

CHAPTER I

Setting the scene



Unique challenges and opportunities of digital development in the Pacific region



Small economies and dispersion of Pacific SIDS are major obstacles to accessing international markets

8 out of 10 smallest economies globally

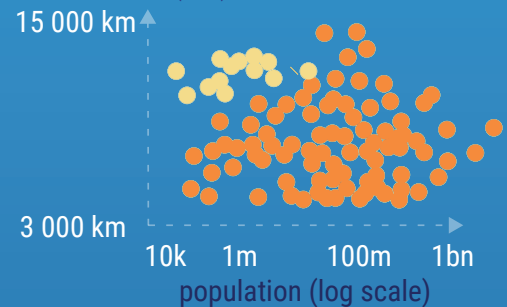
Geographically dispersed, with relatively small populations, Pacific SIDS are **far from major international markets**



Country	Number of populated islands per economy
Micronesia (Fed. States of)	65
Solomon Islands	347
French Polynesia	76
Vanuatu	67
Fiji	110
Tonga	36

number of populated islands per economy

average distance from market (km)



● Pacific SIDS ● Other countries



In this context, **digitalization plays a key role** in **connecting isolated areas, reducing trade distance** and fostering **urban-rural integration**



Data and data flows, either domestic or international, can bring **many benefits to Pacific SIDS** and **help achieving the SDGs**



With inclusion at the center, extra attention should be given to **people in vulnerable situations**

- low-income households
- women, girls & youth
- persons with disabilities



The net impact of the digital economy in the Pacific is hard to predict. Outcomes will partly depend on the **actions taken by policymakers in the region**

A. AN EMERGING DIGITAL ECONOMY

The spread of digital technologies is transforming social and economic activities around the globe. In developing countries, mobile Internet is revolutionizing how people produce, work, consume and interact with each other. In more developed countries, the digital economy is also closely associated with progress with the Internet of Things, cloud computing, data analytics, artificial intelligence, blockchain technologies, three-dimensional printing, and automation and robotics.

These trends are affecting economies in different ways. Business operations and value chains are increasingly digitalized – whether production processes, shipping and transportation networks, retail distribution, or investments and financing. Trade is increasingly conducted online and mobile payments are now ubiquitous in some countries. Between 2017 and 2021, the number of people shopping online increased from an estimated 1.3 billion to 2.3 billion people (from 24 per cent to 39 per cent of the global population aged 15 and older).¹ The COVID-19 pandemic has accelerated this process. People and businesses were brought online, with many services – including remote education, remote work and remote health services – becoming accessible to more people (UNCTAD, 2021a). In developing countries, B2C e-commerce – particularly for ride-hailing and food delivery – has emerged as a key trend associated with the digital economy.

Safe and effective digital technologies and platforms have become essential to sustainable development in the digital age, presenting opportunities to accelerate equitable and resilient growth. For example, digital technologies and platforms can reduce transaction costs for businesses and facilitate access to domestic and foreign markets. They can also enhance productivity and offer new opportunities for entrepreneurship, innovation and job creation. For micro, small and medium-sized enterprises (MSMEs) in particular, digital technologies can make it easier to overcome barriers to expansion, engage in peer-to-peer collaboration and use alternative funding mechanisms such as crowdfunding. In addition, cloud-based solutions have reduced the need for in-house information technology equipment and expertise (UNCTAD, 2019a and 2021b).

In the context of the data-driven digital economy, domestic or international data and data flows can bring many benefits as well as solutions to societal challenges, including those related to the SDGs (UNCTAD, 2021b). In this environment, access to data and the ability to transform data into digital intelligence have become crucial for commercial success (UNCTAD, 2019b). Many global firms use data from the digital economy to inform decision-making processes and corporate strategy, and to optimize production processes or supply chain logistics. Business models continue to emerge to support data collection, the production of insights from data, data storage, analysis and modelling (UNCTAD, 2019b). This is driving further expansion of the digital economy alongside new opportunities for value creation and capture.

The advance of digital technologies creates great potential. At the same time, it comes with social and economic challenges. Digital divides – both in terms of access to affordable digital technologies and capacities to make effective use of them – imply an unequal distribution of benefits. Automation and artificial intelligence could replace workers. Dominant global platforms could increase income inequality and contribute to a greater imbalance of market power and wealth. Digitalization may also have negative impacts on the bargaining power of users, consumers and workers, and result in the loss of privacy. Moreover, new forms of incendiary hate speech and cybercrime have emerged, which pose significant ramifications for individuals, governments, companies and organizations alike (UNCTAD, 2019b).

Although the pace of digital transformation varies, all economies and people are ultimately being affected. The broad implications of this shift will require policymakers to respond to these new challenges and opportunities, irrespective of the level of development or structure of the economy. The Pacific region is no exception.

In this context, inclusion should be placed at the centre of the digital development agenda. In order to leave no one behind, extra attention should be given to those in vulnerable situations, such as low-income households, women and girls, youth, persons with disabilities, and indigenous peoples. A digital economy that advances the inclusion of women and other marginalized groups could help bring about a host of economic and social benefits that support several SDGs under the 2030 Agenda for



Sustainable Development. Relevant SDGs include Goal 1 (No Poverty); Goal 2 (Zero Hunger); Goal 3 (Good Health and Well-being); Goal 4 (Quality Education); Goal 5 (Gender Equality); Goal 8 (Decent Work and Economic Growth); Goal 9 (Industry, Innovation and Infrastructure); and Goal 10 (Reduced Inequalities). Delivery on these and other related goals would have a positive impact on a range of human rights, including the rights to education, to food, to health, to an adequate standard of living and to work.

B. CHALLENGES TO DIGITAL DEVELOPMENT IN THE PACIFIC

The geographic, demographic and economic characteristics of Pacific small island developing states (SIDS) contribute to unique challenges related to digital development. Vast distances between small island economies present challenges related to Internet connectivity as well as merchandise trade and logistics, which depend heavily on relatively expensive seaport and airport infrastructure and transportation. Market and population sizes make the region less attractive for international investment. Internet penetration and use rates are relatively low due in part to large rural populations and low levels of literacy and digital skills. In addition, the multitude of local languages poses a challenge to developing online content and services that are relevant to the local population.

Most countries in the region are archipelago states that consist of a few main islands surrounded by smaller islands and atolls. Many of the islands are populated – Solomon Islands has more than 300 populated islands, Fiji more than 100 and French Polynesia more than 70. Moreover, a significant share of the population live away from the main island in most countries. In Solomon Islands and Vanuatu, more than 70 per cent of the population does not live on the main island (Utz, 2021). In addition, Pacific countries generally have a small landmass and islands are widely dispersed both within and between countries (see annex table 1). For instance, Nauru, with a land surface of only 20 km², is the smallest island nation and the fourth-smallest country in the world. Even compared to other SIDS, those in the Pacific are generally located the farthest from each other and from the main global economic markets (UNCTAD, 2022c).² The closest capitals within the region are those of Kiribati and Marshall Islands, which are still separated by 600 km. These geographic realities in the Pacific create fundamental barriers to rural development, education attainment, connectivity and governance.

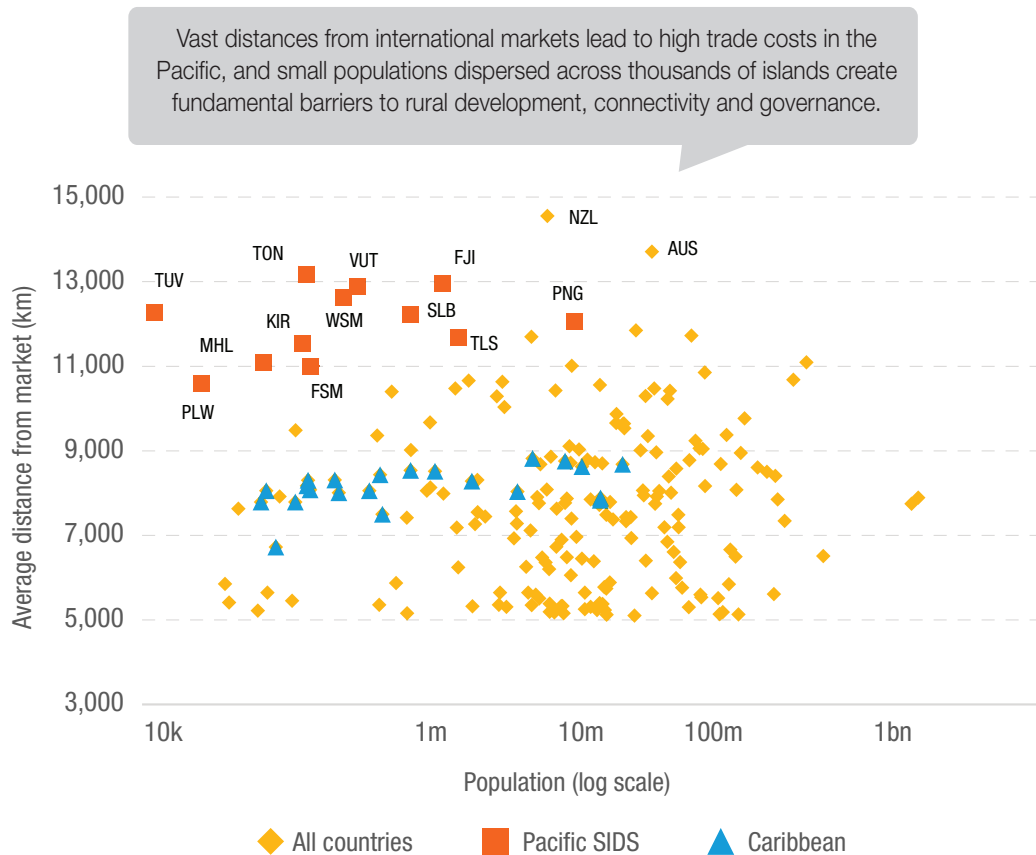
Most Pacific SIDS have relatively small populations and many people live in rural and isolated areas (see annex table 1). Figure I.1 shows the relationship between population size and the average distance from international markets and illustrates how remote Pacific SIDS are as a group of countries, even compared with Caribbean countries, for example. About three-quarters of the population lives in rural areas,³ which is well above the global average and the levels of most other country groupings. Challenges such as low levels of secure Internet connectivity can inhibit equitable access to social and economic opportunities (see chapter II). Additionally, low levels of access to affordable and reliable electricity transmission networks are a barrier to economic participation. A relatively high share of the population in some Pacific SIDS still has no postal services (see annex table 2).⁴ This makes last-mile delivery of goods virtually impossible in many areas.

Linguistic diversity in the region is significant, with many local languages (see annex table 1). The largest Pacific SIDS, Papua New Guinea, has the highest number of living languages in the world (820), accounting for 12 per cent of the world's spoken languages, while Vanuatu, with just over 300,000 inhabitants, has 115 languages. The Linguistic Diversity Index⁵ (UNESCO, 2009) places Papua New Guinea, Vanuatu and Solomon Islands as the three countries with the highest levels of linguistic diversity in the world. This diversity has implications for the development of local digital content and broader participation in the digital economy.

If the digital landscape does not consider linguistic diversity, population groups will likely be excluded from digital interactions. For instance, access to data and information will be restricted for speakers of non-dominant languages if they cannot express themselves or create content in their own local languages. This may further increase marginalization of certain populations and limit social and economic opportunities. Literacy levels could also have an impact on digital development. Although the adult literacy rate is above 96 per cent in Fiji, Marshall Islands, Palau, Samoa and Tonga, some



Figure I.1. Population size and access to international markets, all countries, Caribbean countries and Pacific SIDS



Source: World Bank (2017).

Notes: The x-axis is in log scale. The y-axis represents the average distance from markets (the average distance to other economies weighted by their GDP). Country groupings are of the source; for the purpose of this report, Pacific island countries were renamed as Pacific SIDS.

countries still lag. This is especially the case for Solomon Islands and Timor-Leste, where 20 per cent or more of the population is still illiterate (see annex table 2).

Despite these challenges, digital technologies have much to offer to the region. Digitalization is one of the key solutions that can address the lack of physical infrastructure, cover the vast distances in the region and digitally connect isolated areas. It can be critical in fostering inclusive domestic and regional digital trade by addressing uncertainty and asymmetries of information, and by improving the security of transactions among large numbers of small, widely dispersed players. For isolated archipelago nations, digital platforms can provide opportunities to open or expand access to local, regional and international markets. By generating economic activity and innovation across sectors and industries, e-commerce can contribute to growth in productive sectors. This will lead to the integration of rural and urban markets as well as to job creation and export competitiveness. Digital financial services can accelerate financial inclusion of low-income groups, MSMEs and other unbanked and underbanked segments.

C. SMALL TRADE-DEPENDENT ECONOMIES

Even though there is great potential for digitally driven growth in the Pacific, the size and fragility of economies in the Pacific region present several challenges. Most countries are small, have narrow-based economies and are physically isolated from major markets. It is challenging for small economies

to achieve economies of scale both in domestic public and private production. High transport costs prevent these economies from overcoming this challenge through specialization and trade (Utz, 2021). Integration into regional and global trading systems is further hampered by weak connections to networks of value added trade due to isolation from global air and maritime shipping networks. Both agriculture and manufacturing trade costs for Pacific SIDS are often two or three times as high as costs for Australia and New Zealand (Shepherd, 2016).

The ability of Pacific SIDS to cope with external shocks and mitigate the risks varies considerably. More developed regional economies have higher levels of global integration than others, yet many of these Pacific economies are heavily reliant on imports and limited supplies of foreign-sourced income (remittances, exports and tourism-related income). The fragility of national economies is also affected by macroeconomic imbalances alongside substantial variation in natural resource endowments. In addition, the region is highly vulnerable to climate change and natural disasters such as tropical storms and earthquakes, which further contributes to lower economic resilience.

The Pacific region is home to eight of the smallest 10 economies globally, and Kiribati, Solomon Islands, Timor-Leste and Tuvalu are classified as LDCs.⁶ In 2021, the average gross domestic product (GDP) per capita for Pacific SIDS was \$3,966 (see annex table 2), while the average gross national income (GNI) – the total earnings of a resident of an economy – was \$3,798 in 2020. The five most-populated Pacific SIDS – Papua New Guinea, Timor-Leste, Fiji, Solomon Islands and Vanuatu – represent almost 90 per cent of the population of Pacific SIDS, their GDP and GNI per capita was \$2,808 in 2021 and \$2,641 in 2020, respectively.⁷

Pacific SIDS are highly dependent on the import of consumer goods and services. The export sector is narrower and is focused on raw materials and agriculture, with the addition of tourism and related services in some countries. In 2021, trade openness was 30 per cent of GDP (see annex table 3), still below the level observed before the COVID-19 crisis.⁸

Maritime transport is the main option for moving cargo internationally and domestically. The Pacific region's distance from markets creates challenges to trade. Low levels of maritime connectivity in Pacific SIDS are a major obstacle to their economic development. Most do not meet the economic threshold of demand for private shipping companies to provide regular shipping at a profit (Pacific Community, 2011, cited by UNCTAD, 2022a). The Liner Shipping Connectivity Index⁹ – which measures a country's integration level into global liner shipping networks – generally ranks Pacific SIDS near the bottom (UNCTAD, 2022a).

Interisland logistics typically follow a 'hub-and-spoke' system, with cargo and passengers first brought into a country through a primary (international) port and then distributed to secondary ports or other remote outer islands (Utz, 2021). This has significant development implications. Outer island residents living along unprofitable routes are often underserved, limiting their access to essential supplies, education, health care and employment opportunities. For instance, Solomon Islands has a total of 300 inhabited islands but only around 22 locations have regular shipping services. Over 92 per cent of the country's outer islands do not have regular interisland shipping coverage (Utz, 2021).

Remittances to Pacific SIDS accounted for an average of 4.5 per cent of GDP in 2020 and form an important contribution to economies in the Pacific (see annex table 2). This contribution varies considerably among Pacific SIDS. For some countries – such as Papua New Guinea – the contribution is negligible, whereas in other countries it is a much higher share of GDP. For example, Samoa recorded remittances as a quarter of GDP. Tonga has the highest share globally at almost 40 per cent of GDP. Official development assistance (ODA) also plays an important role in the region and represented 7.5 per cent of GNI in 2020. This share of foreign aid in Pacific SIDS is as high as 13.9 per cent of GNI when not accounting for Papua New Guinea. As many as six Pacific SIDS are among the global top-10 ODA recipients, with Marshall Islands and Tuvalu occupying first and second place with 61 per cent and 58 per cent, respectively (see annex table 2).¹⁰

In terms of economic output, Pacific SIDS are generally dependent on the primary sector – with the value added of agriculture and fishery-related activities at 13 per cent of GDP – which is well above that of other SIDS and Caribbean countries (see annex table 3).¹¹ Industrial production in Pacific SIDS stood at 26 per cent of GDP in 2020 – with mining/utilities at 15 per cent of GDP. Mining is particularly present in Papua New Guinea (gold, oil and copper), Timor-Leste (oil, gas, other mineral fuels and



lubricants) and Nauru (phosphate). Manufacturing is well developed in Nauru (e.g. processing of coconut products) and Fiji (sugar production and the garment industry in addition to copper and gold mining) (UNCTAD, 2022c).

The services sector in Pacific SIDS represents 54 per cent of GDP on average, with the hospitality sector being particularly important.¹² Before the COVID-19 pandemic, inbound tourism accounted for 6 per cent of GDP in Pacific SIDS (2019), or 12 per cent when excluding Papua New Guinea. This sector was one of the major economic activities and sources of income for some countries: Cook Islands (64 per cent of GDP); Palau (33 per cent); Vanuatu (32 per cent); and Fiji (25 per cent) (see annex table 3).

The COVID-19 pandemic resulted in severe economic contractions in most Pacific SIDS (International Monetary Fund, 2022a and 2022b). Despite relative success in containing the health consequences of COVID-19, economic activity was significantly disrupted. Pacific SIDS were among the worst-affected developing economies in economic and fiscal terms, mainly due to the supply and demand shocks related to the tourism and fishery industries. Vulnerable populations in tourism-dependent Pacific SIDS were hit particularly hard, with migrant workers and tourism-dependent households emerging as increasingly vulnerable groups. Job creation and decent employment opportunities for individuals in physical proximity service jobs and informal work have also faced disruption. Young people, women and individuals with low levels of education have been disproportionately affected and inequalities have increased.

As digitalization accelerates, the future of Pacific SIDS will partly depend on the ability to leverage digital technologies for the benefit of their people. Although digital technologies can help achieve inclusive and sustainable development, they can also lead to new divides and greater inequality. The net impact of the digital economy in the Pacific is hard to predict but evidence from other regions suggests that it will be broadly disruptive. In this environment, policy decisions will be critical to ensuring that no one is left behind in the digital era. Continued support from international development partners will also be essential.

This report aims to provide a resource to inform effective policymaking in this complex environment. It presents a broad overview of the current digital economy landscape in the region and highlights key information about emerging trends and business models. Chapter II takes stock of data and trends related to the digital infrastructure in the Pacific and examines different aspects related to connectivity, followed by data and trends in ICT and Internet use. Chapter III highlights key policy areas that are relevant to value creation and capture in the Pacific, with a focus on digital platforms and e-commerce. Chapter IV focuses on the cross-cutting nature of e-commerce and the digital economy and the importance of taking action in different policy areas. Chapter V provides recommendations and pathways to support Pacific policymakers as they seek a way forward that maximizes the benefits and minimizes the risks of the digital era.

