

# Measuring digital development Facts and Figures: Focus on Small Island Developing States

March 2024



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Focus on Small Island  
Developing States**

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# Foreword



I am pleased to present *Facts and Figures: Focus on Small Island Developing States*, a thorough evaluation of digital connectivity in these distinctive countries.

In this special edition of ITU's *Facts and Figures* series, we explore the impressive progress and ongoing obstacles SIDS encounter amid the digital revolution. On the occasion of the fourth International Conference on Small Island Developing States (SIDS4), our goal is to provide stakeholders with accurate data to inform their decisions.

The connectivity challenge has grown more complex over the last decade. It's insufficient to simply connect the unconnected. Universal and meaningful connectivity - the possibility for everyone to enjoy a safe, satisfying, enriching, productive and online experience at an affordable cost - is the new policy imperative to harness the potential of connectivity and enable digital transformation.

SIDS share common issues: remoteness, limited markets, narrow economic bases, and high costs for energy and infrastructure. Moreover, they are highly vulnerable to climate change impacts, threatening their existence.

Digital connectivity is crucial in mitigating these challenges by enabling access to information, facilitating communication, and creating economic opportunities. It can improve disaster response, management, and access to critical services, often constrained by geographic and resource limitations in SIDS.

This publication offers a current view of SIDS connectivity and highlights gaps in our understanding, underscoring the urgent need for investment in data infrastructure and statistical capabilities as part of their development strategies.

I express my sincere gratitude to the United Nations Conference on Trade and Development (UNCTAD), for their insightful piece on e-commerce. This collaboration highlights the interconnectedness of digital infrastructure and the global marketplace, and how e-commerce can serve as a catalyst for sustainable development in SIDS. The synergy between ITU and UNCTAD reflects our shared vision of harnessing digital technologies as engines of innovation, inclusion, and prosperity.

Understanding our current location is necessary but only a first step to reach our intended destination. In addition to the assessment offered by the *Facts and Figures* series, ITU addresses SIDS' specific needs through multiple initiatives. Among these are the smart islands initiative, universal and meaningful connectivity, early warning systems for all, skills development, cybersecurity, and the design of national emergency telecommunication plans.

Through collaborative efforts and sharing knowledge and best practices, we are determined to hasten strides toward universal and meaningful connectivity. Let's acknowledge SIDS' successes and reaffirm our dedication to a connected, sustainable future for every island.

A handwritten signature in blue ink, appearing to read 'Cosmas Luckyson Zavazava'.

**Cosmas Luckyson Zavazava**  
Director, ITU Telecommunication Development Bureau

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## Introduction

Small Island Developing States (SIDS) face a distinct set of social, economic, and environmental issues. In 1992, the United Nations Conference on Environment and Development recognized these islands as a group with special needs. Two years later, the first global conference on Small Island Developing States adopted the Barbados Programme of Action to assist these countries in their development efforts.

Many SIDS are geographically remote from major markets, making transport and communications complicated and costly. Their narrow economies and small domestic markets often lead to high costs for energy, infrastructure, and public services, and SIDS are among the most vulnerable to the economic effects of climate change and natural disasters that, in some cases, threaten their survival.

By providing access to information, facilitating communication, and opening new economic opportunities, ICTs can play a pivotal role in addressing many of the challenges faced by SIDS, including disaster response and management through early warning systems and emergency communication networks, as well as access to education and healthcare services through remote learning and telemedicine that can mitigate the adverse effects of isolation.

ICTs can drive economic growth and diversification in SIDS by enabling new industries and enhancing competitiveness. E-commerce platforms help local businesses to reach global markets, in particular for ICT-enabled services, while digital financial services can provide access to banking for populations that are otherwise underserved. ICTs also support tourism, an important economic sector for many SIDS, by enabling digital marketing and improving the visitor experience through innovation.

Connectivity is a prerequisite to access these benefits, and thus, enhancing ICT infrastructure is critical. Many SIDS have made significant progress in increasing Internet penetration and mobile phone usage, but gaps in access and affordability remain. Bridging the digital divide is essential to ensure that all citizens can engage in the digital economy.

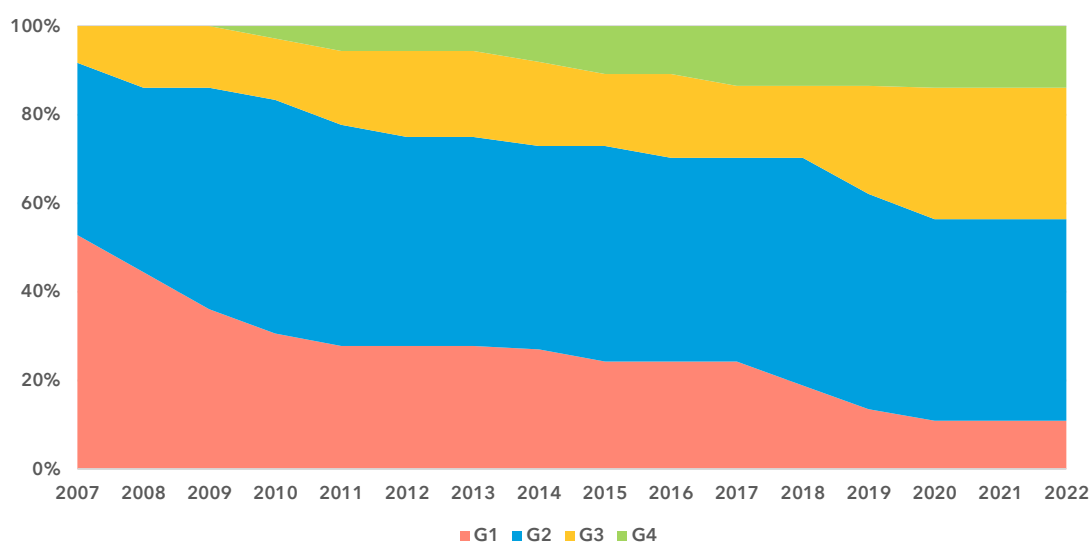
To capitalize on the opportunities afforded by ICTs, concerted efforts are needed to build robust ICT infrastructure, promote digital literacy, and foster an enabling regulatory environment. This statistical report sheds light on the current state and pace of progress of ICT connectivity in SIDS and identifies present and future gaps and opportunities.

## ICT regulation and digital policy frameworks

This section provides key insights into the trends, patterns and current state of ICT regulation and digital policies in SIDS, which are paramount for enabling inclusive and sustainable digital transformation for all. In many countries, universal and meaningful connectivity, a stepping stone towards this transformation, has been elevated to a policy imperative and remains pivotal in accelerating progress towards the achievement of national development priorities and the sustainable development goals (SDGs). SIDS on the other hand are moving at a slower pace and their policy and regulatory frameworks require further uplift to fast-track national efforts towards achieving sustainable development and resilient prosperity.

### *Evolution of ICT regulation in SIDS: steady progress*

#### Evolution of the generations of ICT regulation in SIDS



Note: The 'Generations of ICT regulation' are a composite benchmark for the overall development of national ICT regulatory frameworks based on the [ICT Regulatory Tracker](#) scores:

G1 - Command and control approach:  $0 < 40$

G2 - Early open markets:  $40 < 70$

G3 - Enabling investment and access:  $70 < 85$

G4 - Integrated telecommunication regulation:  $85 \leq 100$

Source: ITU

As ICT regulation evolves, SIDS have been slowly building up their institutional and regulatory frameworks. The group of SIDS is home to countries in all stages of ICT regulatory maturity, as reflected in the 87-point gap between the two countries in this group with the most and least advanced level of ICT regulation.

In 2013, only two SIDS, the Dominican Republic and Singapore, were among the 29 countries in the fourth generation of ICT regulation, G4, the most advanced stage of regulation. By 2022, Bahamas and Trinidad and Tobago had joined them in the G4 group now comprising 74 countries.

The number of SIDS at an advanced level of ICT regulation (G3 or G4) has more than doubled, from five countries in 2018 to eleven in 2022. SIDS need to continue moving up the regulatory ladder to reinvigorate the enabling environment for universal meaningful connectivity.

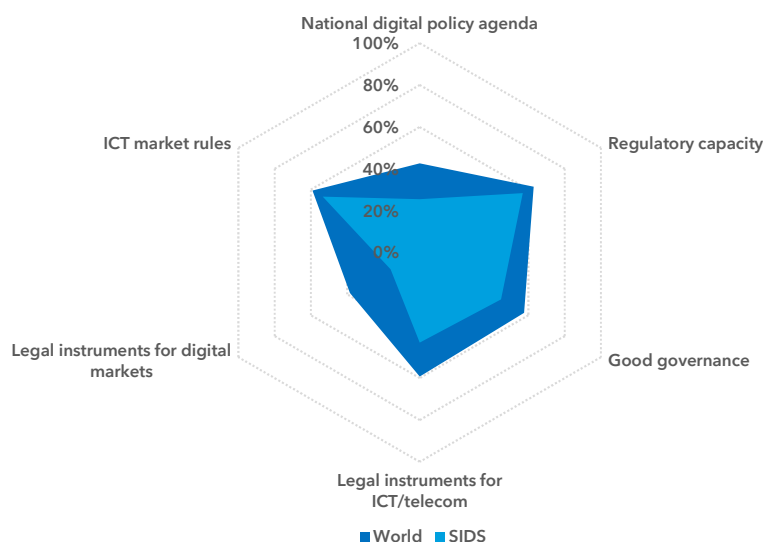


Advanced ICT regulatory frameworks are helping mobile and fixed broadband take-up, enabling broader access to digital services.<sup>1</sup> Mobile broadband penetration across SIDS has doubled in less than a decade. However, countries that have the most advanced ICT regulatory frameworks, G4, reached an average mobile broadband penetration of around 100 subscriptions per 100 inhabitants in 2023, largely exceeding the world average of 87 subscriptions per 100 inhabitants, whereas the average in SIDS has reached only 63 subscriptions per 100 inhabitants.

Additionally, sound ICT regulation appears to also have a significant impact on fixed-broadband access. The SIDS average for fixed broadband subscriptions of 10 subscriptions per 100 inhabitants in 2023 is three times lower than the average in countries with the most mature national ICT regulatory frameworks, G4, in 2022.<sup>2</sup>

**Addressing key areas of telecommunication and digital governance frameworks in SIDS can enhance digital transformation readiness**

Benchmarks for the readiness of national frameworks for digital transformation in key areas, 2023



Note: The six thematic benchmarks (national digital policy agenda, regulatory capacity, good governance, legal instruments for telecommunication and digital markets, and market rules) each comprise a sub-set of indicators, as part of the [ITU Unified Framework for the readiness of national policy, legal and governance frameworks for digital transformation](#). The percentage of achievement on each benchmark indicates the proportion of met versus unmet indicators.  
Source: ITU

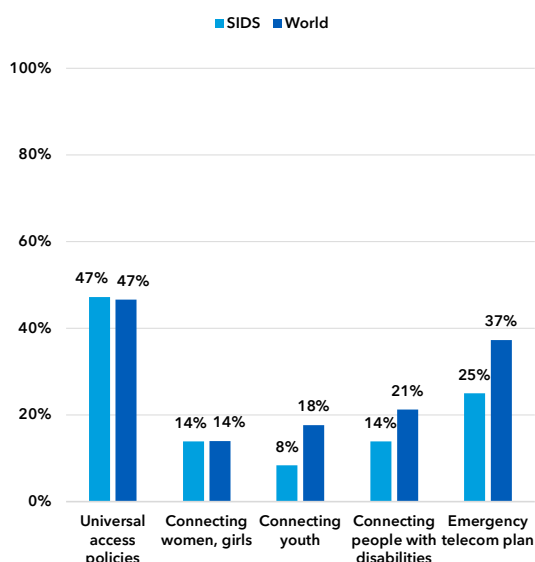
Both ICT and digital policies and governance are pivotal to digital transformation of economies and societies. According to ITU benchmarks, SIDS need to make decisive progress in all the key areas. SIDS score higher for enabling policy and regulatory environment for the telecommunication/ICT sector than for specific instruments for digital markets, although this group of countries remain below world averages. In addition, the area of national digital policy agendas stands out as the second most significant priority where SIDS as a group reach only 25

<sup>1</sup> See ITU, *How broadband, digitization and ICT regulation impact the global economy*, 2020.  
<sup>2</sup> The average for the countries in the fourth and most advanced generation of ICT regulation, G4, is calculated based on 55 countries for all years for which data is available. The ‘Generations of ICT regulation’ is a composite benchmark for the overall development of national ICT regulatory frameworks based on the [ICT Regulatory Tracker](#) scores.

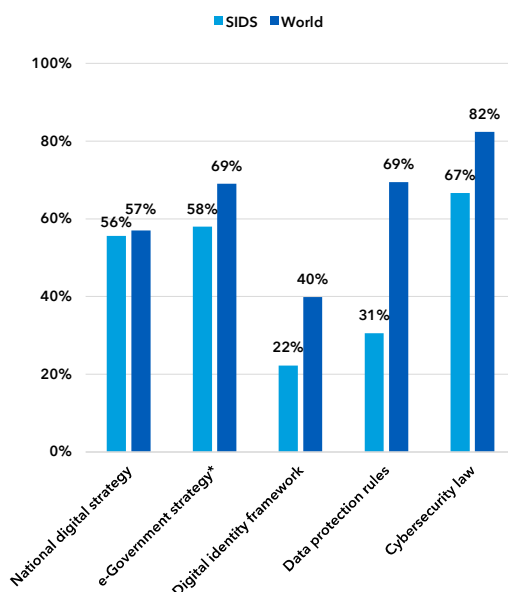
per cent of this benchmark, compared to the world average of 45 per cent. Telecommunication competition frameworks and regulatory capacity in terms of institutional mandates and decision-making are also less developed, albeit close to world averages, and scores for the good governance benchmark are also lower in SIDS.

**Foundational policies for digital society in SIDS need to be further strengthened**

Focus of major connectivity policies, 2023



Major enabling policies for digital transformation, 2023



Note: \* e-Government strategies equivalent to very high and high EGD (E-Government Development Index) scores are included here.

Source: ITU, based on data from ITU, UNCTAD and UNDESA

Traditional telecommunication/ICT connectivity policies underpin the development of national and global digital societies and markets. ‘Leaving no one behind’ has been a policy objective for decades for many countries but is yet to be fully streamlined in connectivity agendas in many SIDS. For example, while almost half of SIDS were equipped with universal access or service policies in 2023, only 14 per cent of SIDS had specific policy instruments or initiatives for connecting women and girls or persons with disabilities, and a mere 8 per cent specifically for connecting young people (left chart). Such foundational policies stand out as a priority on the way towards bridging digital divides across geographies, gender and age.

Emergency telecommunication plans in the event of natural disasters or pandemics is another critical pillar of connectivity for SIDS. As of 2023, only 25 per cent of them had adopted such a plan.

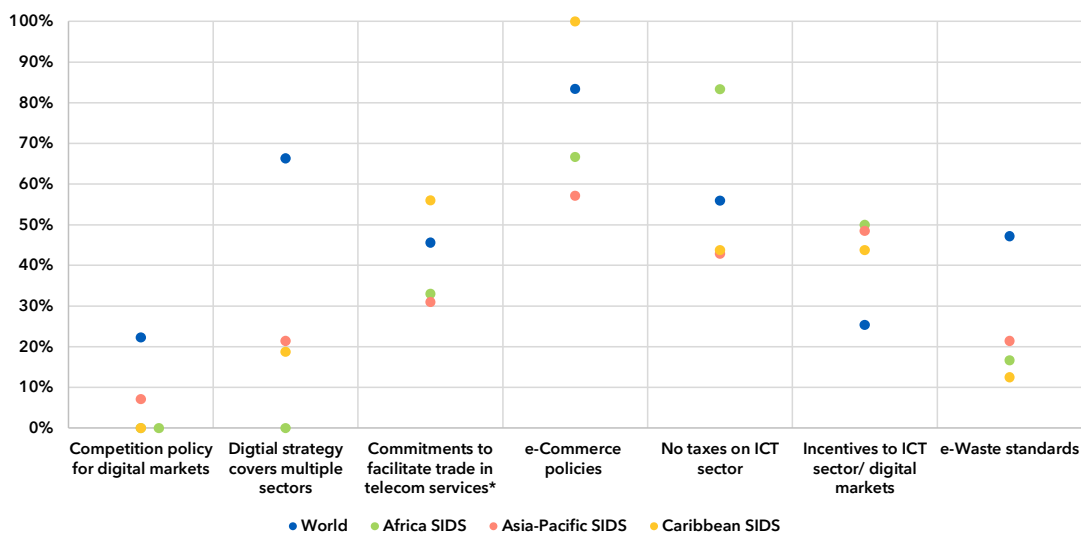
Increasingly, many digital transformation-related policies focus on the interplay of digitalization and the social and economic impacts on governments, national and global business, and on communities and citizens. These policies also incorporate the integration of digitalization across industries and cultures, while recognizing the transnational flows of digital data, services and content. More than half of SIDS have a national digital strategy and a high or very high e-government capacity, and over 60 per cent a cybersecurity law (right chart). Yet, data

protection laws are in force only in one in four SIDS and national digital identity systems have been implemented in one in five countries in this group.

Building up enabling connectivity in concert with digital policies will allow SIDS to fast-track digital development and ensure no one is left behind in the digital world.

**SIDS need to redouble efforts to shape future-facing digital economies**

Key digital economy policy instruments, 2023



Note: The values for each indicator reflect the proportion of countries adopting policy or legal instruments in the respective areas (see Annex 1 for more details). \* Under the General Agreement on Trade in Services of the World Trade Organization.  
Source: ITU

Building on traditional telecommunication and ICT policies, a new generation of digital economy policies is coming of age. Such policies reflect a holistic view of the economy and society and address digital technologies and markets as an ecosystem, which leads the way to accelerated development, economic transformation, diversification and growth.

Overall, according to the ITU benchmark analysis,<sup>3</sup> digital economy policy agendas in SIDS are less developed than the world average and all other regions, also lower than in LDCs and LLDCs. To level the playing field in digital markets in SIDS, countries need to adopt key digital economy policy instruments, such as tailored competition policies, currently in place in less than 5 per cent of SIDS, or e-waste standards adopted in only 17 per cent of countries in this group. Commitments to facilitate trade in telecommunication services and e-commerce policies are well established in SIDS in the Caribbean region, surpassing world averages, while significantly fewer countries in SIDS in Africa and Asia and the Pacific have made such commitments. It is worth noting that over 80 per cent of SIDS in Africa are not imposing specific taxes on the ICT sector, which could enable more affordable ICT and digital services and thus, broader access to social and economic opportunities for all citizens and businesses. Finally, around half of

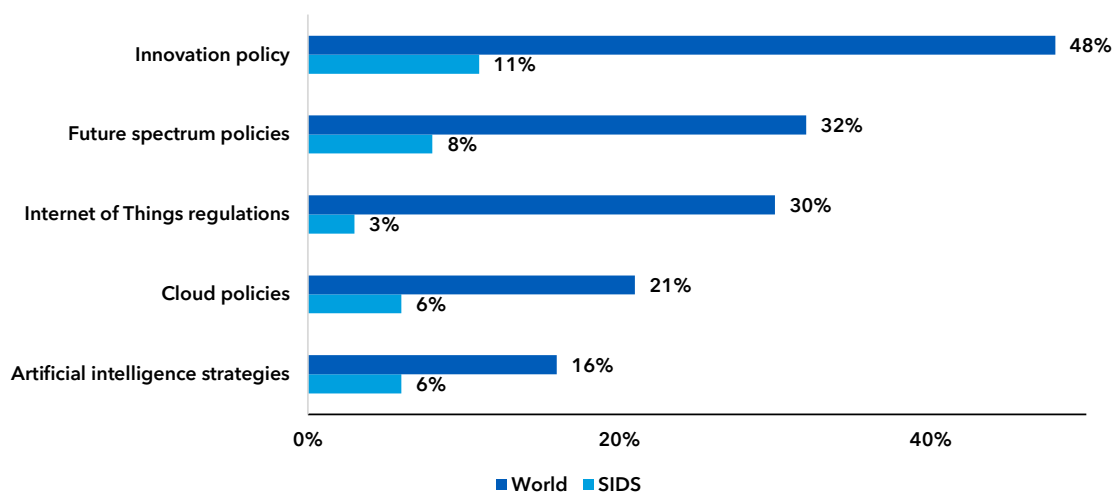
<sup>3</sup> The digital economy policy agenda benchmark is one of the nine thematic benchmarks of the [ITU Unified Framework for the readiness of national policy, legal and governance frameworks for digital transformation](#) and is comprised of a sub-set of related indicators including the ones featured in the chart above. The percentage of achievement of the benchmark indicates the proportion of met versus unmet indicators.

SIDS in all regions rise above the world average with regulatory incentives targeted at either telecommunication or digital markets.

Artificial intelligence, innovation, emerging technologies are all important issues on the new economic policy agenda. Economic prospects are increasingly defined by digital technologies, data and innovative approaches. SIDS need to redouble efforts to create an enabling policy and regulatory environment for such technologies.

As of 2023, only four SIDS have adopted innovation policies and only two have AI policies in place (see figure below). As emerging technologies such as Internet of Things, AI and cloud computing promise solutions to global and local problems while creating their own set of issues, SIDS can take the opportunity to leverage emerging technology policies to create strong locally driven digital economies.

### Emerging technology policies, 2023

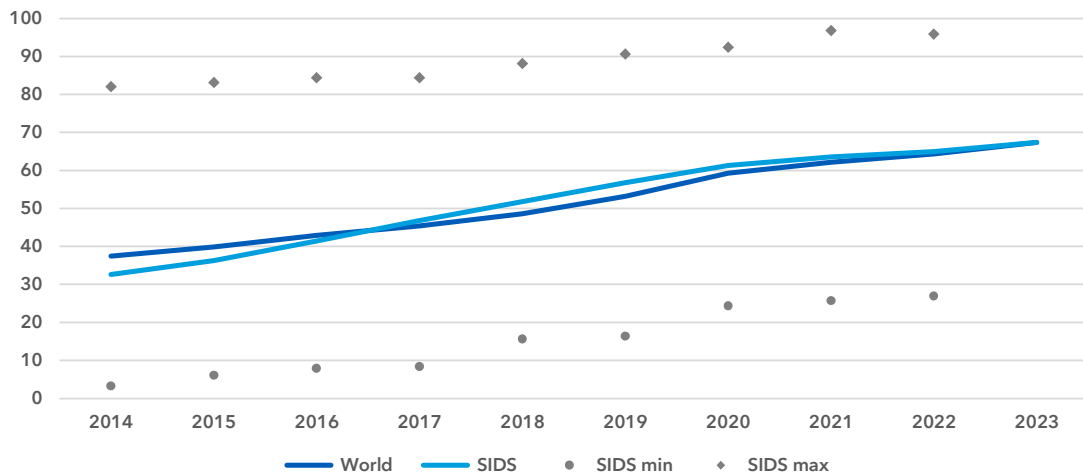


Source: ITU

## Internet use

**From 27 per cent to 96 per cent: Internet use in SIDS reflects diverse digital landscapes**

### Percentage of individuals using the Internet



Note: In any given year, *SIDS min* and *SIDS max* represent SIDS with the lowest and highest value, respectively.  
Source: ITU

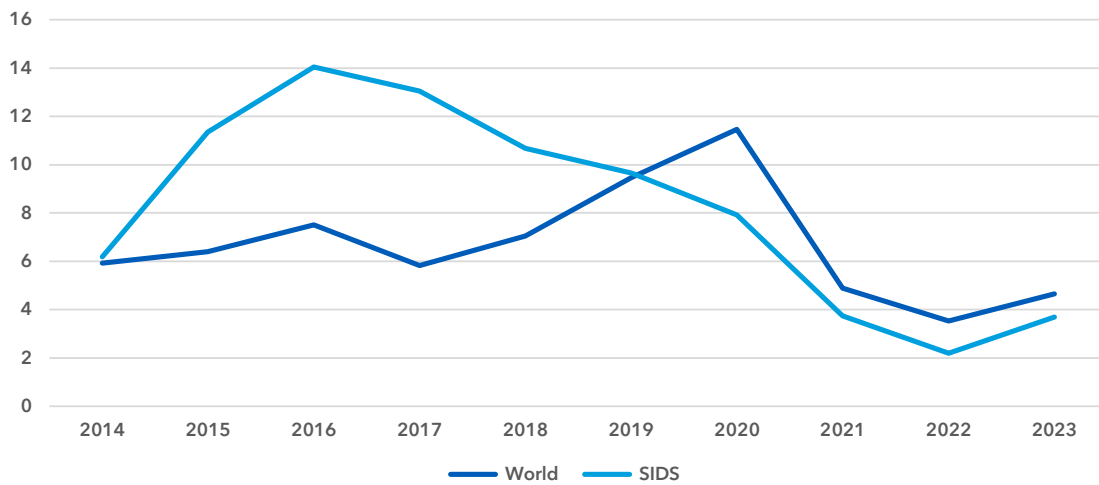
By 2023, and in line with the world's average, 67 per cent of the population in SIDS were using the Internet. Internet usage has doubled since the Third International Conference on Small Island Developing States was held in 2014, when only a third of the population was online in these countries. This represents an annual growth rate of 8.4 per cent, which surpasses the 6.7 per cent growth rate worldwide.<sup>4</sup>

Among SIDS, significant disparities for Internet use exist, and recent country-level data shows that Internet use in SIDS, in 2022, ranged from 27 per cent of the population in Papua New Guinea to near universality in Singapore (96 per cent). In 2023, overall Internet use by region had grown to 75 per cent of the population of SIDS in the Caribbean, with 52 per cent for SIDS in Africa and 41 per cent for SIDS in the Pacific.<sup>5</sup>

<sup>4</sup> All growth rates in this publication are computed as compound annual growth rate - or CAGR.

<sup>5</sup> See Annex 1 for the composition of the subregions.

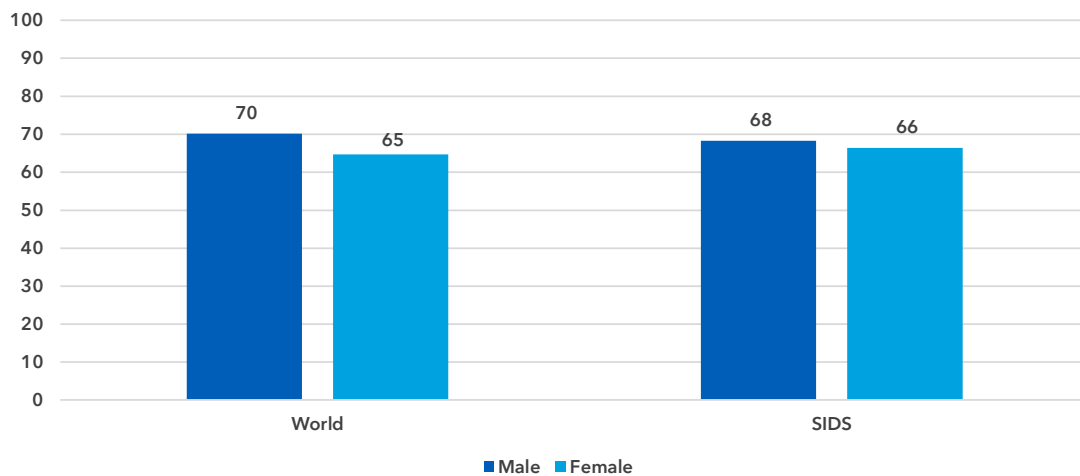
### Annual growth rates of Internet use



Source: ITU

### Internet use gender parity in SIDS is within reach

#### Percentage of individuals using the Internet, by gender, 2023

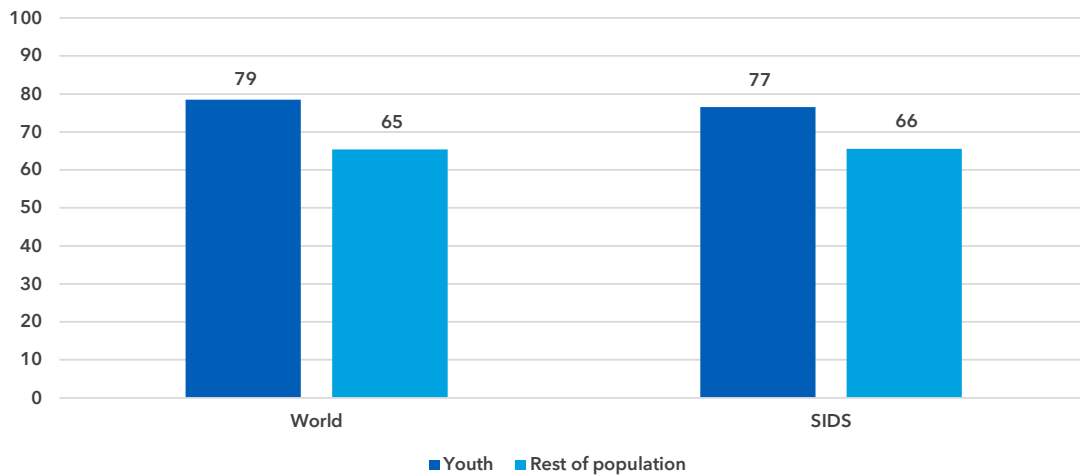


Source: ITU

In 2023, 68 per cent of the male population in SIDS used the Internet, compared with 66 per cent among women. This small difference translates into a gender parity score - the ratio of female to male Internet users - of 0.97, just short of the threshold for gender parity pegged at between 0.98 and 1.02. Data suggests that parity had been achieved in previous years and, despite the reemergence of this small imbalance, the situation in SIDS is better than in the rest of the world, with the world average score standing at 0.92.

**Young people in SIDS spearhead Internet adoption**

Percentage of individuals aged between 15 and 24 years using the Internet, 2023



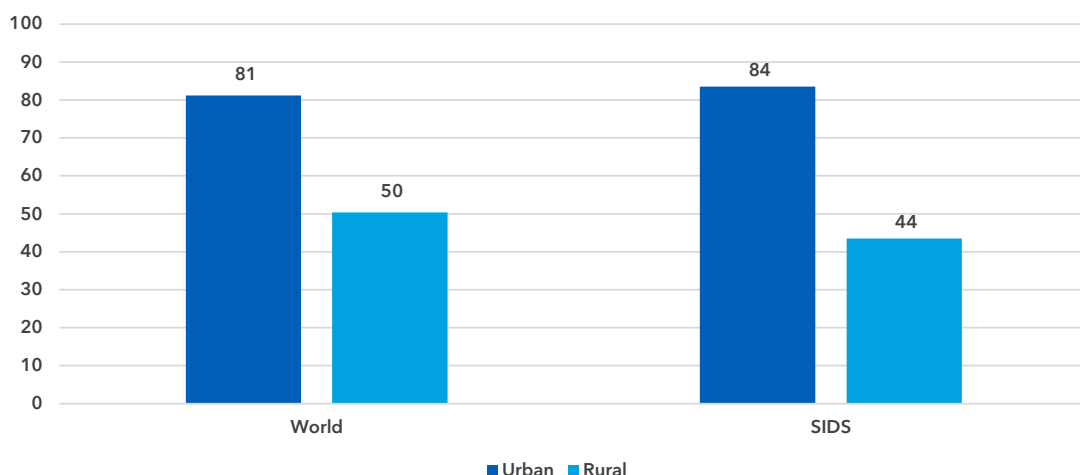
Source: ITU

Although still substantial, the generation gap has been shrinking in SIDS, where 77 per cent of the population of young people aged between 15 and 24 years old were using the Internet by 2023, compared with only 66 per cent of the rest of the population.

In 2020, young people were 25 per cent more likely than the rest of the population to use the Internet compared with only 17 per cent more likely in 2023. The gap is also less pronounced in SIDS than in the rest of the world, where young people were 21 per cent more likely to use the Internet.

**Internet use in rural areas is half that in urban areas, but growing twice as fast**

Percentage of individuals using the Internet, by location, 2023



Source: ITU

## Measuring digital development

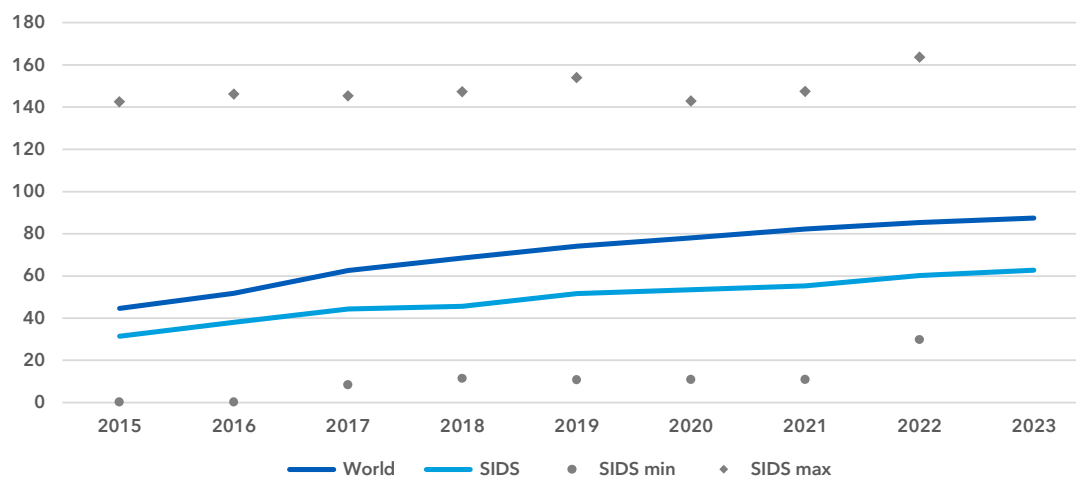
In 2023, data on connectivity in SIDS revealed a stark contrast between rural and urban populations. People living in urban areas were almost twice as likely to use the Internet as rural populations (84 per cent compared to 44 per cent, respectively). However, penetration in rural areas grew at a rate of 4.7 per cent annually between 2020 and 2023, almost twice the rate observed in urban areas (2.6 per cent). As a result, the urban-to-rural Internet usage ratio narrowed from 2.0 to 1.9. This 'catch-up' pattern is reflective of broader global trends, which show marginally higher rural expansion growth rates.



## Broadband subscriptions

### Broadband subscriptions lag Internet use in SIDS

#### Active mobile-broadband subscriptions per 100 inhabitants



Note: In any given year, *SIDS min* and *SIDS max* represent SIDS with the lowest and highest value, respectively, excluding provisional values.

Source: ITU

While Internet use in SIDS aligns with the world average, the mobile-broadband penetration rate of 63 subscriptions per 100 people is much lower than the world average of 87 subscriptions. In addition, the low rate of fixed-broadband penetration in SIDS, with 10 subscriptions per 100 inhabitants in 2023, is about half the world average rate of 19 subscriptions per 100 inhabitants, and this fixed-broadband penetration gap has been steadily widening. Since 2009, the annual growth of fixed-broadband penetration has averaged 4.9 per cent in SIDS, compared to the world average of 6.4 per cent.

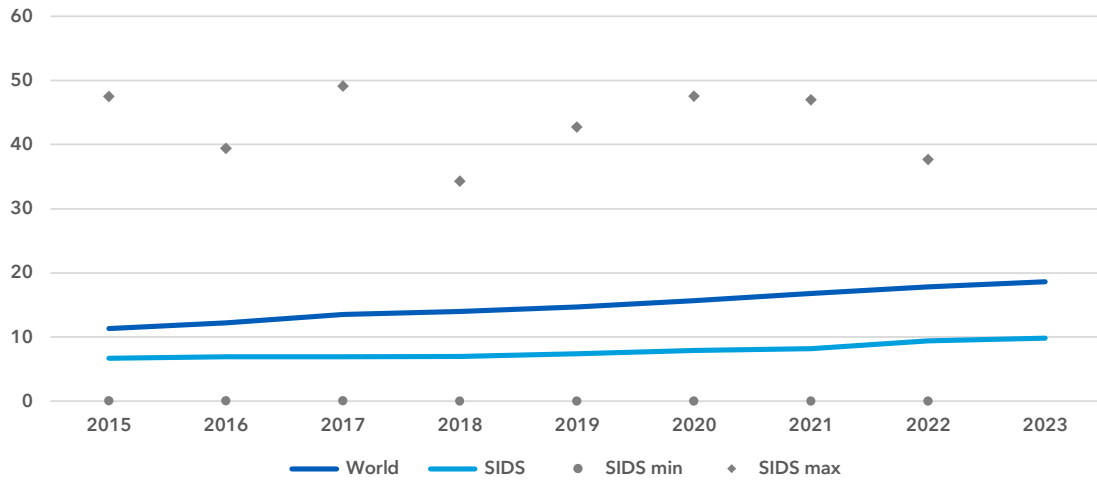
Internet use in SIDS in the Caribbean has risen to 75 per cent of the population, which is well ahead of the 52 per cent registered in SIDS in Africa, although the opposite is true for mobile broadband penetration rates. In SIDS in Africa, the number of subscriptions grew to 82 per 100 inhabitants in 2023. This is just below the world average of 87 subscriptions, but significantly higher than in SIDS in the Caribbean with 56 subscriptions per 100 inhabitants and for SIDS in the Pacific with 28 subscriptions per 100 inhabitants.

For fixed-broadband penetration, there were 9 subscriptions per 100 inhabitants in SIDS in Africa and the Caribbean, but only 1.5 subscriptions per 100 inhabitants in SIDS in Asia and the Pacific.

As seen for other indicators, there is a wide diversity in country-specific averages in SIDS. In 2022, fixed broadband penetration rates, for example, varied from almost zero subscriptions per 100 inhabitants in some SIDS to 38 subscriptions per 100 inhabitants in Singapore, and for mobile broadband, the range was from 30 in Timor-Leste to 164 subscriptions per 100 inhabitants in Singapore.

Such diversity between the countries in the SIDS group and regional differences within this group of countries (less obvious elsewhere) could be indicative of important behavioural differences in how the Internet is accessed in SIDS. Further research is required to fully understand the drivers of these differences.

### Fixed-broadband subscriptions per 100 inhabitants



Note: In any given year, *SIDS min* and *SIDS max* represent SIDS with the lowest and highest value, respectively, excluding provisional values.  
Source: ITU

## E-commerce and the digital economy

### *SIDS only play a minor role in trade in ICT goods and services and digitally-deliverable services*

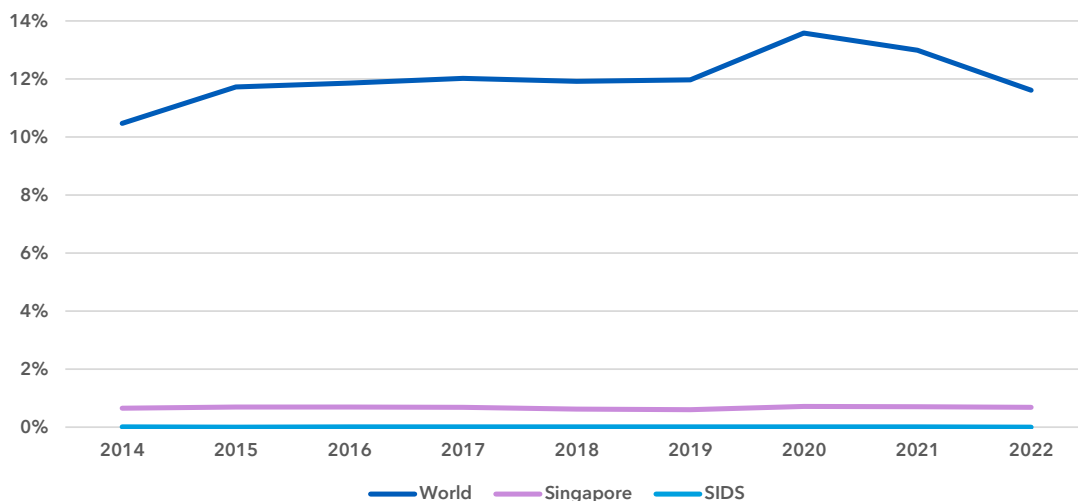
This section was prepared by UNCTAD in collaboration with the Office of the High Representative for the LDCs, LLDCs and SIDS (UN-OHRLLS), in support of the preparatory process for the forthcoming [SIDS conference](#).

Core indicators on the digital economy, including e-commerce, are needed to track progress towards international connectivity and development targets,<sup>6</sup> but are also key inputs to national and regional e-commerce strategies and digital economy policy. In the meantime, data on the enabling environment for e-commerce and the digital economy, as well as data on international trade in ICT goods, ICT services, and digitally-deliverable services, can provide a partial picture of digital economy development in SIDS. These indicators on international trade can be compiled from existing databases of exports and imports.

#### **Trade in ICT goods**

Although some economies have leveraged trade in the core ICT sector (goods and services) for value creation, SIDS are a minor player in ICT goods trade, which is highly concentrated in a few economies. The top 10 exporters of ICT goods accounted for almost 90 per cent of the total value of that trade in 2022, and SIDS for less than 1 per cent (excluding Singapore). The value of ICT goods exports from SIDS amounted to 374 million USD. SIDS are unlikely to bridge the historical chasm in ICT goods exports between them and the rest of the world anytime soon and will continue to rely on ICT goods imports. This dependency on imports of ICT goods means that SIDS should consider policies to ensure that devices and telecommunications are affordable, to help them achieve universal and meaningful connectivity.

#### Exports of ICT goods as a percentage of total merchandise exports



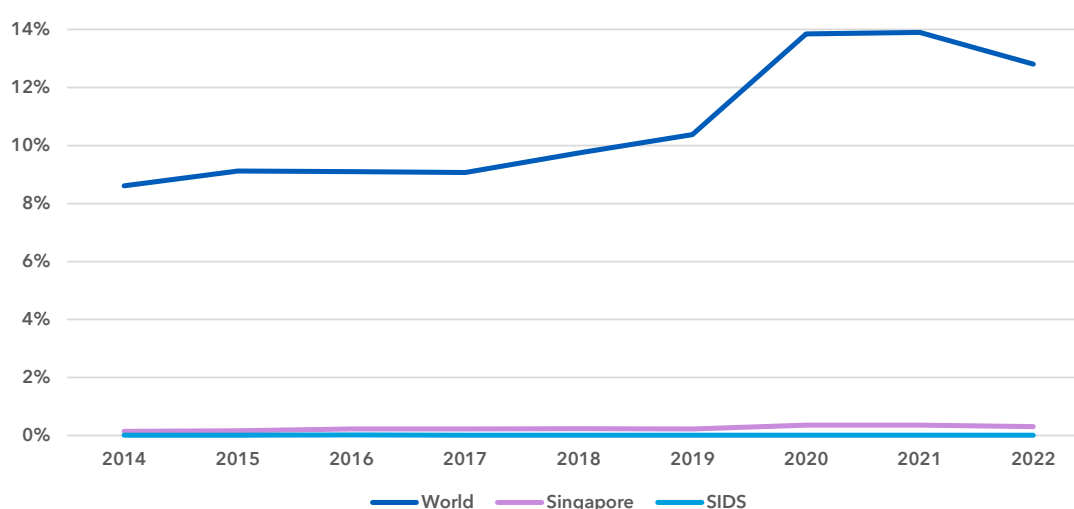
Source: UNCTAD

<sup>6</sup> <https://www.itu.int/en/ITU-D/Statistics/Documents/intlcoop/partnership/Thematic ICT indicators for the SDGs.pdf>

### Trade in ICT services

Although there is a high entry barrier for most SIDS to engage in ICT goods production and exports, the competitive domestic production of ICT services may hold more opportunities for countries to create and capture value in the digital economy.<sup>7</sup> Although SIDS, excluding Singapore, accounted for less than 1 per cent of exports of ICT services as a percentage of total service trade, the value of such exports for SIDS (667 USD million) has surpassed that of ICT goods. In addition, UNCTAD published figures for 22 SIDS in 2021 and 16 SIDS in 2022, showing a more diversified market than for ICT goods.

### Exports of ICT services as a percentage of total trade in services



Source: UNCTAD

### Exports of digitally-deliverable services<sup>8</sup>

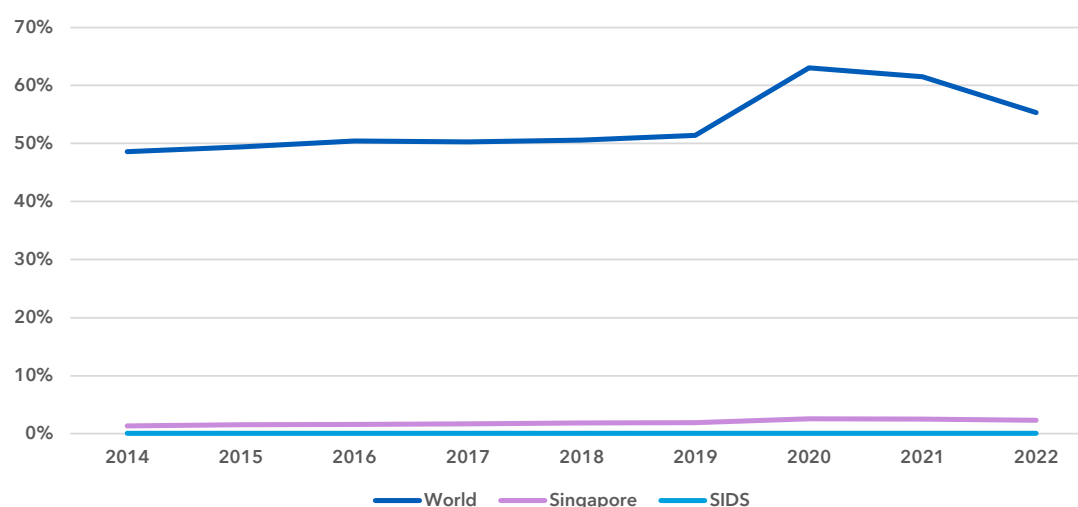
Beyond ICT services, the digital transformation of the global economy has led to other services being increasingly tradeable and delivered remotely. The offshoring of business services represents an opportunity for SIDS to become part of digital value chains by producing and exporting such services. In 2022, exports of digitally-deliverable services accounted for 55 per cent of total trade in services. Exports in digitally-deliverable services were also resilient following the global trade slowdown due to the COVID-19 pandemic, experiencing exceptional growth of 16 per cent in 2021 and a more moderate growth of 3 per cent in 2022. Although SIDS only represent 0.1 per cent of digitally-deliverable exports (excluding Singapore), the value of these exports from SIDS amounted to more than 4 billion USD.<sup>9</sup>

<sup>7</sup> [https://unctad.org/system/files/official-document/der2019\\_en.pdf](https://unctad.org/system/files/official-document/der2019_en.pdf)

<sup>8</sup> Digitally-deliverable services are services that can be delivered remotely over computer networks.

<sup>9</sup> See also [https://unctad.org/system/files/official-document/tdstat48\\_FS06\\_en.pdf](https://unctad.org/system/files/official-document/tdstat48_FS06_en.pdf)

## Exports of digitally-deliverable services as a percentage of total trade in services



Source: UNCTAD

### Data gaps related to e-commerce and the digital economy

More and better data on the performance of SIDS in the digital economy is desperately needed. The available data from trade in ICT goods and services, and digitally-deliverable services, only paints a very partial picture. The ability of businesses to use the Internet is a condition for their ability to engage in e-commerce and participate in the digital economy. Indeed, the indicator of business use of the Internet, broken down by enterprise size, is one of the aspirational targets for universal and meaningful connectivity.<sup>10</sup> Despite the importance of this concept and the methodologies developed by UNCTAD to measure it,<sup>11</sup> data on business Internet use is surprisingly scant. Since 2012, only three SIDS (the Dominican Republic, Mauritius, and Singapore) have reported data to UNCTAD broken down by size.<sup>12</sup>

As digitalization progresses, SIDS must be able to assess the extent to which businesses are using the Internet and adopting e-commerce, what is the value of e-commerce transactions, and what are the barriers to adoption that policy could address. While exports of digitally deliverable services measure one dimension of international e-commerce (trade flows), there are few statistics on the use or value of e-commerce in developing countries. In addition, domestic e-commerce is not yet measured in SIDS, although it tends to be more significant than international e-commerce for local economies. Building the capacity of national statistical offices to measure e-commerce and the digital economy is a concrete action “to bridge data gaps and enhance institutional capacities that empower evidence-based policymaking” on these issues.<sup>13</sup>

<sup>10</sup> For more on the universal and meaningful connectivity targets, see <https://www.itu.int/umc2030/>.

<sup>11</sup> See <https://unctad.org/publication/manual-production-statistics-digital-economy-2020> for methodological guidance.

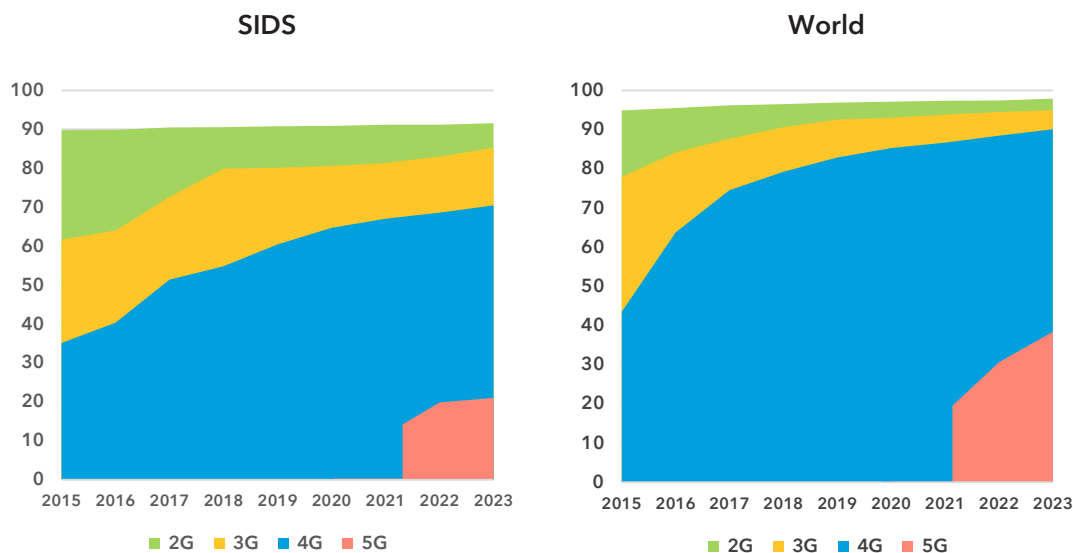
<sup>12</sup> See the UNCTAD Data Centre for available data at <https://unctadstat.unctad.org/datacentre/>. The last update of the digital economy tables by UNCTAD was in 2023, and the next one will be in 2025.

<sup>13</sup> This is an objective of the dialogue on “Leveraging Data and Digital Technologies and Building effective Institutions for a Resilient Future in SIDS” at [SIDS4](#).

## Mobile network coverage

### Large access gaps persist in rural areas in SIDS

#### Percentage of population covered by type of mobile network



Note: The values for 2G, 3G and 4G networks show the incremental percentage of the population that is not covered by a more advanced technology network (e.g. in 2023, 85 per cent of the population in SIDS is covered by a 3G or above network, that is 21 per cent + 49 per cent + 15 per cent). There is insufficient data to produce estimates for 5G coverage prior to 2021.

Source: ITU

In the context of developing countries, mobile broadband (defined as 3G connectivity and above) serves as the principal and frequently the only access to the digital world. However, as of 2023, only 85 per cent of the population in SIDS was within reach of a mobile broadband network, well below the world average of 95 per cent. This puts the *access gap* at 15 per cent, which includes the share of people with no mobile signal (8 per cent in SIDS compared with 2 per cent for the rest of the world) and those who only had access to a 2G network (7 per cent in SIDS compared with 3 per cent for the rest of the world).

Like other connectivity-related indicators, performance varies across SIDS. For instance, the access gap was 12 per cent for SIDS in the Caribbean, 19 per cent for SIDS in Africa, and 29 per cent for SIDS in the Pacific.

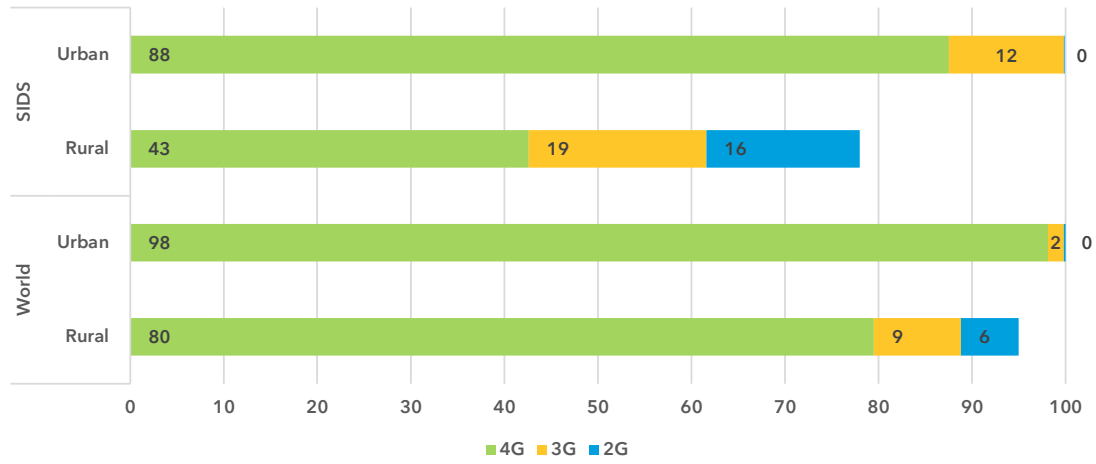
Although access to a network is necessary to use the Internet, it is not the only condition to meet for Internet use. The *usage gap* in SIDS is the consequence of many barriers such as affordability, the lack of digital skills and relevant content,<sup>14</sup> and data suggests that 18 per cent of the population in SIDS had access to the Internet but did not use it.

There also exists a stark contrast between urban and rural connectivity in SIDS. Virtually every person in urban areas enjoyed broadband coverage (3G or above), compared with only 62 per cent among rural populations, a gap of 37 percentage points. The share of the population covered by a 4G signal has reached 88 per cent in rural areas, more than twice the penetration

<sup>14</sup> For a discussion of the usage gap and the barriers to connectivity, see [The Global Connectivity Report 2022](#) published by ITU.

in rural areas (43 per cent). This reveals a critical need for infrastructure development and investment in these underserved areas.

Population coverage by type of mobile network and location, 2023

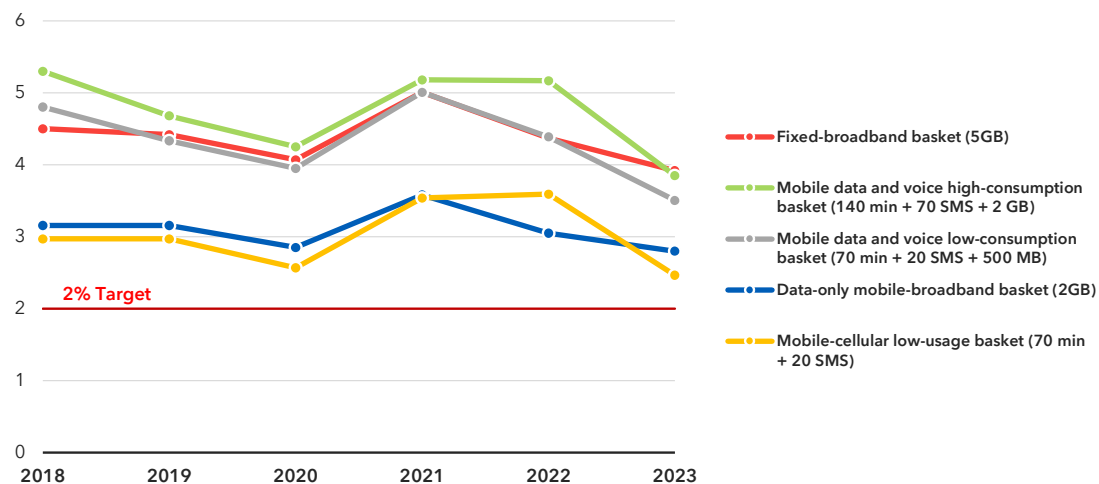


Note: The values for 2G and 3G networks show the incremental percentage of the population that is not covered by a more advanced technology network (e.g. 89 per cent of the world’s rural population is covered by a 3G and above network, that is 80 per cent + 9 per cent). It is not yet possible to make estimates for 5G coverage in urban and rural areas. Source: ITU

## Affordability

### COVID-19 pandemic sets back progress toward affordability targets in SIDS

#### Median basket prices as a percentage of gross national income per capita in SIDS



Note: To eliminate the effect of annual changes in data availability on price trends, median values shown here were calculated based on a comparable set of countries for which data is available for each year from 2018 to 2023 (37 SIDS for the data-only mobile-broadband and the data and voice high-consumption baskets; 35 SIDS for the fixed-broadband basket, and 34 SIDS for the mobile-cellular low-usage and the data and voice low-consumption baskets). For a definition of ITU ICT price baskets and data collection rules, refer to the [methodology note](#).  
Source: ITU

The [United Nations Broadband Commission for Sustainable Development](#) aims to make broadband in developing countries affordable by 2025. Affordability is defined as the availability of broadband access at a price that is less than 2 per cent of the monthly gross national income (GNI) per capita. Among the 50 SIDS for which data is available, 18 meet the affordability target with respect to the data-only mobile-broadband basket in 2023. Out of the 47 SIDS where data on fixed-broadband is available, 11 meet the target for the fixed-broadband basket.

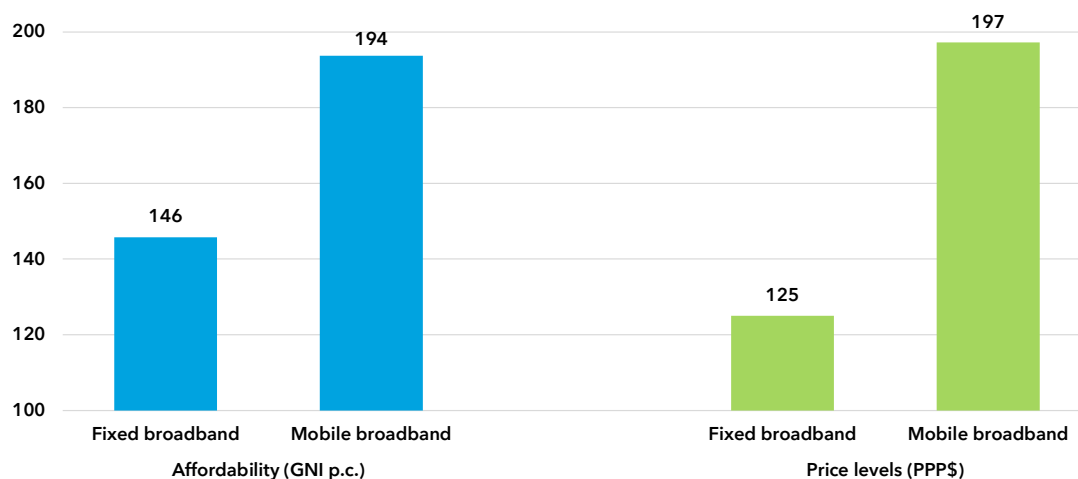
The improvement in affordability of ICT services in SIDS was slowed by the COVID-19 pandemic and ensuing financial and economic crises, which affected price levels as well as income levels. The historical lows achieved in 2023 in the price of all mobile baskets and of the fixed-broadband basket expressed as a percentage of GNI per capita are only marginally lower than pre-pandemic levels (see figure above).

Furthermore, the price of an entry-level fixed-broadband basket was about 46 per cent more expensive in a typical SIDS than the world's median price, while the price of the data-only mobile broadband was almost twice that of the world's median (see blue columns in figure below).



To close the affordability gap with the rest of the world, the drivers of higher price levels of connectivity and services should be considered. Adjusted for purchasing power parity, the entry-level fixed broadband prices in SIDS exceed the average price elsewhere by about 25 per cent, while the data-only mobile-broadband prices are almost twice price (green columns).

Difference between affordability and price levels in SIDS with respect to the world median in 2023 (%)



Note: Bars show the difference in percentages between the median for SIDS and the world median (=100).  
Source: ITU

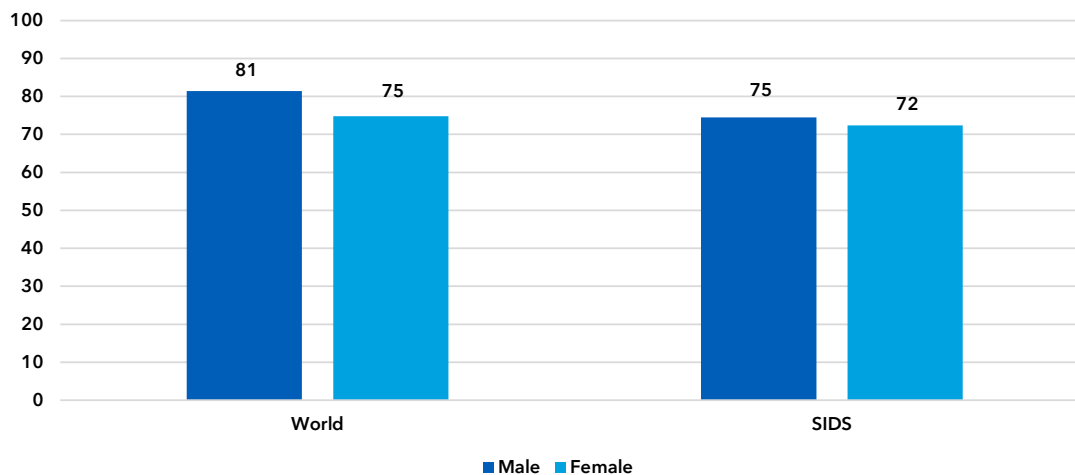
The factors underpinning the price and affordability gaps between SIDS and other countries are mainly structural. Telecommunication operators in SIDS typically face higher costs due to inadequate infrastructure, remoteness, limited economies of scale, high cost of imports, and environmental vulnerability. These challenges in turn deter new entrants and thus limit competition. In addition, linking to global networks is more expensive for SIDS, which often rely on costly satellite communications due to their geographical isolation. High energy costs, regulatory challenges, and a scarcity of local expertise also drive up prices. The telecommunication markets in SIDS are further impacted by demand-side constraints, such as lower disposable incomes. This creates a vicious circle as operators, in response, impose relatively higher charges for services to maintain profitability.<sup>15</sup>

<sup>15</sup> For more on affordability, refer to the [Policy brief - the affordability of ICT services 2023](#).

## Mobile phone ownership and subscriptions

*Three quarters of people living in SIDS own a mobile phone*

Percentage of individuals owning a mobile phone, by gender, 2023

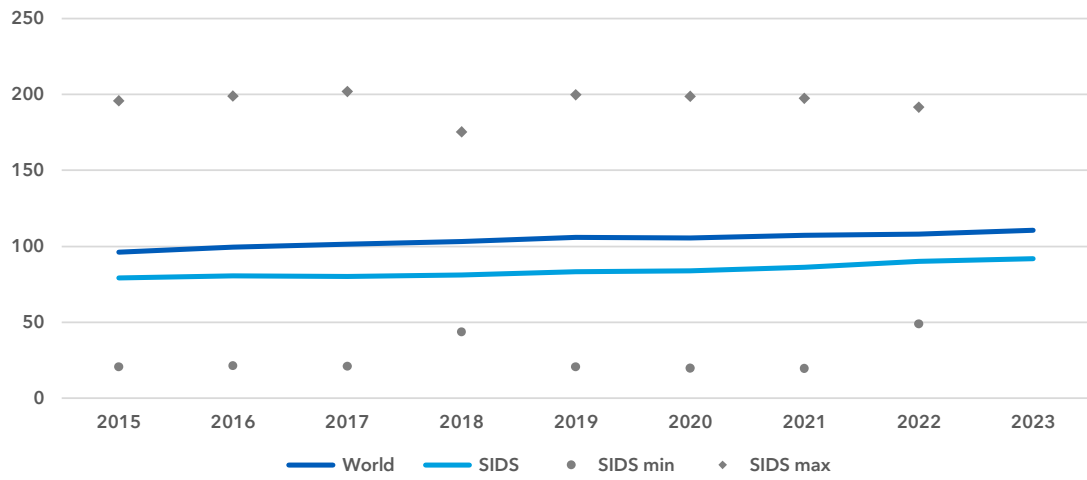


Note: Individuals aged 10 and older.  
Source: ITU

As of 2023, 74 per cent of the population in SIDS owned a mobile phone, close to the world average of 78 per cent, and this trend extends to mobile cellular subscriptions, with an average of 92 subscriptions for every 100 people, compared with 111 worldwide. Like other metrics, subscription rates across SIDS vary widely, ranging from 49 per 100 inhabitants in Kiribati to 192 per 100 inhabitants in the Seychelles.

Examining mobile phone ownership in SIDS reveals that the gender gap is notably slight. In 2023, mobile phone ownership in SIDS had reached 75 per cent for men and 72 per cent for women. This closeness in ownership rates yields a gender parity score of 0.97, which is very close to parity for this indicator. In contrast, the world gender parity score of 0.92 underlines the progress SIDS have made towards achieving equitable digital engagement across genders.

Mobile-cellular subscriptions per 100 inhabitants

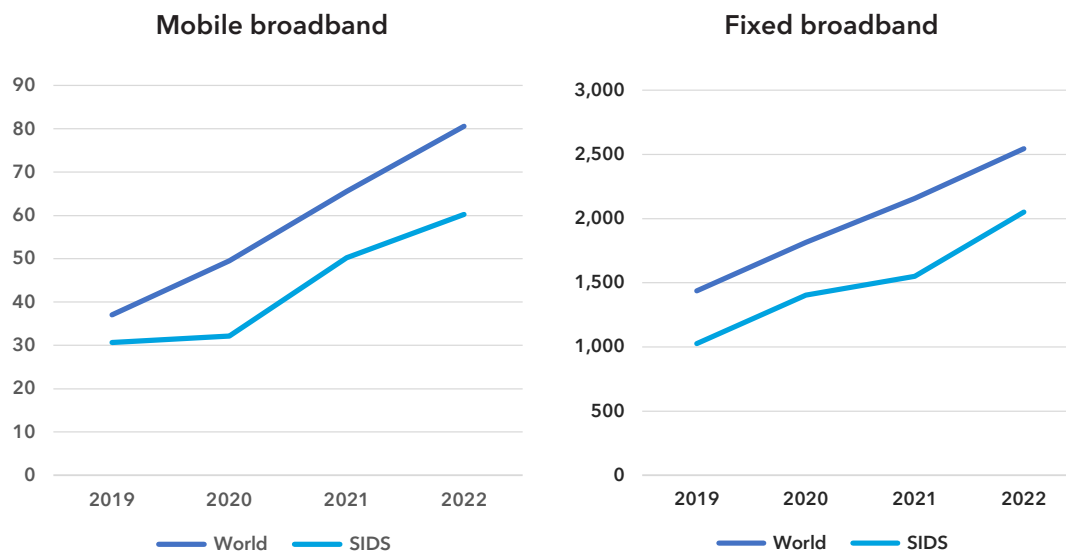


Note: In any given year, *SIDS min* and *SIDS max* represent SIDS with the lowest and highest value, respectively.  
Source: ITU

## Internet traffic and international bandwidth

*Internet traffic in SIDS trails the rest of the world by up to two years*

Broadband Internet traffic per subscription per month (GB)



Note: The graphs show median monthly Internet traffic per mobile- and fixed-broadband subscription. This is a more representative measure for SIDS than averages, which are heavily influenced by extreme values.

Source: ITU

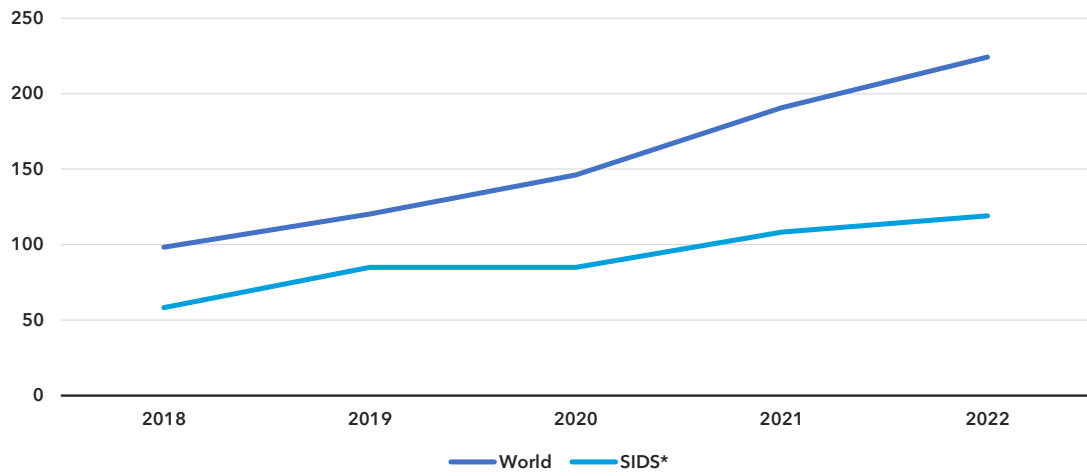
There is a gap between SIDS and the rest of the world in terms of Internet traffic. In 2022, median fixed-broadband Internet traffic per subscription in SIDS was about 25 per cent lower than the global median, while mobile-broadband Internet traffic was about 20 per cent lower.

However, growth in Internet traffic in SIDS has been significant, albeit inconsistent, particularly during the COVID-19 pandemic. From 2019 to 2022, fixed-broadband traffic per subscription grew at an average of 26 per cent annually, 5 percentage points above the world growth rate. In contrast, the increase in mobile-broadband traffic per subscription was 25 per cent per year, 5 percentage points below the world average. Considering the gap and the growth dynamics, SIDS are behind the rest of the world by about one year for mobile-broadband traffic and less than two years for fixed-broadband traffic. This lag is significantly less than the six-year lag of SIDS with respect to the world in terms of mobile-broadband penetration.

The high growth rates and the one- or two-year lag suggest that instead of a lack of demand, there is a supply constraint. This highlights the need for investment in the development and modernization of Internet infrastructure.

International connectivity remains one of the key barriers to Internet use in SIDS. The bandwidth per Internet user of 119 kbit/s in SIDS in Africa, the Caribbean and the Pacific amounted to barely half of the world average (224 kbit/s) in 2022. Due to its position as a leading international connectivity hub, Singapore recorded a staggering 8 855 kbit/s per Internet user. SIDS typically rely on single submarine cable connections with high deployment and maintenance cost per end user, with adverse consequences on affordability and reliability of service, as demonstrated in the case of Tonga in 2022 when the underwater volcano eruption cut connectivity for months.

International bandwidth per Internet user (kbit/s)



Note: \* Average excludes Singapore to remove the connectivity hub effect.  
Source: ITU

## Disparity between SIDS

### ***Averages conceal vast disparities in connectivity among SIDS***

SIDS are often analysed as a single homogenous group, however, this group of States is diverse in many respects, such as income levels, where the wealthiest country's GNI per capita is 60 times greater than the poorest; urbanization rates, which range from 20 per cent to 80 per cent; and size of populations, which range from a few thousand to 11 million people. Cuba, Dominican Republic, Haiti, and Papua New Guinea make up over 60 per cent of the total population of SIDS and heavily influence statistics for SIDS that are weighted by population.

Given these differences, it can be useful to group SIDS according to indicators of Internet use, mobile phone ownership, mobile-broadband and fixed-broadband subscription rates, affordability of entry-level mobile and fixed broadband, and gender equality. This 'cluster analysis' yields three distinct groups, whose respective members share similar ICT profiles.

The first group, made up of Antigua and Barbuda, Bahamas, Barbados, Maldives, Mauritius, Nauru, Saint Kitts and Nevis, Seychelles, Singapore, and Suriname is characterized by rates of ICT usage and ownership that are well above the world average. However, for this group, affordability remains a challenge with entry-level mobile and fixed broadband prices above the Broadband Commission target of 2 per cent of monthly GNI per capita or lower. In addition, the gender gap for Internet use in these countries remains wider than the average for the rest of the world.

By contrast, the second group of SIDS, consisting of Belize, Cabo Verde, Cuba, Dominica, Dominican Republic, Fiji, Grenada, Guyana, Jamaica, Marshall Islands, Saint Lucia, Saint Vincent and the Grenadines, Samoa, Tonga, Trinidad and Tobago, and Tuvalu, is the largest and produces the most representative averages for SIDS. This group has much lower rates of mobile and fixed penetration and moderately lower rates of Internet use and mobile phone ownership compared to the first group. Connectivity is also less affordable on average. In contrast, the digital gender gap has been closed in many countries in this group.

The third group, consisting of Comoros, Guinea-Bissau, Haiti, Kiribati, Micronesia, Papua New Guinea, Sao Tomé and Príncipe, Solomon Islands, and Timor-Leste, has the lowest rates of ICT use and ownership, lowest subscription rates and affordability scores. In this group, only 42 per cent of the population uses the Internet, about half the share of the other two groups, and the data-only mobile broadband plan costs the equivalent of almost 8 per cent of monthly GNI per capita. The low results for these indicators reflect the development challenges present in these countries, where all but Micronesia and Papua New Guinea are classified as LDCs. Tuvalu is also an LDC but belongs to the second group thanks to its more advanced level of ICT development.

The diversity of these three groups of countries underlines the need to design tailored approaches to achieve universal and meaningful connectivity.

## Average of key ICT indicators by groups of similar SIDS, 2022

Indicator (units)	Group			World average
	1 (10 SIDS)	2 (16 SIDS)	3 (9 SIDS)	
Share of individuals using the Internet (%)	84	79	42	<b>64</b>
Gender equality - Internet use (relative gap)	0.85	1.02	0.84	<b>0.88</b>
Share of individuals owning mobile phones (%)	92	84	60	<b>76</b>
Mobile-broadband subscriptions (per 100 inhabitants)	89	57	39	<b>85</b>
Fixed-broadband subscriptions (per 100 inhabitants)	26	11	1	<b>18</b>
Data-only mobile broadband prices (as a % of GNI per capita)	2.5	3.5	7.8	<b>1.5</b>
Fixed broadband prices (as a % of GNI per capita)	2.8	5.2	29.2	<b>3.2</b>

Note: Countries were assigned to groups using hierarchical clustering (detailed explanation available at [https://uc-r.github.io/hc\\_clustering/](https://uc-r.github.io/hc_clustering/)). Refers to ITU Member States only. Missing data was imputed based on overall ranked performance of countries for available indicators. Averages shown are not population-weighted as clustering was performed under the assumption of equal weight per country. *Relative gap* is calculated as the geometric mean of the gender gap for individuals using the Internet and those not using the Internet. *Data-only mobile broadband prices* refers to a basket of services including 2 GB monthly data allowance at 3G or higher technology. *Fixed broadband prices* includes 5 GB monthly allowance at 256 kbit/s or higher speeds. Affordability data (*data-only mobile broadband* and *fixed broadband*) are group medians to account for outliers. Vanuatu is not shown as it fits into its own distinct group due to extremely high mobile-broadband subscription rates and very low fixed-broadband subscription rates. Source: ITU

## Annex 1: Regional classification

For the purpose of this publication, the 57 SIDS were grouped into three sub-regions:

**Caribbean (29 economies):** Anguilla, Antigua and Barbuda, Aruba, Bahamas, Barbados, Belize, Bermuda, British Virgin Islands, Cayman Islands, Cuba, Curacao, Dominica, Dominican Republic, Grenada, Guadeloupe\*, Guyana, Haiti, Jamaica, Martinique\*, Montserrat\*, Puerto Rico, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Sint Maarten\*, Suriname, Trinidad and Tobago, Turks and Caicos Islands, and the Virgin Islands (U.S.).

**Pacific (20 economies):** American Samoa, Cook Islands, Fiji, French Polynesia, Guam\*, Kiribati, Marshall Islands, Micronesia, Nauru, New Caledonia, Niue, Northern Mariana Islands, Palau, Papua New Guinea, Samoa, Solomon Islands, Timor-Leste, Tonga, Tuvalu, and Vanuatu.

**Africa (7 economies):** Capbo Verde, Comoros, Guinea-Bissau, Maldives, Mauritius, Sao Tome and Príncipe and Seychelles.

**Singapore** geographically is outside the three sub-regions and is not included in Table A.2.1 of Annex 2.

Refer to Tables A.2.2 and A.2.3 for Annex 2 for country values.

\* No data.



## Annex 2: Group aggregates and country values for selected connectivity indicators

This annex reports aggregates for the world and SIDS by region in Table A2.1 (Africa (SIDS-AFR), Caribbean (SIDS-CAR), and the Pacific (SIDS-PAC)). Values for individual SIDS are given in Tables A2.2 and A2.3 for selected connectivity indicators. More data is available on the [ITU DataHub](#).

**Table A2.1: World aggregates and SIDS aggregates**

	2015	2016	2017	2018	2019	2020	2021	2022	2023
<b>Mobile-cellular telephone subscriptions per 100 inhabitants</b>									
World	96.1	99.3	101.4	103.1	105.9	105.5	107.4	108.1	110.6
SIDS	79.2	80.6	80.2	81.1	83.2	83.8	86.2	90.2	91.9
SIDS-AFR	100.2	102	105.9	106.2	106.5	112.4	119.8	128.1	132.8
SIDS-CAR	72	71.9	72.2	73.9	76.7	78.7	81.3	84.4	86.2
SIDS-PAC	55.8	58.5	60	60.4	60.5	60.6	59.6	61.5	62.3
<b>Fixed-telephone subscriptions per 100 inhabitants</b>									
World	14.1	13.4	13	12.4	11.9	11.5	11.3	11	10.7
SIDS	11.9	11.9	11.8	11.6	11.4	11.3	11.4	11.3	11.1
SIDS-AFR	10	9.9	10.2	10.3	10.4	10.5	10.1	9.9	9.5
SIDS-CAR	11.2	11.3	11.1	11	11	11	11.2	11.1	11
SIDS-PAC	4	3.9	4.1	3.9	3.6	3.5	3.7	3.6	3.6
<b>Active mobile-broadband subscriptions per 100 inhabitants</b>									
World	44.6	51.8	62.5	68.6	74.2	78.1	82.3	85.4	87.4
SIDS	31.4	38	44.4	45.6	51.6	53.5	55.2	60.2	62.7
SIDS-AFR	21.6	28.4	44.1	49	59.4	61.3	66.2	75.1	81.9
SIDS-CAR	20.8	27.4	34.5	39.5	43.6	47.2	49	53.8	56.4
SIDS-PAC	12.3	17.8	22.6	11.5	23	25.9	24.9	26.3	28.4
<b>Fixed-broadband subscriptions per 100 inhabitants</b>									
World	11.3	12.2	13.5	14	14.7	15.7	16.8	17.8	18.6
SIDS	6.7	6.9	6.9	7	7.4	7.9	8.2	9.4	9.8
SIDS-AFR	5	5.3	6	6.7	7.5	8.2	8.6	8.9	9.3
SIDS-CAR	5.6	5.8	6.1	6.4	6.9	7.7	7.9	8.4	8.9
SIDS-PAC	1.2	1.2	1.2	1.2	1.3	1.3	1.4	1.4	1.5

(continued)

	2015	2016	2017	2018	2019	2020	2021	2022	2023
<b>Population covered by a mobile-cellular network (%)</b>									
World	94.9	95.5	96.2	96.5	96.9	97.1	97.3	97.5	97.9
SIDS	89.8	89.9	90.5	90.6	90.8	90.9	91.2	91.2	91.6
SIDS-AFR	90	91.2	94.7	95.1	97.1	98.3	98.3	98.6	99
SIDS-CAR	88.2	87.9	88.4	88.5	88.5	88.6	89	89	89.6
SIDS-PAC	89.6	90.5	90.7	90.8	90.7	90.7	90.7	90.7	90.8
<b>Population covered by at least a 3G mobile network (%)</b>									
World	78	84.2	87.7	90.6	92.6	93	93.8	94.5	95
SIDS	61.7	64	72.7	79.9	80.1	80.6	81.4	83	85.3
SIDS-AFR	61.6	68.1	72	72	70.7	72	76.1	78.8	80.6
SIDS-CAR	55.2	57.1	69.6	80.7	81.2	81.9	82.6	84.9	88.3
SIDS-PAC	63	66	68.8	70	70	70.1	70.1	70.6	71.2
<b>Population covered by at least an LTE/WiMAX mobile network (%)</b>									
World	43.5	63.8	74.5	79.3	82.9	85.3	86.7	88.5	90.1
SIDS	35.1	40.3	51.4	54.8	60.5	64.7	67	68.6	70.5
SIDS-AFR	22.5	25.6	46.8	46.8	54.6	58.1	63.3	67.2	70.4
SIDS-CAR	28.3	35.4	46.4	49.9	57.6	63.8	67	67.3	69.1
SIDS-PAC	28.5	30.2	43.5	49.9	51.2	51.9	51.9	57.6	59.9
<b>Population covered by at least a 5G mobile network</b>									
World	N/A	N/A	N/A	N/A	N/A	N/A	17.8	30.6	38.4
SIDS	N/A	N/A	N/A	N/A	N/A	N/A	11.6	19.8	21
SIDS-AFR	N/A	N/A	N/A	N/A	N/A	N/A	5.2	12.5	19.1
SIDS-CAR	N/A	N/A	N/A	N/A	N/A	N/A	5	17	17.8
SIDS-PAC	N/A	N/A	N/A	N/A	N/A	N/A	0.3	0.6	0.8
<b>International bandwidth usage per Internet user (kbit/s)</b>									
World	48	62.4	78.4	98.2	120.3	146.1	190.8	224.2	N/A
SIDS excl. SGP	N/A	N/A	N/A	58.3	85	84.9	108.3	119.1	N/A
<b>Mobile-broadband traffic per subscription (GB)</b>									
World	N/A	N/A	N/A	N/A	72.9	91.6	115.0	134.1	N/A
SIDS	N/A	N/A	N/A	N/A	57.3	71.9	104.4	75.5	N/A
<b>Fixed-broadband traffic per subscription (GB)</b>									
World	N/A	N/A	N/A	N/A	1,745	2,577	2,985	3,086	N/A
SIDS	N/A	N/A	N/A	N/A	1,808	2,757	3,329	3,774	N/A

(continued)

	2015	2016	2017	2018	2019	2020	2021	2022	2023
<b>Individuals using the Internet (%)</b>									
World	39.9	42.9	45.4	48.6	53.2	59.3	62.2	64.4	67.4
SIDS	36.3	41.4	46.8	51.8	56.8	61.3	63.6	65	67.4
SIDS-AFR	24.7	29.2	31.5	33.7	38.6	45.3	46.4	48.2	51.6
SIDS-CAR	38	44.8	52.1	58.3	63.7	68.2	70.5	72.2	74.6
SIDS-PAC	14.3	16.6	19.9	24.4	29.2	34.2	36.2	37.7	40.6
<b>Individuals owning a mobile phone* (%)</b>									
World	N/A	N/A	N/A	N/A	69.8	72.9	75	76.4	78.1
SIDS	N/A	N/A	N/A	N/A	65.9	69.7	71.6	72.4	73.6
SIDS-AFR	N/A	N/A	N/A	N/A	62	64.9	68.1	69.6	N/A
SIDS-CAR	N/A	N/A	N/A	N/A	67.1	70.4	72.7	73.4	N/A
SIDS-PAC	N/A	N/A	N/A	N/A	51.9	54.8	56.1	57	N/A
<b>Data-only mobile broadband basket price as a % of GNI per capita**</b>									
World	N/A	N/A	N/A	1.9	1.9	1.7	1.9	1.4	1.2
SIDS	N/A	N/A	N/A	3.2	3.2	2.9	3.6	3.1	2.8
SIDS-AFR	N/A	N/A	N/A	3.2	3.2	2.8	3.3	3.1	2.1
SIDS-CAR	N/A	N/A	N/A	2.6	3	2.8	3.1	2.9	2.4
SIDS-PAC	N/A	N/A	N/A	4.4	4.4	4.4	4.2	4.3	3
<b>Fixed broadband basket price as a % of GNI per capita**</b>									
World	N/A	N/A	N/A	3	3.1	2.9	3.3	3	2.7
SIDS	N/A	N/A	N/A	4.5	4.4	4.1	5	4.4	3.9
SIDS-AFR	N/A	N/A	N/A	3.7	3.7	3	4.2	2.9	2.2
SIDS-CAR	N/A	N/A	N/A	3.9	4	3.6	4.9	3.7	3.9
SIDS-PAC	N/A	N/A	N/A	12.7	8.9	12.2	12.3	12	6

Note: \* Individuals aged 10 or older. \*\* To eliminate the effect of annual changes in data availability on price trends, median values shown here were calculated based on a comparable set of countries for which data is available for each year from 2018 to 2023 (37 SIDS for the mobile-broadband and 35 for the fixed-broadband basket). All data are ITU estimates. N/A: Not available. For the composition of the regional classification of SIDS, see Annex 1.

Source: ITU.

**Table A2.2: Selected connectivity indicators for SIDS (Part 1)**

Values are for 2022 unless specified. Only SIDS for which data is available for at least one of the selected indicators are featured.

	% indiv. using the Internet	Mob.-cell. subs. per 100 inhab.	Fixed-tele-phone subs. per 100 inhab.	Mobile-broad-band subs. per 100 inhab.	Fixed-broad-band subs. per 100 inhab.
World (2023)	67.4	110.6	10.7	87.4	18.6
SIDS (2023)	67.4	91.9	11.1	62.7	9.8
American Samoa	N/A	N/A	22.2	N/A	N/A
Anguilla	N/A	165.1	38.1	N/A	N/A
Antigua and Barbuda	91.4	197.4	29.0	51.5	8.6
Aruba	N/A	132.3	32.8	N/A	17.8
Bahamas	94.4	98.5	21.1	98.5	20.5
Barbados	76.2	114.9	43.1	64.8	37.6
Belize	70.4	66.0	4.7	44.2	9.0
Bermuda	N/A	106.0	38.9	10.9	35.8
British Virgin Islands	N/A	120.9	72.5	12.6	25.3
Cabo Verde	72.1	99.2	9.6	74.6	5.8
Cayman Islands	N/A	146.7	52.8	N/A	46.9
Comoros	N/A	100.2	0.9	61.5	0.2
Cook Islands	N/A	99.9	41.1	76.5	17.6
Cuba	73.2	67.8	14.0	42.2	2.9
Curacao	N/A	26.4	89.9	51.8	31.9
Dominica	83.4	85.9	10.3	67.8	19.4
Dominican Rep.	89.0	90.4	10.2	71.6	10.7
Fiji	85.2	107.2	5.2	76.1	2.5
French Polynesia	N/A	107.0	45.2	89.5	25.5
Grenada	79.9	81.1	20.9	76.6	24.5
Guinea-Bissau	31.6	125.9	N/A	62.5	0.2
Guyana	85.3	106.4	15.5	33.8	11.8
Haiti	N/A	63.9	0.1	28.2	0.3
Jamaica	85.1	106.2	15.8	66.7	15.0
Kiribati	54.4	48.8	0.0	48.4	0.1
Maldives	83.9	136.5	2.6	53.6	17.4
Marshall Islands	73.2	38.0	N/A	N/A	2.3
Mauritius	75.5	161.4	35.6	117.3	25.7

## Measuring digital development

(continued)

	% indiv. using the Internet	Mob.-cell. subs. per 100 inhab.	Fixed-tele- phone subs. per 100 inhab.	Mobile-broad- band subs. per 100 inhab.	Fixed-broad- band subs. per 100 inhab.
Micronesia	40.5	19.4	6.2	N/A	5.3
Nauru	82.7	79.9	N/A	32.0	N/A
New Caledonia	N/A	90.3	15.9	N/A	19.1
Niue	N/A	N/A	51.6	N/A	N/A
Northern Marianas	N/A	N/A	40.4	N/A	N/A
Palau	N/A	132.9	44.3	N/A	6.8
Papua New Guinea	27.0	48.4	1.7	11.1	0.2
Puerto Rico	N/A	119.8	22.7	102.0	21.0
Saint Kitts and Nevis	76.5	119.1	33.0	101.7	42.3
Saint Lucia	74.2	95.6	7.9	51.8	21.2
Saint Vincent and the Grenadines	77.7	100.5	10.6	58.5	28.5
Samoa	75.3	60.4	2.1	33.6	0.8
Sao Tome and Principe	57.0	86.4	1.1	40.6	2.0
Seychelles	86.7	191.5	17.8	99.2	35.0
Singapore	96.0	163.6	33.2	163.6	37.7
Solomon Islands	45.0	67.0	1.0	18.1	0.1
Suriname	75.8	150.3	17.5	124.3	20.2
Timor-Leste	40.8	110.4	0.1	29.9	0.0
Tonga	57.5 <sup>-1</sup>	60.7	10.2	60.7	6.4
Trinidad and Tobago	80.0	130.6	21.3	54.7	25.4
Turks and Caicos Islands	N/A	N/A	8.9	N/A	N/A
Tuvalu	81.2	80.3	17.9	N/A	4.0
Vanuatu	69.9	78.2	1.1	324.8	1.1
Virgin Islands (U.S.)	N/A	79.9	75.9	N/A	8.7

<sup>-1</sup>: 2021.

Note: Estimates appear in italics.

Source: ITU.

**Table A2.3: Selected connectivity indicators for SIDS (Part 2)**

Values are for 2022 unless specified otherwise. Only SIDS for which data is available for at least one of the selected indicators are featured.

	% pop. covered by a mobile-cellular network	% pop. covered by at least a 3G mobile network	% pop. covered by at least a 4G mobile network	% pop. covered by at least a 5G mobile network	Mobile broadband basket as a % of GNI p.c. (2023)	Fixed broadband basket as a % of GNI p.c. (2023)	Mobile broadband traffic per subs. (GB)	Fixed broadband traffic per subs. (GB)	Intern. bandw. per Internet user (kbit/s)
<b>World (2023)</b>	<b>97.9</b>	<b>95</b>	<b>90.1</b>	<b>38.4</b>	<b>1.3</b>	<b>2.9</b>	<b>912.7</b>	<b>4,378.3</b>	<b>224.2</b>
<b>SIDS (2023)</b>	<b>91.6</b>	<b>85.3</b>	<b>70.5</b>	<b>21</b>	<b>2.6</b>	<b>4.1</b>	<b>3.3</b>	<b>26.4</b>	<b>119.1</b>
American Samoa	92.7	N/A	N/A	0	N/A	N/A	N/A	N/A	N/A
Anguilla	99	99	N/A	0	3.3	4.3	N/A	N/A	N/A
Antigua and Barbuda	99	99	99	0	2.6	3.9	N/A	N/A	N/A
Aruba	99	95	64.1	0	1.2	2.7	N/A	N/A	N/A
Bahamas	99	98	95	0	1.0	2.2	N/A	1,928.1	206.7
Barbados	100	100	99	0	3.1	3.6	38.1 <sup>1</sup>	N/A	N/A
Belize	98	98	70	N/A	2.4	4.4	N/A	N/A	N/A
Bermuda	99.7	99.7	99.7	0	0.6	0.8	N/A	N/A	N/A
British Virgin Islands	100	100	100	0	0.7	2.9	N/A	N/A	N/A
Cabo Verde	99.3	93.8	80.2	0	2.1	2.2	60.2	2,172.0	67.2
Cayman Islands	100	100	100	0	1.3	2.0	N/A	N/A	N/A
Comoros	92	87	85	0	6.9	25.8	20.9	19.1	63.0
Cook Islands	100	55	55	0	1.2	2.2	N/A	N/A	N/A
Cuba	87.5	74.3	49.5	0	21.7	37.9	54.5	406.8	17.9
Curacao	99	99	99	0	2.2	4.1	N/A	1,906.9	N/A
Dominica	100	100	100	0	2.9	5.8	N/A	5,499.6	N/A
Dominican Rep.	99.5	98.7	97.6	52.7	2.0	2.2	N/A	N/A	98.2
Fiji	98	96	80	0	3.3	1.6	N/A	N/A	N/A
French Polynesia	98	90	90	0	0.6	3.6	120.1	1,918.3	N/A
Grenada	98	98.5	98.5	0	4.8	4.9	N/A	N/A	N/A
Guinea-Bissau	100	48	31	0	9.8	61.7	19.8	N/A	28.4
Guyana	97.3	93.2	50	0	1.3	1.9	N/A	N/A	N/A
Haiti	70	60	35	0	4.5	41.0	N/A	N/A	N/A
Jamaica	100	99	99	0	5.2	8.3	37.1	5,744.7	123.9
Kiribati	74	73	64	0	5.1	N/A	44.5	255.5	21.1
Maldives	100	100	100	53	1.2	2.0	53.4	2,489.2	N/A

## Measuring digital development

(continued)

	% pop. covered by a mobile-cellular network	% pop. covered by at least a 3G mobile network	% pop. covered by at least a 4G mobile network	% pop. covered by at least a 5G mobile network	Mobile broadband basket as a % of GNI p.c. (2023)	Fixed broadband basket as a % of GNI p.c. (2023)	Mobile broadband traffic per subs. (GB)	Fixed-broadband traffic per subs. (GB)	Intern. bandwidth per Internet user (kbit/s)
Marshall Islands	65	N/A	N/A	N/A	3.0	7.6	N/A	N/A	N/A
Mauritius	99	99	99	33	0.7	1.3	66.9	2,297.3	261.4
Micronesia	80	15	0	0	8.7	5.8	N/A	N/A	N/A
Nauru	98	98	30	0	2.3	N/A	N/A	N/A	N/A
New Caledonia	97.4	97.4	79.5	0	0.7	N/A	N/A	N/A	N/A
Northern Marianas	N/A	34.8	10	18.4	N/A	N/A	N/A	N/A	N/A
Palau	98	89	0	0	2.5	6.0	N/A	N/A	N/A
Papua New Guinea	89	64.3	50	0	16.5	3.5	N/A	N/A	N/A
Puerto Rico	100	100	90	49	1.1	1.3	N/A	N/A	N/A
Saint Kitts and Nevis	100	100	100	0	2.3	3.7	N/A	N/A	N/A
Saint Lucia	100	100	96	0	4.8	4.1	N/A	5,367.2	N/A
Singapore	100	100	100	73.6	0.2	0.7	99.5	4,626.7	8,855.0
Sint Maarten	N/A	N/A	N/A	N/A	0.4	1.1	N/A	N/A	N/A
Solomon Islands	95	45	25	0	10.2	49.7	N/A	N/A	N/A
Suriname	100	95	82	15	2.8	4.8	N/A	N/A	177.1
Timor-Leste	96.5	96.5	45	0	4.3	29.9	N/A	N/A	N/A
Tonga	99	99	96	0	2.3	1.9	2.0 <sup>-1</sup>	343.4 <sup>-1</sup>	N/A
Trinidad and Tobago	100	100	94	0	2.4	2.9	126.2	3,861.0	261.4
Turks and Caicos Islands	98	95	95	0	1.9	4.8	N/A	N/A	N/A
Tuvalu	50	48	0	0	2.5	12.4	N/A	N/A	N/A
Vanuatu	90	70	70	0	3.0	19.0	13.8	968.6 <sup>-1</sup>	38.5
Virgin Islands (U.S.)	N/A	80.1	71.0	6.4	N/A	N/A	N/A	N/A	N/A

<sup>-1</sup>: 2021.

Notes: estimates are in italic; world and SIDS median values are based on a pool of economies with data available for both 2022 and 2023.

Source: ITU.

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