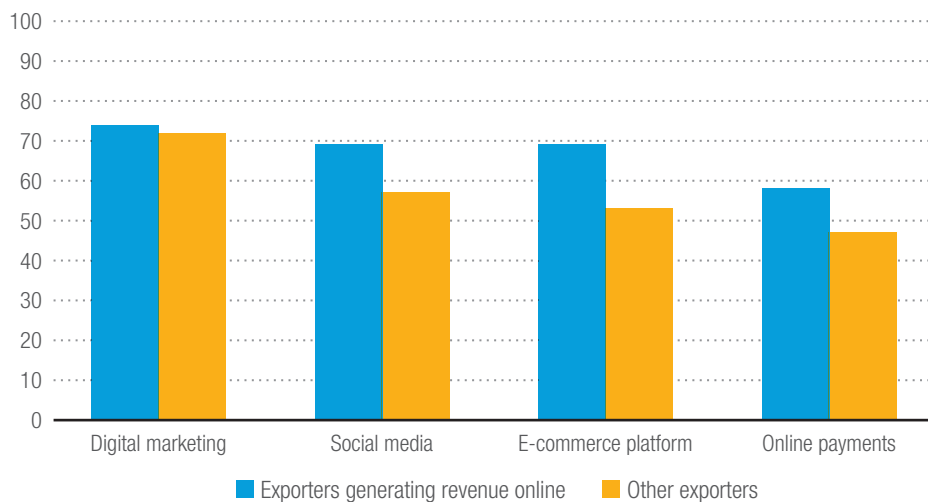
fall short. Public support is frequently fragmented, and trade promotion agencies may lack expertise in cross-border e-commerce. PPPs are essential to bridge these gaps, ensuring capacity-building programmes are led by trainers with relevant private-sector experience.



### Figure IV.11

#### Training needs as perceived by exporters in Pacific SIDS, by online activity, 2024

(Per cent of respondents)



Source: UNCTAD, based on Pacific Trade Invest Australia (2024).

Notes: The number of respondents were for exporters generating revenue online (192) and other exporters, not generating revenue online (60). The survey question was: 'Please indicate if you would benefit from any of the following e-commerce capacity-building opportunities.'

The Fiji national e-commerce strategy (Government of Fiji, forthcoming) aims to strengthen MSME support, particularly in services and value added product sectors, by enhancing trade information, in-market support and a focus on e-commerce. Partnerships with marketplaces and logistics providers will facilitate efficient cross-border trade, while national marketplaces could expand regionally, benefiting high-potential goods like specialized agricultural products and creative industries.

The strategy also emphasizes the services sector, leveraging successful approaches from the outsourcing industry in Fiji to promote growth and internationalization. Key initiatives include developing an information portal with up-to-date export

procedures and biosecurity requirements, and integrating e-commerce principles into the national trade and investment promotion framework. These measures aim to enhance the global competitiveness of Fijian MSMEs.

## 4. Developing efficient and affordable cross-border digital payment options

As highlighted in this chapter, the Pacific faces significant challenges in building a robust digital payment infrastructure to support cross-border e-commerce, such as those related to access to international payment gateways or high transaction costs associated with cross-border payments (see also PIFS, 2021). In response,



countries are actively addressing these concerns in their national e-commerce strategies, aiming to enhance digital payment systems and improve the overall framework for online transactions.

For instance, the Government of Fiji (forthcoming) seeks to expand the use of digital payment solutions to lower transaction costs, improve security and enhance e-commerce efficiency. By upgrading the national payments system, Fiji aims to ensure full interoperability between bank accounts, mobile wallets and cards. A key focus is making Internet payment gateways more accessible for MSMEs through payment aggregator services and improved integration with common platforms like Magento and WooCommerce.

Additionally, Fiji will work on regulatory clarity for international payment processors like PayPal and encourage the entry of global payment service providers into the market. Vodafone's launch of the M-PAiSA Mastercard in May 2023 also exemplifies efforts to integrate mobile wallets with international payment solutions, enabling online and overseas transactions without the need for a bank account (see Box IV.7). This initiative highlights the potential for similar solutions to be expanded across other Pacific SIDS, though it faces significant

regulatory and financial hurdles that need to be addressed for broader regional adoption.

Similarly to Fiji, the Vanuatu e-commerce strategy (Vanuatu, Ministry of Tourism, Trade, Commerce and Ni-Vanuatu Business, 2022) focuses on improving electronic payment solutions by enhancing systems within banks and mobile network operators. The strategy seeks to expand payment gateways, which are currently limited to one bank, by promoting greater interoperability between banks and mobile network operators. A key objective is to allow use of local credit cards, reducing reliance on costly international options like Visa and Mastercard. At the same time, Vanuatu aims to attract global payment providers like PayPal, Facebook Pay and Apple Pay to build trust, attract investment and create a more competitive digital payment landscape.

Improving payment gateways and the interoperability of financial systems needs to go hand in hand with the development and adoption of payment solutions that are tailored to the unique needs of the Pacific. Additionally, improving digital and financial literacy among business owners and consumers is important for the effective use of digital payment solutions and broader adoption of e-commerce across Pacific SIDS (see also chapter III).

Enhanced digital payment solutions and interoperability are crucial to boosting trade and lowering costs.

#### Box IV.7



#### Vodafone integrates mobile wallet with Mastercard for international payments

In the Pacific SIDS, there are limited payment gateways and payment solutions providers. M-PAiSA Mastercard, a new payments solution, was launched by Vodafone Fiji in May 2023 to integrate the simple functionality of a mobile wallet with international payment solutions provider Mastercard to enable online and overseas payments without the need for a bank account. The fully digital onboarding process allows registered M-PAiSA users, both consumers and businesses, to sign up for M-PAiSA Mastercard directly from the M-PAiSA application using their smartphones.

Approved users can access their virtual Mastercard through the M-PAiSA application within 48 to 72 hours and start transacting by accessing the funds held in their M-PAiSA wallet. The first 100,000 users that signed up for the service received their cards at no cost. While there is a small monthly access fee (\$2.00 per month), Vodafone has waived the service fee since the launch to build confidence in the use of an internationally accepted means of payment without worrying about recurring fees. The M-PAiSA Mastercard recorded 70,000 registrations within the first six months, with around 20,000 active monthly users.



This initiative ties into Vodafone's partnerships with remittance service providers to enable inward remittances into the mobile wallet in a matter of seconds, with funds to be used for payments to eligible local merchants, online e-commerce platforms and online service providers (e.g. Netflix), as well as overseas merchants when travelling abroad.

Despite the adoption of mobile wallets, around 50 per cent of users are still forced to withdraw cash from the M-PAiSA wallet because many merchants only accept payment in cash.

The expansion of the M-PAiSA Mastercard initiative to other Pacific Islands where Vodafone operates is a possibility. However, it requires significant upfront payment outlay for a separate Mastercard licensing fee for each territory, along with the high compliance costs and regulatory hurdles firms such as Vodafone face in obtaining the necessary licensing for the delivery of financial services. Vodafone is also exploring a new initiative to link up the mobile wallets across the multiple Pacific SIDS in which it operates (Cook Islands, Fiji, Papua New Guinea, Samoa and Vanuatu) to improve regional e-payments, which would require approval from the respective central banks in the Pacific.

*Source:* UNCTAD, based on an interview with Shailendra Prasad, Head of E-commerce and Digital Financial Services, Vodafone Fiji (29 February 2024).

## 5. Building a regulatory framework for digital trade

The emergence of the digital economy in the Pacific region has presented a range of policy challenges, necessitating the development of comprehensive regulatory solutions. The status of e-commerce laws and regulations varies widely across countries, with progress occurring at different speeds and levels of implementation capacity. To fully leverage the benefits of e-commerce at both domestic and regional levels, legal reforms must be accelerated across the region.

A recent study (UNCTAD, forthcoming) identifies several priorities for Pacific governments when developing e-commerce laws.

- Fostering collaboration among governments, businesses, PIFS and development partners to create effective and balanced legal frameworks. These frameworks must provide a strong regulatory foundation to ensure the security and validity of electronic transactions while remaining flexible enough to encourage innovation across various sectors.
- Engaging stakeholders through extensive consultations, especially with trade and Customs authorities, to ensure that digital regulations are well-aligned with practical initiatives like single-window systems. The establishment of a national inter-agency task force, with high-level government support, can help address both domestic and cross-border issues more effectively.
- Fostering public awareness and engagement through policy dialogues and forums, both internationally and regionally. These discussion platforms facilitate the exchange of experiences and best practices, promote mutual recognition of laws, and enhance cross-border connectivity, which is vital for the interoperability of Customs agencies and private-sector e-platforms.
- Aligning e-commerce laws with international standards while taking into account local norms, values and level of economic development is important. Clear definitions of regulatory scope and harmonization across various regulations are necessary to reduce conflicts and ensure smooth

Accelerating and harmonizing e-commerce laws can enhance the region's readiness for digital trade opportunities and growth.



implementation. Collaboration across regulatory agencies, supported by formal agreements and innovative tools like regulatory sandboxes and multi-agency forums, will help create a dynamic regulatory environment.

- Building institutional capacity for policymakers and law enforcers is critical to ensure that the laws and regulations are implemented and enforced effectively. Awareness-raising needs to be part of this. Participation in regional and international initiatives is also vital to promote consensus on policy principles, regulatory approaches and standards.

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Digital trade presents Pacific businesses with opportunities to overcome geographic isolation and access global markets. Through e-commerce platforms and online retail shops, businesses can scale operations, reduce reliance on physical storefronts and generate new revenue streams. Additionally, digital trade supports economic diversification by enabling Pacific businesses to meet global demand for niche, high-value goods and services, particularly in sectors like tourism, agriculture and DDS.

However, Pacific SIDS face structural barriers to fully engaging in digital trade. High shipping costs, limited transportation options and geographic isolation reduce

competitiveness and lengthen delivery times. The absence of standardized addressing systems complicates logistics and increases the risk of failed shipments, especially for small-value transactions. Complex Customs procedures, ill-suited to the speed of digital trade, hinder the efficient flow of goods, while costly and inefficient cross-border payment solutions create additional challenges for scaling operations.

Despite these challenges, early signs of progress are visible. Global platforms like Alibaba and local initiatives such as Maua are expanding access to international markets, and the tourism sector has emerged as the most advanced area for digital trade in the region.

These developments, though modest, underscore the potential for Pacific businesses to explore global markets and capitalize on niche opportunities.

To sustain and expand this momentum, Pacific SIDS must implement supportive policies that address current barriers. Improving infrastructure, enhancing digital skills and refining regulatory frameworks will enable businesses to engage more effectively in the global digital economy. International partnerships, targeted initiatives and sector-specific support will be crucial to foster growth in digital trade, contributing to economic diversification and resilience across the Pacific.



## Chapter IV

Laying the Groundwork: The Early Stages of Digital Trade in the Pacific









Chapter V

# From assessment to implementation





**The Pacific region is in the early stages of its digital transformation, with efforts gaining momentum at both national and regional levels. As digital technologies increasingly shape global economic systems, Pacific SIDS have begun to address key challenges while identifying opportunities to strengthen their digital economies. Building on this progress, targeted efforts to improve connectivity, support entrepreneurship and facilitate digital trade will be critical to unlocking the region's potential for inclusive and sustainable growth. Continued collaboration and investment will ensure that countries can fully benefit from digital transformation and enhance their integration into the global economy.**

**This report sets out three main objectives. First, to provide an updated assessment of the ICT infrastructure in the Pacific, identifying the persistent gaps in connectivity, coverage and resilience that continue to challenge the region's digital economy and limit economic participation. Second, to encourage digital entrepreneurship as a foundational pillar for a Pacific-native digital economy, highlighting the need to foster innovation and support MSMEs in the digital transition. Third, it stresses digital trade as a critical avenue for Pacific SIDS to overcome geographic isolation, expand into international markets and integrate more effectively into the global digital economy. These three areas are central to advancing inclusive and sustainable growth across the region's evolving digital landscape.**

## **From digital infrastructure to digital trade: Realizing the Pacific's opportunities**

Significant progress has been made in expanding Internet infrastructure across the Pacific, particularly through submarine cable investments. However, many islands still rely on single cables, leaving them vulnerable to disruptions, while mobile network development lags. Emerging solutions such as LEO satellites offer promising opportunities to extend broadband access to remote regions but their adoption is hindered by high costs and regulatory challenges.

Despite increased Internet use, the high cost of broadband services and essential devices like laptops and computers remains a significant barrier to digital

inclusion, particularly for entrepreneurs. While smartphones enable basic digital engagement and e-commerce activities, more advanced entrepreneurship requires access to more powerful devices, which are often unaffordable. Addressing these challenges will require targeted policies to reduce broadband and device costs, expand last-mile connectivity, and foster PPPs to ensure reliable and affordable Internet access for all.

Digital entrepreneurship offers opportunities to foster innovation, stimulate local economic growth and create jobs in the Pacific. However, entrepreneurs face challenges such as limited access to financing, gaps in digital literacy, and sociocultural factors that can restrict participation, particularly in rural areas. Women entrepreneurs encounter additional barriers, including unequal access to



Mentorship, skills training and financial support are key to fostering a more inclusive digital economy.

technology and financing. Interventions such as mentorship programmes, skills training and financial support can play a key role in fostering a more inclusive digital economy. Expanding access to resources and building supportive ecosystems through partnerships, incubators and digital skills programmes will be essential to overcome these challenges and support broader economic development.

Digital trade provides countries in the region with opportunities to access global markets, particularly through e-commerce and DDS. However, businesses face significant challenges, including high shipping costs, limited payment systems and digital skills gaps. Strengthening local platforms, enhancing digital skills, and improving logistics and payment infrastructure are key to scaling digital trade. Fragmented regulatory frameworks can hinder trust and participation in cross-border e-commerce. Harmonizing regional standards in areas such as data protection and cybersecurity, along with targeted policies to support digital entrepreneurs and enhance local value capture, could create a more inclusive and sustainable digital economy. Collaborative efforts among governments, the private sector and international partners will be essential to overcome these barriers.

## From assessments to strategy implementation

Building on the opportunities and challenges identified in developing the digital economy, e-commerce strategies—supported by comprehensive diagnostics like the eTrade Readiness Assessments—serve as crucial tools to advance the policy agenda on digital trade in the region. These assessments provide a detailed understanding of the current e-commerce ecosystem across critical policy areas. By identifying priority

actions in areas such as digital infrastructure, skills development and regulatory reform, these strategies guide targeted policies that align with national development goals.

A multi-stakeholder, participatory approach is key to ensure inclusivity, incorporating perspectives from government, the private sector and civil society. This fosters public-private dialogue, strengthens e-commerce ecosystems and helps build a unified vision for leveraging digital trade as a tool for economic diversification. Additionally, e-commerce strategies enhance coordination among regional and international development partners, creating synergies that drive reforms, boost MSME participation in global markets, and address foundational gaps such as digital payment systems and logistics. In this way, well-formulated e-commerce strategies provide a road map to capitalize on the potential of digital trade while ensuring sustainability and inclusiveness.

The development of eTrade readiness assessments following UNCTAD methodology and e-commerce strategies over the last seven years (see Table V.1) has been a significant contribution to the region's digital transformation efforts. The assessments are foundational in identifying key areas for improvement and building comprehensive national e-commerce strategies that reflect both local needs and regional digital ambitions. The PRESR, launched in 2021, serves as a guiding framework that aligns individual national strategies with broader goals of regional integration into the global digital economy. Since then, several governments have moved to create their national strategies, drawing from the assessments to implement tailored solutions that drive economic growth, improve logistics and enhance trade facilitation.





**Table V.1**

**Assessments and e-commerce strategies concluded in the Pacific, year of completion**

	Assessment	Strategy
<b>Regional (PIFS)</b>	2020	2021
<b>American Samoa</b>		
<b>Cook Islands</b>		2023
<b>Federated States of Micronesia</b>	2020	
<b>Fiji</b>	2020	2024
<b>French Polynesia</b>		
<b>Guam</b>		
<b>Kiribati</b>	2019	
<b>Marshall Islands</b>		
<b>Nauru</b>	2021	
<b>New Caledonia</b>		
<b>Niue</b>	2020	
<b>Northern Mariana Islands</b>		
<b>Palau</b>		
<b>Papua New Guinea</b>	2020	2024 <sup>a</sup>
<b>Samoa</b>	2017	2022
<b>Solomon Islands</b>	2018	2022
<b>Timor-Leste</b>	2024 <sup>b</sup>	2025 <sup>b</sup>
<b>Tonga</b>	2019	2021
<b>Tuvalu</b>	2019	2023 <sup>a</sup>
<b>Vanuatu</b>	2018	2022

Source: UNCTAD.

Notes: a (Validated, but not endorsed by cabinet), b (In progress).

Countries pursuing e-commerce strategies often encounter hurdles during the implementation stage, stemming not only from inadequate digital infrastructure, regulatory gaps or financial constraints but also from practical coordination and governance challenges (UNCTAD, 2024a). A critical barrier is the absence of sustained political commitment and the lack of a dedicated implementation framework. Without strong leadership, for example from ministries of trade or ICT, and an operational implementation unit with

adequate human and financial resources, reform efforts risk becoming fragmented.

Effective implementation also requires breaking institutional silos and fostering coordination across public and private stakeholders. Robust monitoring systems, such as the UNCTAD e-trade reform tracker, can be instrumental in tracking progress, enhancing accountability and facilitating resource mobilization. These practical measures, combined with evidence-based planning and inclusive stakeholder engagement, are critical for translating

Effective implementation of e-commerce strategies requires breaking institutional silos and fostering coordination across public and private stakeholders.



strategic ambitions into measurable outcomes, ensuring that e-commerce reforms deliver tangible benefits.

In the Pacific region, involving governments, the private sector and development partners has been crucial to ensuring that e-commerce strategies reflect local needs while aligning with regional frameworks like the PRESR and the 2050 Strategy for the Blue Pacific Continent.

## Fostering regional ownership and cooperation

The Pacific region faces unique challenges in advancing digital trade and e-commerce, including vast distances, small market sizes and limited connectivity. Addressing these requires coordinated action at both national and regional levels, alongside sustained international support. Recognizing this, the Pacific has made notable progress in building a cohesive framework to overcome shared obstacles and foster a thriving digital economy.

The PIFS E-commerce Initiative leads the regional efforts to promote harmonization and collaboration through the PRESR, approved in 2022. As highlighted in the *Pacific Digital Economy Report 2022*, a key challenge is establishing an effective governance structure to coordinate the implementation of both national and regional strategies. To address this, the Pacific E-commerce Committee was established, a key measure (1.1.2) under the Strategy. It aims at fostering a robust framework and strengthening cooperation among government institutions, regulatory bodies and private-sector partners. Additionally, two subcommittees—one for development partners and another for the private sector—were formed in 2023. These governance platforms have been instrumental in ensuring the monitoring, coordination and strategic oversight of the Strategy's implementation. They also facilitate alignment between national strategies and regional objectives, ensuring efficient resource utilization and minimizing duplication.

To support these governance efforts, the Pacific E-commerce Initiative has released two monitoring and evaluation reports, one in 2022 (PIFS, 2022b) and another in 2024 (PIFS, 2024a). The latest report indicates that 61 per cent of the Strategy's measures have been actioned, up from 43 per cent in 2022, demonstrating significant progress and growing momentum in its implementation. Meanwhile, stronger engagement from donor partners and implementing agencies will be required to improve the effectiveness of monitoring and evaluation reporting. Underreporting remains a challenge. The monitoring and evaluation system depends heavily on agencies creating and regularly updating project pages, and improvements in this area will be critical to capturing a complete picture of progress.

Complementing these efforts, the Pacific E-commerce Alliance was launched in 2023. Inspired by the UNCTAD eTrade for all initiative, the Alliance strengthens multi-stakeholder collaboration by uniting governments, regional organizations and development partners. It focuses on raising awareness of e-commerce opportunities, mobilizing resources and promoting synergies among stakeholders. While its impact is still emerging, with its first meeting held in 2024, the Alliance represents a significant step towards fostering regional integration and capacity-building.

International support continues to play a pivotal role in advancing regional e-commerce and digital economy initiatives in the Pacific. Donor partners, such as Australia, New Zealand, the United States, the European Union, the Republic of Korea, China and Japan have made significant contributions to improving digital infrastructure and building capacity across the region.

- USAID launched the Digital Connectivity and Cybersecurity Partnership to enhance digital access and workforce capacity, including developing curricula for regional universities to meet the growing demand for digital skills.

International support is key to advancing regional e-commerce and digital economy initiatives in the Pacific.



- The Governments of Australia and New Zealand have supported the Pacific Agreement on Closer Economic Relations Plus Implementation Unit's e-commerce implementation package, which aims to bolster e-commerce capacity in the Pacific. In late 2023, the Unit facilitated the development and roll-out of the E-commerce Business Toolkit, designed to strengthen start-up ecosystems for MSMEs in Niue, Tonga, Tuvalu and Vanuatu.
- The Pacific Digital Economy Programme continues to support the region through its four workstreams, leveraging the collective expertise and networks of its implementing agencies. By engaging diverse stakeholders—including governments, development partners and regional organizations—it has successfully attracted funding from the likes of the Governments of Australia/ New Zealand and the European Union, and aligned efforts with shared regional priorities. Activities include supporting five Pacific e-commerce entrepreneurs to participate in the e-trade for women masterclass in Kuala Lumpur, the Pacific Cyber Law study, and deployment of the UNCTAD eTrade reform tracker regionally.
- Australia, the United States and Japan are the top three donor partners supporting the implementation of the key policy areas of the PRESR. However, due to underreporting by donor partners and implementing agencies, some contributions have not been fully captured in the implementation results (PIFS, 2024a).

However, challenges persist in ensuring the effective delivery of these initiatives. Duplication of efforts among agencies working on e-commerce, digital trade and digital finance, along with competition for funding from the same donor partners, often undermines progress. Overlapping initiatives by regional and international organizations lead to inefficiencies and

fragmented priorities, reducing the overall impact of these efforts. Moreover, limited regional capacities constrain the ability of some initiatives to achieve their intended outcomes. Addressing these challenges requires better coordination, streamlined efforts and strengthened regional ownership to fully realize the potential of these transformative programmes. Initiatives like the Pacific E-commerce Alliance are moving in the right direction and can help alleviate some of these challenges by fostering collaboration and reducing fragmentation.

While international donors remain key supporters of regional initiatives, Pacific countries should seek to transition from reliance on external funding to greater national and regional investment. Prioritizing e-commerce within national budgets and establishing sustainable funding mechanisms for regional organizations will strengthen member countries' ownership of critical programmes. This shift is essential to ensuring Pacific countries lead the funding, implementation and long-term planning of regional initiatives, fostering self-reliance and sustainability.

To achieve this, pooling resources and fostering collaboration among member states can provide a strong foundation for e-commerce initiatives. Establishing regional funds or resource-sharing platforms would allow countries to collectively contribute to and access resources for digital economy projects. Such mechanisms would promote equitable funding distribution, minimize duplication and align efforts with regional priorities, ensuring more effective outcomes.

Regional cooperation also presents opportunities to attract private-sector investment in areas like digital infrastructure, digital payments and e-commerce platforms. PPPs can complement government efforts by providing financial resources and technical expertise. Engaging the private sector not only expands funding options but can also foster long-term economic growth and resilience.

Prioritizing e-commerce in national budgets and creating sustainable funding will strengthen member countries' ownership.



Ultimately, strengthening domestic capabilities and resources is key to realizing the vision of a thriving Pacific digital economy. Enhanced collaboration, ownership, regional funding mechanisms and private-sector engagement will empower Pacific nations to address shared challenges and seize emerging opportunities.

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In conclusion, significant barriers continue to hinder digital trade and e-commerce growth in the Pacific, despite notable progress achieved. Remaining challenges underscore the critical need for a coordinated and enduring support framework. Addressing these issues requires solutions tailored to the Pacific's unique characteristics, cultural values and economic realities.

Looking ahead, as the regional e-commerce landscape evolves to meet global trends, a planned review of the PRESR in 2026–2027 will be pivotal. This update, aligned with the strategy's five-year cycle, offers an opportunity to reassess priorities and embrace emerging opportunities while addressing new challenges. By remaining adaptive and forward-looking, the Pacific can build a resilient, sustainable and dynamic digital economy that benefits all communities across the region.

Central to this transformation is the empowerment of digital entrepreneurs, particularly women, who are increasingly leveraging e-commerce as a pathway to economic inclusion and global market access. By embracing global platforms and digital tools, entrepreneurs can overcome traditional barriers. Supporting their participation in the digital economy is vital—not only as an economic imperative but also as a reflection of the Pacific's commitment to inclusivity, equality and the cultural values embodied in the ochre elements—strength, connection and sustainability. Realizing this vision requires a comprehensive

approach that prioritizes the development of essential digital skills and entrepreneurship capacity. Training programmes and capacity-building initiatives tailored to the needs of small businesses, start-ups and underrepresented groups can enable a new generation of Pacific entrepreneurs to thrive in the digital economy. Investment in vital infrastructure—such as high-speed Internet, reliable digital payment systems and modern logistics networks—is equally critical to create an enabling environment that supports innovation and growth.

At the same time, fostering a robust policy and regulatory environment that aligns with global standards is crucial. By harmonizing e-commerce laws, improving data protection frameworks and facilitating cross-border trade, Pacific countries can create a foundation for seamless regional integration and global competitiveness.

Collaboration and partnerships remain essential. Development partners, regional organizations and the private sector must work together to mobilize resources, share expertise and drive innovation in key areas such as digital payments, infrastructure development and entrepreneurial ecosystems. These partnerships are essential to help countries build stronger domestic capabilities and take greater ownership of their e-commerce initiatives. By enhancing their ability to leverage support from development partners, countries can more effectively integrate digital strategies into national and regional development plans, paving the way for sustainable growth and resilience.

The Pacific's journey towards a thriving digital economy is a shared responsibility. By investing in digital skills, vital infrastructure and an enabling environment, and by embracing the entrepreneurial potential of its people, the region can transform its digital future into one that is inclusive, sustainable and empowering.





## Annex 1: List of interviewees

Name	Title	Company/organization	Country/region	Dates
<b>Mr. Pier Smulder</b>	General Manager, Australia and New Zealand	Alibaba Group	Pacific	15 February 2024
<b>Mr. Sam Saili</b>	CEO and Co-founder	Sky Eye Pacific; Maua	Samoa	16 February 2024; 11 June 2024
<b>Mr. George Fong</b>	Founder	TicketMax	Fiji	27 February 2024
<b>Ms. Sheilendra Prasad</b>	Head of E-commerce and Digital Finance Services	Vodafone	Fiji	29 February 2024
<b>Ms. Shelly Burich</b>	Founder	Vaola Vanilla	Samoa	5 March 2024
<b>Ms. Lee-Ann Sacket</b>	Founder	Eau Des Iles	Vanuatu	1 March 2024
<b>Mr. Luke Whyley</b>	General Manager	Packleader	Fiji	6 March 2024
<b>Ms. Sagufta Janif</b>	Executive Director	Outsource Fiji	Fiji	7 March 2024
<b>Mr. Erik van Duivenbode</b>	General Manager	Mindpearl	Fiji	7 March 2024
<b>Ms. Sarah Mathews</b>	Managing Director	E-Tourism Frontier	Europe, the Middle East and Africa /Asia Pacific	25 March 2024
<b>Ms. Shenal Harakh</b>	Founder and Developer	Shenel	Fiji	21 April 2024
<b>Ms. Jonina Wetzell</b>	Co-founder	Kahuto Pacific	Fiji	18 April 2024
<b>Ms. Nicole Isifu</b>	Managing Director	AgBook Agribusiness Training and Advisory	Papua New Guinea	15 April 2024
<b>Mr. Arthur Cocker</b>	Founder	Defiant Robotics	Australia	15 June 2023
<b>Ms. Ani Mataele</b>	Owner	Esiola Quality Furniture	Tonga	16 August 2023
<b>Ms. Seluvaia Kauvaka</b>	President	TWICT	Tonga	27 April 2024
<b>Ms. Sonal Sharma</b>	Head of Communications	Tourism Fiji	Fiji	14 October 2024
<b>Mr. Kiniviliame Raicebe</b>	Marketing Manager	Pacific Tourism Organization	Pacific	27 August 2024
<b>Mr. Peter Nobbs</b>	Amazon Growth Strategist	Atomic AMZ	Australia	2 October 2024

Source: UNCTAD.



# References

- Asian Development Bank (2019). *Pacific Finance Sector Brief: Kiribati*. Sydney.
- Asian Development Bank (2022). *Asian Development Outlook 2022 Update: Entrepreneurship in the Digital Age*.
- Asian Development Bank (2023). *Women's Economic Empowerment in the Pacific Region: A Comprehensive Analysis of Existing Research and Data*.
- Association of Southeast Asian Nations (2021). *ASEAN Digital Masterplan 2025*. Jakarta.
- Australia Papua New Guinea Business Council (2024). Starlink licence to revolutionise Papua New Guinea's internet landscape. 8 January. Available at <https://apngbc.org.au/news/starlink-license-to-revolutionise-papua-new-guineas-internet-landscape/>.
- Australian Department of Foreign Affairs and Trade (2017). *Women In Leadership Synthesis Report: Informing the Pacific Women Shaping Pacific Development Roadmap 2017–2022*.
- Bhatia, K (2024). Our new report on AI's opportunity for developing countries. Google. 3 April. Available at <https://blog.google/outreach-initiatives/public-policy/google-ai-developing-countries-growth/> (accessed 12 November 2024).
- Boccuzzi E (2021). *The Future of Work for Women in the Pacific Islands*. The Asia Foundation.
- Broadband Commission for Sustainable Development (2018). *Working Group Report: Digital Entrepreneurship*.
- Cavalcanti, DB (2024). G20: Digital connectivity to advance sustainable development. ITU. 1 October. Available at <https://www.itu.int/hub/2024/10/g20-digital-connectivity-to-advance-sustainable-development/>.
- Central Bank of Solomon Islands (2023). *2023 Annual Report*.
- Chanel S (2022). Parametric Insurance Product becomes first solution admitted for testing in FinTech Regulatory Sandbox. UNCDF. Available at <https://www.uncdf.org/article/7397/parametric-insurance-product-becomes-first-solution-admitted-for-testing-in-fintech-regulatory-sandbox>.
- Charles L, Xia S and Coutts AP (2022). *Digitalization and Employment: A Review*. ILO.
- Common Market for Eastern and Southern Africa (2024). Infrastructure and logistics. Available at <https://www.comesa.int/infrastructure-logistics/> (accessed 25 June 2024).
- Cruz M and Zhu T (2023). *Developing Entrepreneurial Ecosystems for Digital Businesses and Beyond: A Diagnostic Toolkit*.
- Curry GN, Koczberski G and Connell J (2012). Introduction: enacting modernity in the Pacific? *Australian Geographer*. 43(2):115–125.
- Digital Future Society (2024). Global perspectives on women, work and digital labour platforms. Available at <https://digitalfuturesociety.com/global-perspectives-on-women-work-and-digital-labour-platforms/>.
- Fiji National University (2022). FNU provides free reskilling and upskilling short courses. 22 January. Available at <https://www.fnu.ac.fj/blog/news/fnu-provides-free-reskilling-and-upskilling-short-courses/> (accessed 29 November 2024).
- Fiji One News* (2024). Starlink to boost internet in rural and maritime Fiji. 19 January. Available at <https://fijionenews.com.fj/starlink-to-boost-internet-in-rural-and-maritime-fiji/>.
- Fiji Sun* (2023). Meet the Rising Star in Digital Upskilling Women in Fiji. 19 November. Available at <https://www.illumify.com/en/news/215025/meet-the-rising-star-in-digital-upskilling-women-in-fiji>.
- Global Entrepreneurship Monitor (2022). *GEM 2021/22 Women's Entrepreneurship Report: From Crisis to Opportunity*.
- Global System for Mobile Communications Association (2019). *The Mobile Economy: Pacific Islands 2019*. London.
- Global System for Mobile Communications Association (2023a). *The Mobile Economy: Pacific Islands 2023*. London.
- Global System for Mobile Communications Association (2023b). *The Mobile Gender Gap Report 2023*. London.
- Goodwin-Groen DR and Klapper DL (2023). *Reaching Financial Equality for Women* (2023 edition). Better Than Cash Alliance.
- Government of Fiji (forthcoming). Fiji national e-commerce strategy (2025–2029).
- Government of Samoa (2022). *Samoa: E-Commerce Strategy and Roadmap*.
- Government of Solomon Islands (2022). *Solomon Islands: National E-Commerce Strategy 2022–2027*.
- Government of the Cook Islands (2023). *Cook Islands E-commerce Acceleration Work Plan*.



- Government of Timor-Leste (forthcoming). National e-commerce strategy.
- Hernando RC and Calizo SC (2024). Unpacking issues in the gig economy: Policy approaches to empower women in APEC. Asia-Pacific Economic Cooperation Policy Brief No. 56. Available at [https://www.apec.org/docs/default-source/publications/2024/1/224\\_psu\\_unpacking-issues-in-the-gig-economy.pdf?sfvrsn=55c3a4fd\\_2](https://www.apec.org/docs/default-source/publications/2024/1/224_psu_unpacking-issues-in-the-gig-economy.pdf?sfvrsn=55c3a4fd_2).
- Hooton C (2022). *Global State of Small Business*. Meta.
- Horst HA and Foster RJ (2024). 5G and the digital imagination: Pacific Islands perspectives from Fiji and Papua New Guinea. *Media International Australia*. 190(1):54–67.
- Hunnicutt T (2023). Exclusive: Google to run internet cables to Pacific islands in Australia-US deal. *Reuters*. 25 October.
- International Labour Organization (2016). Gender equality in the labour market in Asia and the Pacific and the Arab States.
- International Labour Organization (2019). *Digitalization and Decent Work: Implications for Pacific Island Countries*.
- International Labour Organization (2021a). *Empowering Women at Work: Government Laws and Policies for Gender Equality*.
- International Labour Organization (2021b). *Small Goes Digital: How Digitalization Can Bring About Productive Growth for Micro and Small Enterprises*.
- International Labour Organization (2023). Providing adequate and sustainable social protection for workers in the gig and platform economy. Technical paper prepared for the 1st meeting of the Employment Working Group under the Indian presidency.
- International Labour Organization (2024). *A Rough Guide to Inclusive Entrepreneurship Ecosystem Development*.
- International Labour Organization and Asian Development Bank (2023). *Where Women Work in Asia and the Pacific: Implications for Policies, Equity and Inclusive Growth*.
- International Monetary Fund, Organisation for Economic Co-operation and Development, UNCTAD, World Bank and World Trade Organization. (2023). *Digital Trade for Development*. WTO publications. World Trade Organization. Geneva.
- International Monetary Fund, Organisation for Economic Co-operation and Development, World Trade Organization, and UNCTAD (2023). *Handbook on Measuring Digital Trade*.
- International Telecommunication Union (2018). *Digital Skills Toolkit*.
- International Telecommunication Union (2022). *Global Connectivity Report 2022*. Geneva.
- International Telecommunication Union (2023a). ICT prices. Available at <https://www.itu.int/en/ITU-D/Statistics/Pages/ICTprices/default.aspx>.
- International Telecommunication Union (2023b). “Statistics: Global and Regional ICT Data” (November update). Available at <https://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx> (accessed 12 February 2024).
- International Telecommunication Union (2024). *Measuring Digital Development: Facts and Figures. Focus on Small Island Developing States*.
- International Telecommunication Union Data Hub (2024). “Indicator Catalogue”. Available at <https://datahub.itu.int/indicators/> (accessed 14 October 2024).
- Internet Society Foundation (2023). Decolonizing the Internet: Global governance of LEO satellite broadband. Governmental Engagement Policy Paper. Available at [https://intgovforum.org/sites/default/files/webform/igf\\_2023\\_workshop\\_proposal\\_form/241906/OUTPUT\\_2\\_Policy\\_Paper\\_Governmental\\_engagement\\_0.pdf](https://intgovforum.org/sites/default/files/webform/igf_2023_workshop_proposal_form/241906/OUTPUT_2_Policy_Paper_Governmental_engagement_0.pdf).
- Investment Fiji (2023). Business process outsourcing. Available at <https://www.investmentfiji.org.fj/sector-opportunities/business-process-outsourcing> (accessed 29 November 2024).
- Islands Business* (2024a). Temporary ban on Starlink imports in Samoa. 12 April. Available at <https://islandsbusiness.com/news-break/temporary-ban-on-starlink-imports-in-samoa/>.
- Islands Business* (2024b). Government considering issuing Starlink a licence in Tonga. 14 May. Available at <https://islandsbusiness.com/news-break/tonga-starlink/>.
- Jaller LD et al. (2020). *The Regulation of Digital Trade*. World Bank, Washington, D.C.
- Katakam A (2023). Open regulated global payments inter-network. Exploratory paper. UNCDF.
- Keni P (2023). Online business brings old problems along with new opportunities for women entrepreneurs. 6 March. Available at <https://asiapacific.unwomen.org/en/stories/feature-story/2023/03/online-business-brings-old-problems-along-with-new-opportunities>.
- Klapper L (2017). How digital payments can benefit entrepreneurs. *IZA World of Labor*.
- Makun K et al. (2022). Information and communications technology, health, and gender equality: Empirical evidence from a panel of Pacific developing economies. *PLOS ONE*. 17(6):e0269251.



- Marshall A (2024). A new rural digital divide? Taking stock of geographical digital inclusion in Australia. *Media International Australia*. 190(1):68–84.
- Moana Research (2020). *Pacific Prosperity through Social Enterprise – a Policy and Practice Rubric*. Auckland, New Zealand.
- Organisation for Economic Co-operation and Development (2022). *Tax Policy and Gender Equality: A Stocktake of Country Approaches*. Paris.
- Pacific Data Hub (2022). *The Role of Data in Today's Digital Economy* [Video]. 22 June. YouTube. Available at [https://www.youtube.com/watch?v=D2XV93n\\_c6Y](https://www.youtube.com/watch?v=D2XV93n_c6Y).
- Pacific Islands Forum Secretariat (2017). Culture: Driver of sustainable development and economic growth. Available at <https://forumsec.org/publications/culture-driver-sustainable-development-and-economic-growth>.
- Pacific Islands Forum Secretariat (2020). *Kingdom of Tonga: National E-Commerce Readiness Assessment*.
- Pacific Islands Forum Secretariat (2021). *Pacific Regional E-Commerce Strategy and Roadmap*.
- Pacific Islands Forum Secretariat (2022a). *2050 Strategy for the Blue Pacific Continent*.
- Pacific Islands Forum Secretariat (2022b). *Monitoring and Evaluation 1st Report for the Pacific Regional E-Commerce Strategy and Roadmap*.
- Pacific Islands Forum Secretariat (2024a). *Monitoring and Evaluation 2nd Report for the Pacific Regional E-Commerce Strategy and Roadmap*.
- Pacific Islands Forum Secretariat (2024b). The Pacific responds to declining Correspondent Banking Relations in the region. Available at <https://pacificcommerce.org/the-pacific-addresses-decline-of-cbr/>.
- Pacific Private Sector Development Initiative (2021). *Leadership Matters: Benchmarking Women's Business Leadership in the Pacific*.
- Pacific Private Sector Development Initiative (2023). *Invisible Hands: Enabling Pacific Women in the Informal Economy*.
- Pacific Private Sector Development Initiative (2024a). Innovative financing mechanisms in the Pacific. PSDI Pacific Finance Sector Policy Paper Vol.3, January. Available at <https://www.pacificpsdi.org/assets/Uploads/PFS-Innovative-Financing-Mechanism-in-the-Pacific.pdf>.
- Pacific Private Sector Development Initiative (2024b). *Unlocking Potential: A Gender Inclusive Private Sector Framework*.
- Pacific Trade Invest Australia (2024). *Pacific Islands Export Survey 2024*.
- Pennings SM (2022). A Gender Employment Gap Index (GEGI): A simple measure of the economic gains from closing gender employment gaps, with an application to the Pacific Islands. Policy Research Working Paper No. 9942. World Bank. Washington, D.C.
- Prieger JE (2015). The broadband digital divide and the benefits of mobile broadband for minorities. *The Journal of Economic Inequality*. 13(3):373–400.
- Reddy EV et al. (2022). Readiness and perception of Pacific students to mobile phones for higher education. *Technology, Knowledge and Learning*. 28(3):1113–1132.
- Reserve Bank of Fiji (2023). National Financial Inclusion Taskforce notes significant strides towards improving financial inclusion. 20 June. Available at <https://www.rbf.gov.fj/41892-2/>.
- Samoa Qualifications Authority (2021). *Post School Education and Training Statistical Bulletin*. Samoa Qualifications Authority.
- Sanerivi SS (2024). Starlink services approved. *Samoa Observer*. 21 March.
- Scheyvens R et al. (2020). Business serves society: Successful locally-driven development on customary land in the South Pacific. *Geoforum*. 112:52–62.
- Shust P (2022). Pacific sandbox unites regulators in supporting fintech innovation. Alliance For Financial Inclusion. 14 January. Available at <https://www.afi-global.org/newsroom/blogs/pacific-sandbox-unites-regulators-in-supporting-fintech-innovation/>.
- Speidel U (2024). The Starlink vs cable conundrum in the Pacific. APNIC Blog. 30 October. Available at <https://blog.apnic.net/2024/10/30/the-starlink-vs-cable-conundrum-in-the-pacific/>.
- Steven H and Vunibola S (2021). The resiliency of Indigenous entrepreneurial settings in the South Pacific. In: Weaver, H, ed. *The Routledge International Handbook of Indigenous Resilience*. Routledge. London.
- Tanner, J (2024). Fiji telcos are gearing up for 5G launches later this year. 18 March. Available at <https://developingtelecoms.com/telecom-technology/wireless-networks/16422-fiji-telcos-are-gearing-up-for-5g-launches-later-this-year.html>.
- The Fiji Times* (2024). The rise of MSME networks in Fiji. 16 March.
- Tonga, Ministry of Trade and Economic Development (2021). *Tonga E-Commerce Strategy and Roadmap*.
- UN Women (2022a). *Two Years On: The Lingering Gendered Consequences of COVID-19 in Asia and the Pacific*.
- UN Women (2022b). Two years on: The lingering gendered effects of the COVID-19 pandemic in Tonga.



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- Available at <https://data.unwomen.org/sites/default/files/documents/Publications/Asia%20Pacific/RGA%20Country%20Factsheet%20-%20Tonga%20-%20Final.pdf>.
- UN Women (2022c). Women's economic empowerment brief for 14 Pacific island countries and territories. Available at [https://asiapacific.unwomen.org/sites/default/files/2022-12/UN\\_WOMEN\\_WEE.pdf](https://asiapacific.unwomen.org/sites/default/files/2022-12/UN_WOMEN_WEE.pdf).
- UN Women (2023). *Pathways towards Decent Work in the Digitally Enabled Care Economy in Southeast Asia*.
- United Nations Capital Development Fund (2021a). *Entrepreneurship Ecosystem in The Pacific: Network Analysis and Mapping of Institutions Supporting Entrepreneurship*.
- United Nations Capital Development Fund (2021b). Perspectives on emerging e-commerce in the Pacific. Available at <https://www.rfilc.org/wp-content/uploads/2021/11/Perspectives-On-Emerging-E-Commerce-in-the-Pacific.pdf>.
- United Nations Capital Development Fund (2022). The Pacific Islands FinTech Innovation Challenge Winners Announced 1 August. Available at [https://www.uncdf.org/article/7888/the-pacific-islands-fintech-challenge-winners-announced?utm\\_source=chatgpt.com](https://www.uncdf.org/article/7888/the-pacific-islands-fintech-challenge-winners-announced?utm_source=chatgpt.com).
- United Nations Capital Development Fund (2023a). *Assessing Digital and Financial Literacy in Fiji: A Survey on Knowledge, Skills and Access*. Suva.
- United Nations Capital Development Fund (2023b). *Assessing Digital and Financial Literacy in Papua New Guinea: A Survey on Knowledge, Skills and Access*. Suva.
- United Nations Capital Development Fund (2023c). *Assessing Digital and Financial Literacy in Samoa: A Survey on Knowledge, Skills and Access*. Suva.
- United Nations Capital Development Fund (2023d). *Assessing Digital and Financial Literacy in Solomon Islands: A Survey on Knowledge, Skills and Access*. Suva.
- United Nations Capital Development Fund (2023e). *Assessing Digital and Financial Literacy in Timor Leste: A Survey on Knowledge, Skills and Access*. Suva.
- United Nations Capital Development Fund (2023f). *Assessing Digital and Financial Literacy in Tonga: A Survey on Knowledge, Skills and Access*. Suva.
- United Nations Capital Development Fund (2023g). *Assessing Digital and Financial Literacy in Vanuatu: A Survey on Knowledge, Skills and Access*. Suva.
- United Nations Capital Development Fund (2023h). *Inclusive Digital Economy Scorecard (IDES) Report – Tonga 2022*.
- United Nations Capital Development Fund (2024). *Pacific Islands Entrepreneurship Expo: Building a Sustainable Entrepreneurship Ecosystem in the Pacific Islands – Report*. Available at <https://www.uncdf.org/article/8713/pacific-islands-entrepreneurship-report-building-a-sustainable-entrepreneurship-ecosystem-in-the-pacific-islands>.
- UNCTAD (2010). *Information Economy Report 2010: ICTs, Enterprises and Poverty Alleviation* (United Nations publication. Sales No. E.10.II.D.17. Geneva).
- UNCTAD (2015). *Information Economy Report 2015: Unlocking the Potential of E-Commerce for Developing Countries* (United Nations publication. Sales No. E.15.II.D.1. New York and Geneva).
- UNCTAD (2017). *Information Economy Report 2017: Digitalization, Trade and Development* (United Nations publication. Sales No. E.17.II.D.8. New York and Geneva).
- UNCTAD (2019). *Digital Economy Report 2019: Value Creation and Capture: Implications for Developing Countries* (United Nations publication. Sales No. E.19.II.D.17. New York and Geneva).
- UNCTAD (2021). *Digital Economy Report 2021: Cross-Border Data Flows and Development: For Whom the Data Flow* (United Nations publication. Sales No. E.21.II.D.18. Geneva).
- UNCTAD (2022). *Fostering Women Entrepreneurship in the Digital Economy* (United Nations publication. Sales No. E.22.II.D.47. New York).
- UNCTAD (2023). *Digital Economy Report Pacific Edition 2022: Towards Value Creation and Inclusiveness* (United Nations publication. Sales No. E.22.II.D.52. New York and Geneva).
- UNCTAD (2024a). *Building Digital Readiness: From Assessments to Implementation*.
- UNCTAD (2024b). Business e-commerce sales and the role of online platforms. UNCTAD Technical Notes on ICT for Development No. 1 (United Nations publication. UNCTAD/DTL/ECDE/2024/3. Geneva).
- UNCTAD (2024c). *Digital Economy Report 2024: Shaping an Environmentally Sustainable and Inclusive Digital Future* (United Nations publication. Sales No. E.24.II.D.12. New York and Geneva).
- UNCTAD (forthcoming). Gap analysis of cyberlaws in the Pacific Small Islands Developing States.
- United Nations Development Programme (2019). *Human Development Report 2019: Beyond Income, Beyond Averages, Beyond Today – Inequalities in Human Development in the 21st Century* (United Nations Publications, Sales no.: E.20.III.B.1, New York).
- United Nations Development Programme (2023). *Accelerating The SDGs Through Digital Public Infrastructure: A Compendium of The Potential of Digital Public Infrastructure*.



- United Nations Economic and Social Commission for Asia and the Pacific (2023). Digital gender divide prevents the Asia-Pacific region from benefiting from untapped talent in women and girls – UN. 8 March. Available at <https://www.unescap.org/news/digital-gender-divide-prevents-asia-pacific-region-benefiting-untapped-talent-women-and-girls>.
- United Nations Economic and Social Commission for Asia and the Pacific (2024). *Asia and the Pacific SDG Progress Report 2024 : Showcasing Transformative Actions* (United Nations Publication. Sales no: E.24.II.F.1. New York).
- United Nations Economic and Social Commission for Asia and the Pacific, UNCTAD, and United Nations Industrial Development Organization (2023). *Asia-Pacific Trade and Investment Report 2023/24 : Unleashing Digital Trade and Investment for Sustainable Development* (United Nations Publications, Sales No. E.23.II.F.15, New York).
- United Nations Educational, Scientific and Cultural Organization (2023). *Mapping Strengths And Challenges: Women in Innovation in Asia-Pacific*. JAK/SC/PCB/2023/04 (United Nations Publication, Jakarta).
- United Nations General Assembly (2024). Entrepreneurship for sustainable development. A/79/208. New York. 22 July.
- United Nations Population Fund (2023). Violence against women regional snapshot.
- United States Agency for International Development (2024). *Digital Ecosystem Country Assessment (DECA): Pacific Islands*.
- Vanuatu, Ministry of Tourism, Trade, Commerce and Ni-Vanuatu Business (2022). *Vanuatu: E-Commerce Strategy and Roadmap*.
- World Bank (2021). *Digital ID to Enhance Financial Inclusion: A Toolkit for Regulatory Authorities*.
- World Bank (2022). *The Future of Pacific Tourism*.
- World Bank (2024a). *Women, Business and the Law 2024*. Washington, D.C.
- World Bank (2024b). *Pacific Economic Update – Back on Track? The Imperative of Investing in Education*. Washington, D.C.
- World Customs Organization (2022). *Framework of Standards for Cross-Border E-Commerce*.
- World Tourism Organization and Asian Development Bank. (2022). *COVID-19 and the Future of Tourism in Asia and the Pacific*. World Tourism Organization, Madrid.
- Woser, MT (2023). Leaving no one behind : ICT skills in Asia and the Pacific. Working Paper, October. UNESCAP Social Development Division.
- Zhou et al. (2024). Rise of digital money: Implications for Pacific island countries. IMF Departmental Paper No. 2024/003.











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