

# ***ADB & Digital Technology in the Pacific***



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<p><b>Digital Strategies in The Pacific</b></p>	<p><b>ADB &amp; The Pacific</b></p>	<p><b>Digital Connectivity &amp; Access: ADB Initiatives</b></p>	<p><b>Embracing Digital Transformation: ADB Initiatives</b></p>
<p><b>Embracing Digital Transformation – a Case Study:  Digital Finance Nauru <small>(ADB Pipeline Project 2027)</small></b></p>	<p><b>Connectivity &amp; Redundancy</b></p>	<p><b>Cybersecurity: Pacific Snapshot</b></p>	<p><b>Cybersecurity: Pacific Case Studies</b></p>
<p><b>Cybersecurity: Pacific Partners, Portals &amp; Resources</b></p>	<p><b>Cybersecurity: ADB's Pacific Focus: Finance Sector</b>  <small>eKYC pilot &amp; Cybersecurity Actionable Risk Management Framework Toolkit</small></p>	<p><b>Appendix: E-commerce in the Pacific</b>  <small>PIFS Pacific E-commerce Strategy &amp; Roadmap</small></p>	<p><b>Appendix: PRIF ICT Working Group</b></p>
<p><b>Appendix:  Pacific SIDS Development Indicators</b></p>	<p><b>Appendix:  ADB &amp; Private Sector Investment</b></p>	<p><b>Appendix:  ADB, Partnerships &amp; Working for Us</b></p>	<p><b>Appendix:  ADB Completed, Ongoing &amp; Pipeline Pacific Technical Assistance &amp; Projects with Digital Technology components</b></p>
<p><b>Appendix:  ADB Additional Resources &amp; Contact Us</b></p>			

# Digital Strategies in The Pacific

# Digital Strategies in the Pacific

- UN

- ✓ Sustainable Development Goals
  - Global Digital Compact
  - SDG Digital Acceleration Agenda
- ✓ ITU Connect 2030 Agenda
- ✓ WSIS Forum
- ✓ The Antigua and Barbuda Agenda for SIDS (ABAS) – a Renewed Declaration for Resilient Prosperity

- Pacific Islands Forum (PIF)

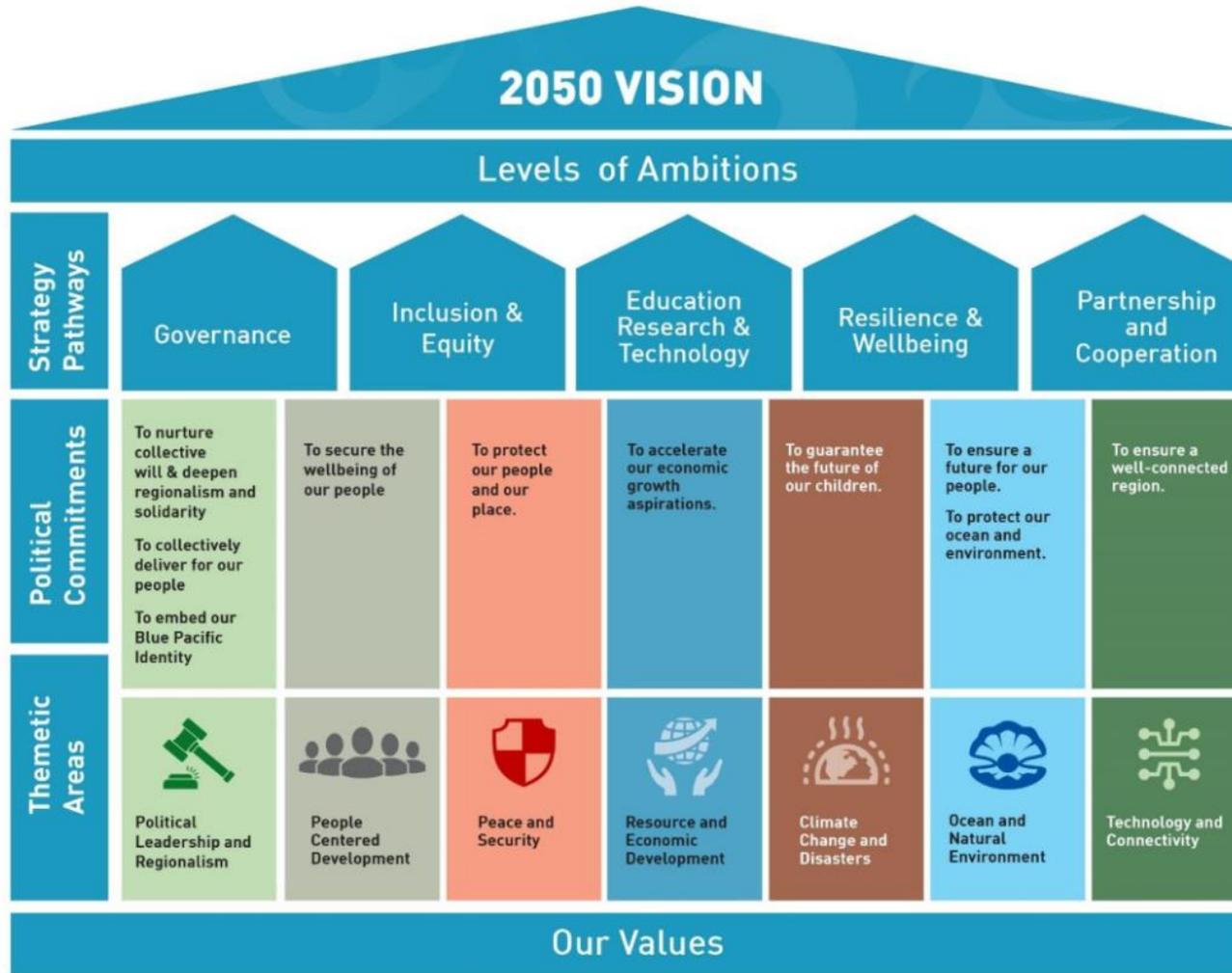
- ✓ 2050 Strategy for the Blue Pacific Continent
  - Technology & Connectivity
- ✓ Boe Declaration on Regional Security
- ✓ Pacific E-commerce Initiative
- ✓ Pacific ICT Ministers Dialogue 2023: Lagatoi Declaration



Boe Declaration on Regional Security



# PIF 2050 Strategy for the Blue Pacific Continent: “Technology and Connectivity” Theme



**A well-connected region and access to technology is critical for Pacific development**

Our ambition is that all Pacific peoples benefit from access to affordable, safe and reliable land, air and sea transport and ICT infrastructure, and systems and operations, while ensuring culturally sensitive user-protection and cyber security.

# Pacific ICT Ministerial Dialogue 2023: Lagatoi Declaration



- Digital Transformation
- Digital Innovation and Entrepreneurship
- Digital Infrastructure
- Digital Security and Trust
- Digital Capacity Building and Skills Development
- Regional Cooperation and Representation

# Lagatoi Declaration: Six Priority Areas



## ***Digital Transformation***

- Digital transformation serves as a catalyst for social and economic empowerment and has far reaching benefits to productivity, employment, skills, economic growth, trade, well-being and environmental sustainability.
- We commit to creating an enabling environment and promoting universal and affordable access to connectivity for all to accelerate Digital Transformation.

## ***Digital Innovation and Entrepreneurship***

- The adoption of digital online services will create value for individuals and businesses in the Pacific, who can benefit from access to information, tools to improve production and improved access to ICTs and digital government services, including health and education.
- We commit to promote digital government strategies, policies and programs to enable digital transformation of both public and private sectors, including micro, small and medium enterprises (MSMEs) in the Pacific.
- We commit to enable MSMEs to take full advantage of emerging technologies and facilitate their effective and meaningful access to digital platforms, as this will help enhance their competitiveness in an increasingly digitally connected world, facilitate their further integration into global value chains and support job creation.

# Lagatoi Declaration: Six Priority Areas



## ***Digital Infrastructure***

- Digital infrastructure underpins the delivery of digital services. Rolling out widespread, modern, and resilient infrastructure with sufficient capacity is key to development of the ICT sector in the Pacific.
- We commit to increase focus on the availability and quality of telecommunication networks and supportive infrastructure.
- We aim to increase coverage and penetration rates of high-speed meaningful broadband connectivity in order to accelerate the efforts to connect individuals and businesses in the Pacific.

## ***Digital Security and Trust***

- The take-up of digital services can be promoted by providing a safe and secure digital environment. A key step in developing a thriving ICT ecosystem is to provide individuals and businesses in the Pacific with the confidence they need to navigate digital and/or online spaces.
- We commit to establish trusted and secured systems which help create a stable environment supported by the development of conducive policy and regulatory frameworks, to facilitate the use of digital services.

# Lagatoi Declaration: Six Priority Areas



## ***Digital Capacity Building and Skills Development***

- For the Pacific to fully benefit from digital transformation and to develop a resilient ICT ecosystem, the support of a skilled ICT workforce and the promotion of necessary digital literacy and culturally sensitive user-protection is required.
- We aim to provide ICT technical skillsets including dedicated training to targeted segments of the population to increase demand for digital services and grow the digital economy, develop digital literacy programs for all to participate in the digital economy.
- We aim to promote capacity building efforts that go beyond technical skills, fostering an understanding of how people’s behavior and cultural norms interact with technology.

## ***Regional Cooperation and Representation***

- Successful digital transformation requires strong cross-border cooperation among Pacific Island Countries and Territories, and effective multi-stakeholder cooperation with United Nations agencies and other relevant global, regional and sub-regional fora, regional organisations, private sector, technical community, civil society and other relevant stakeholders.
- We intend to adopt a unified approach to set harmonised policy and regulatory frameworks; address common challenges; find solutions; mobilise resources more efficiently and enhance investment; and ensure shared accountability, commitment and values by Pacific Islands Forum Members.

# Digital Transformation Wheel

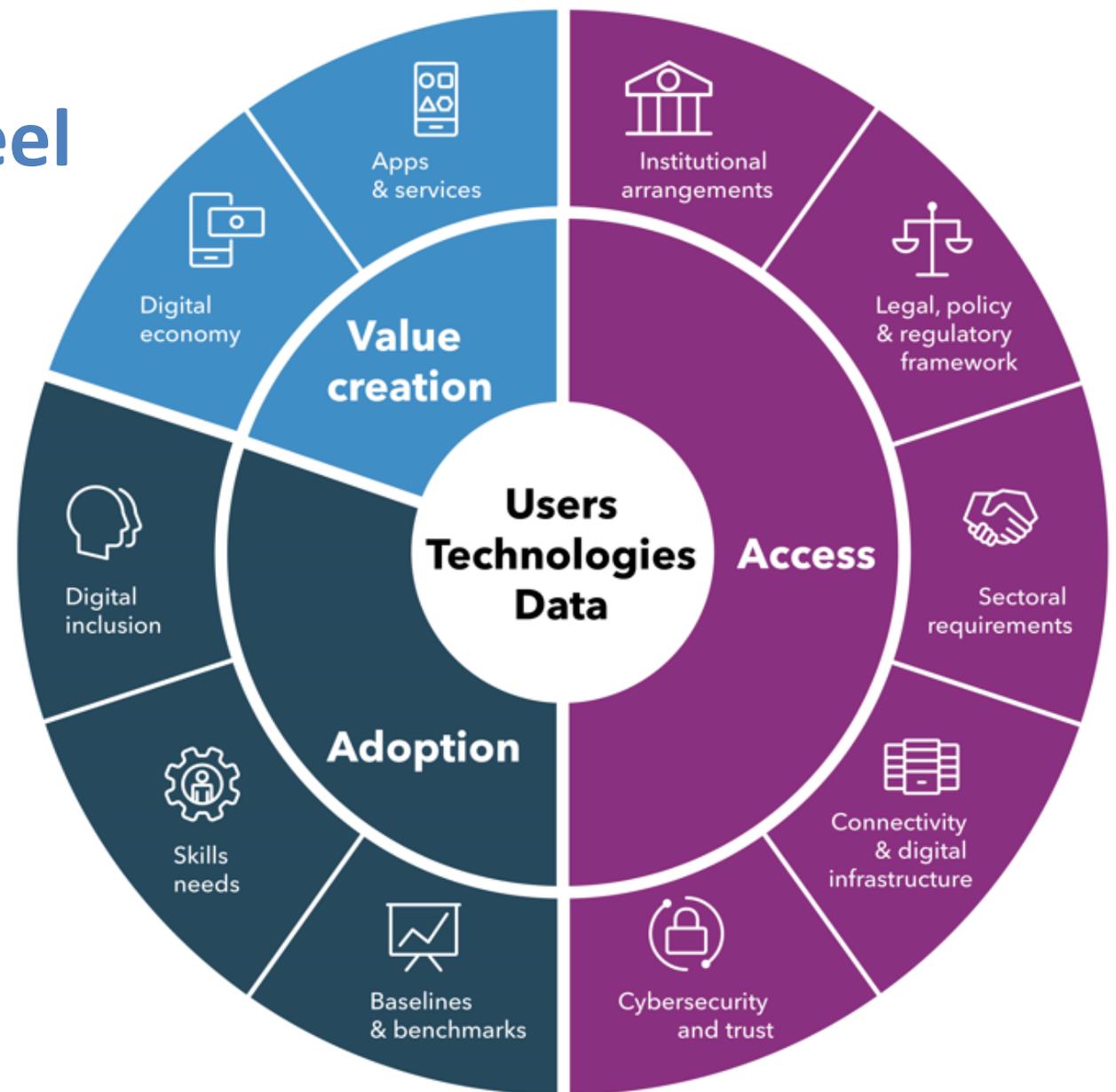
Digital transformation is about **users, technologies** and **data**.

The three streams and their building blocks:

**Access** is about creating the enabling governmental, economic and technological environment for everyone and everything to connect.

**Adoption** is about making sure everyone is able to get online, and

**Value creation** is about enabling everyone to contribute and reap the benefits brought by a digitalized society and economy.

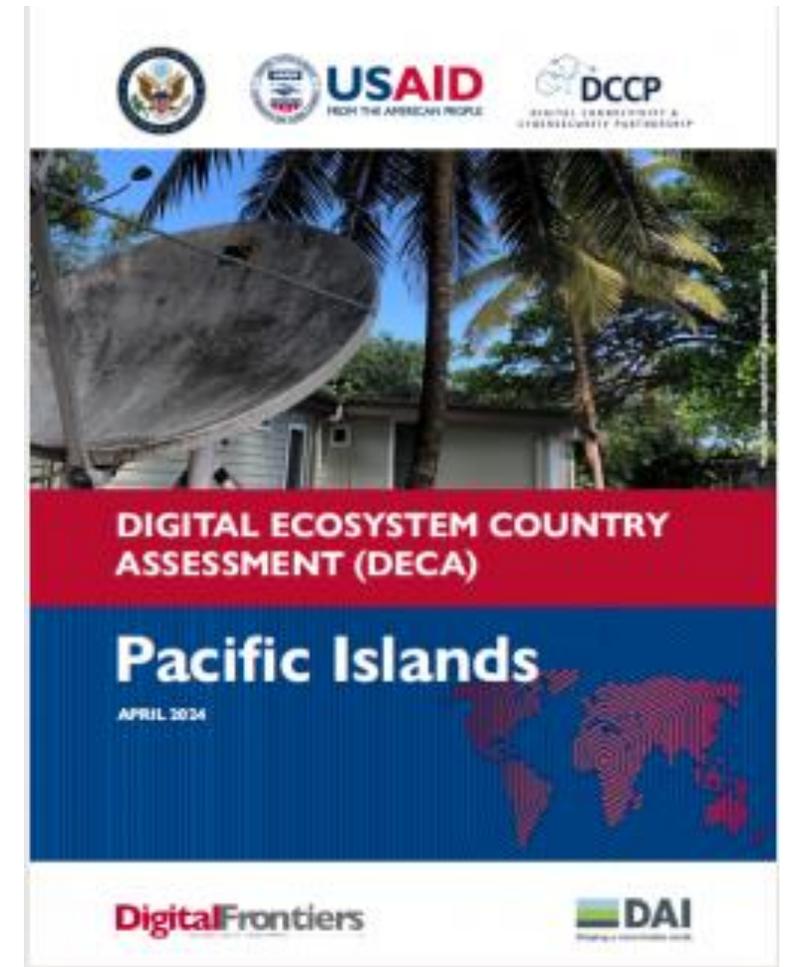


Source:  
ITU Telecommunication Development Bureau (BDT)  
[The BDT Digital Transformation Wheel \(itu.int\)](https://www.itu.int/en/ITU-T/development/BDT-Digital-Transformation-Wheel)



# USAID: Pacific Islands Digital Ecosystem Country Assessment

- Includes 12 Pacific Island Countries (PICs): FSM, FIJ, KIR, NAU, PLW, PNG, RMI, SAM, SOL, TON, TUV, VAN
- 12 recs for a more inclusive, safe & enabling environment.
- Low mobile adoption & significant mobile usage gaps caused by affordability challenges, low digital literacy, & lack of locally relevant content leave people behind & risk widening existing inequalities.
- Mis/disinformation growing challenge due in part to media consumption shift from traditional broadcast to digital & social media.
- Government ICT ministries & equivalents face challenges in digital system development & digital service maintenance due to low capacity exacerbated by difficulties in retaining talent.
- Institutional & infrastructural limitations impede transition to digital econ, particularly in smaller econs. Digital trade & e-commerce takeoff undermined by weak enabling factors including low digital literacy, cybersecurity gaps, data protection & policy legislation, & unreliable connectivity.
- Digital talent pool, dominated by youth, growing in response to increased demand for local skills. However, out-migration & lack of skilled workers result in supply/demand mismatch.



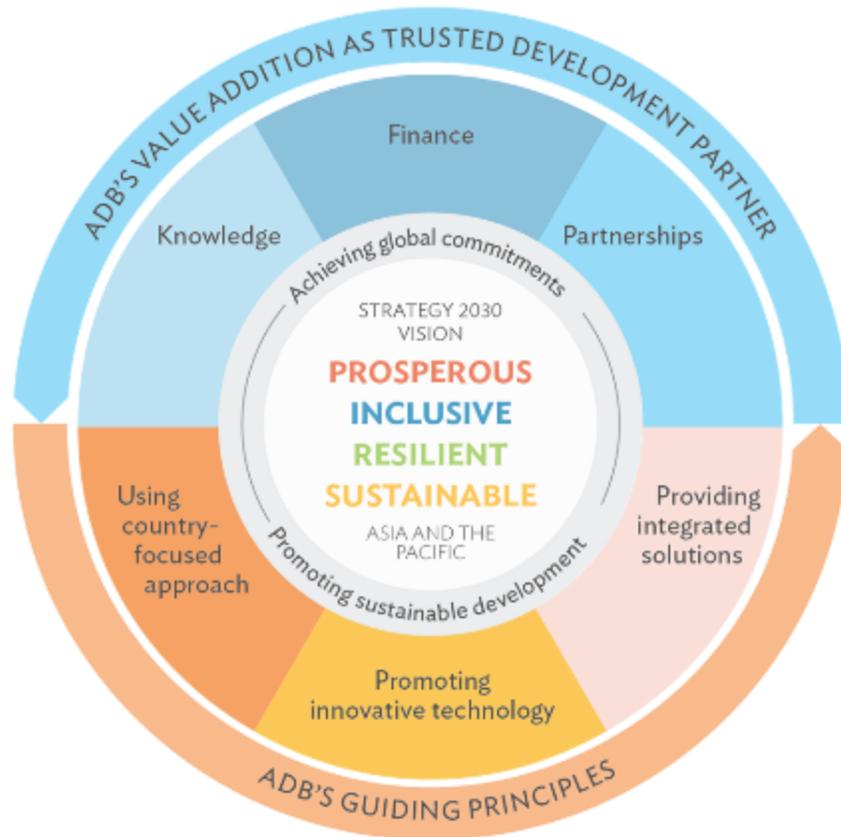
# ADB & The Pacific

# About the Asian Development Bank

- Aim for prosperous, inclusive, resilient, and sustainable Asia and the Pacific, while sustaining its efforts to eradicate extreme poverty in the region.
- Est. 1966, ADB is owned by [68 governments](#) around the world – 49 from the region
- ADB Charter vests all powers of the institution in the [Board of Governors](#), which in turn delegates some of these powers to the [Board of Directors](#). The Board of Governors meets [annually](#).
- We assist governments by providing [loans, grants, and technical assistance](#) to promote social and economic development – including [Digital Technology](#).
- 2022: Loans and grants of more than \$20.5B USD
  - ✓ \$994M USD Loans and grants to Pacific Governments
- [Private Sector Financing](#)
- 45 field offices, 3,687 employees spanning 64 nationalities.
- [Projects | Asian Development Bank \(adb.org\)](#)



# THE REGION'S POVERTY CHALLENGE



- Asia and the Pacific region is still home to around 40% of the world's extreme poor<sup>1</sup>
- An estimated \$1.7 trillion per year is needed until 2030 to fill infrastructure gaps
- Of the 10 countries most exposed to climate change, environmental stress, and natural disaster risk, 7 are ADB developing member countries<sup>2</sup>

1/ Extreme poverty is measured by the \$1.90/day threshold at 2011 purchasing power parity. World Bank.PovcalNet. <http://iresearch.worldbank.org/PovcalNet/home.aspx>.

2/ These countries are Bangladesh, Cambodia, the Philippines, Solomon Islands, Timor-Leste, Tonga, and Vanuatu. L. Kirch et al. 2017. WorldRiskReport: Analysis and Prospects 2017. Berlin: Bündnis Entwicklung Hilft. <https://www.adb.org/sites/default/files/institutional-document/435391/strategy-2030-main-document.pdf>.

# STRATEGY 2030

## OPERATIONAL PRIORITIES



Addressing remaining poverty and reducing inequalities



Accelerating progress in gender equality

At least 75% of number of ADB committed operations by 2030



Tackling climate change, building climate and disaster resilience, and enhancing environmental sustainability

At least 75% of number of ADB committed operations by 2030, total of \$100 billion from ADB's own resources from 2019 to 2030



Making cities more livable



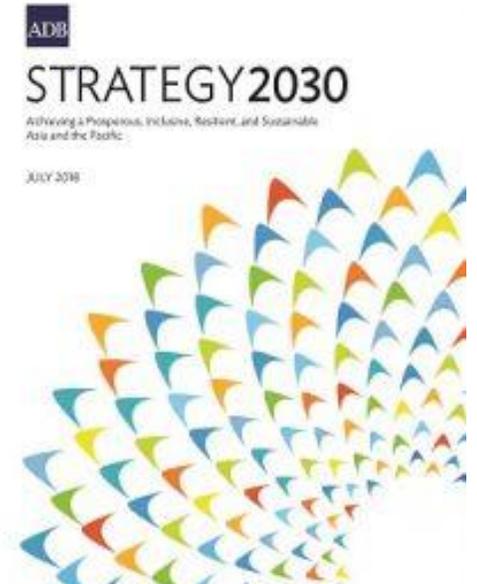
Promoting rural development and food security



Strengthening governance and institutional capacity



Fostering regional cooperation and integration



## KEY APPROACHES



Expanding private sector operations

1/3 of number of ADB committed operations by 2024



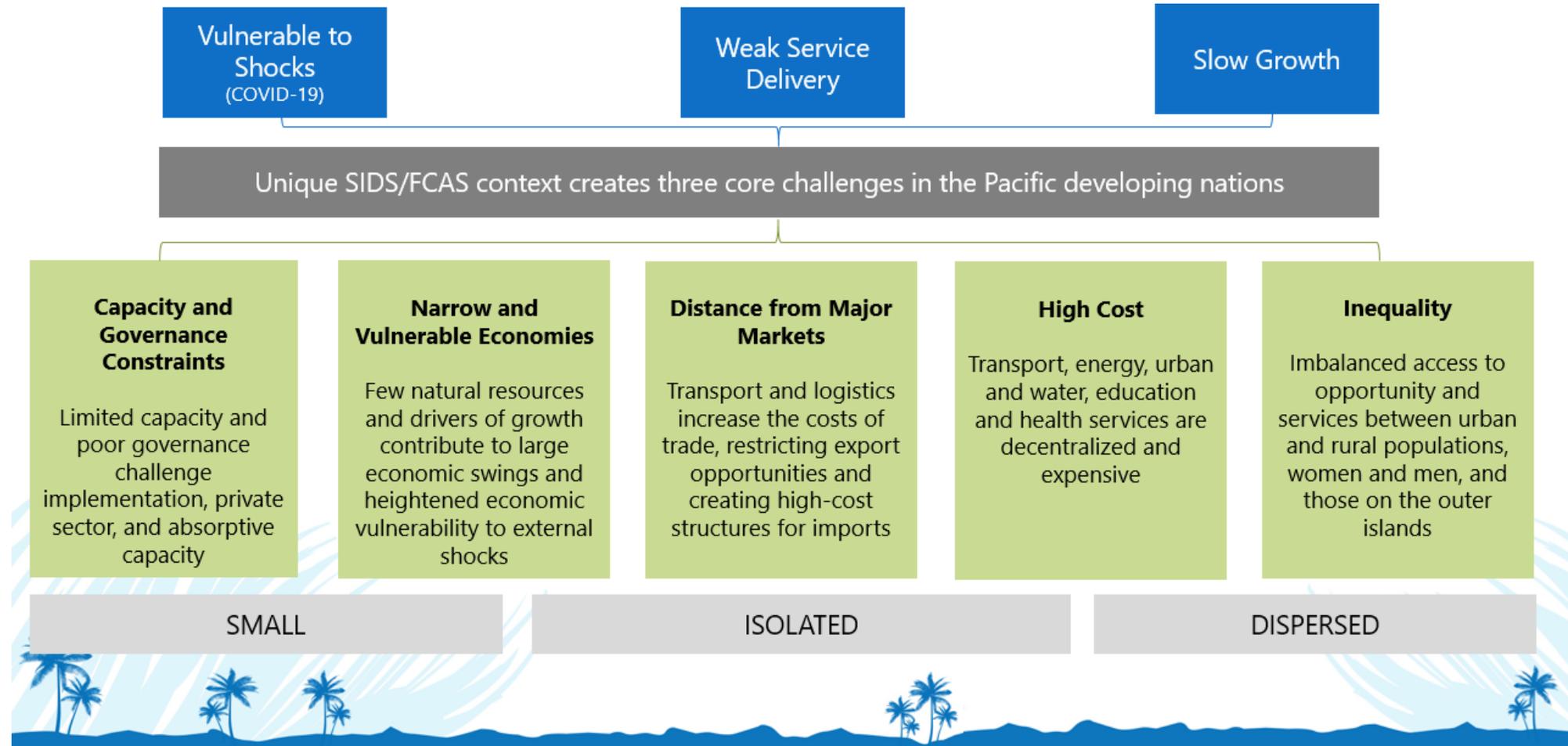
Catalyzing and mobilizing financial resources for development

\$1 in private sector operations financing matched by \$2.50 of cofinancing



Strengthening knowledge services

# Pacific Core Development challenges



# ADB's Response



# Pacific Approach 2021–2025

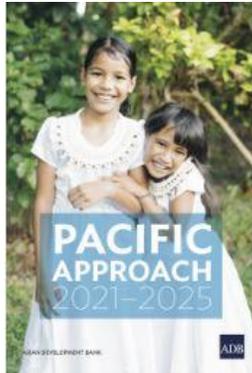
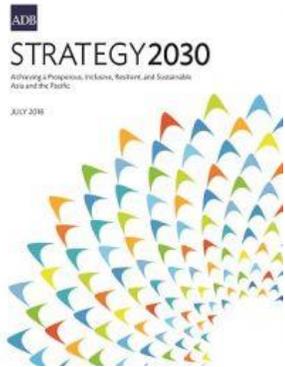
- A **strategy document** endorsed by Board of Directors
- **Serves as the Country Partnership Strategy** for the 12 Pacific small island developing states (SIDS): Cook Islands, Kiribati, Marshall Islands, Federated States of Micronesia, Nauru, Niue, Palau, Samoa, Solomon Islands, Tonga, Tuvalu, and Vanuatu [PIC-12]
- Guides and complements the annual **Country Operations Business Plans (COBPs)** for each of the PIC-12
- Individual CPS for Fiji (2024-28) and Papua New Guinea (2021-25)

## Country Operations Business Plans

- ADB works with each developing member country to map out a medium-term development strategy and a 3-year country operations business plan (COBP) to implement it.

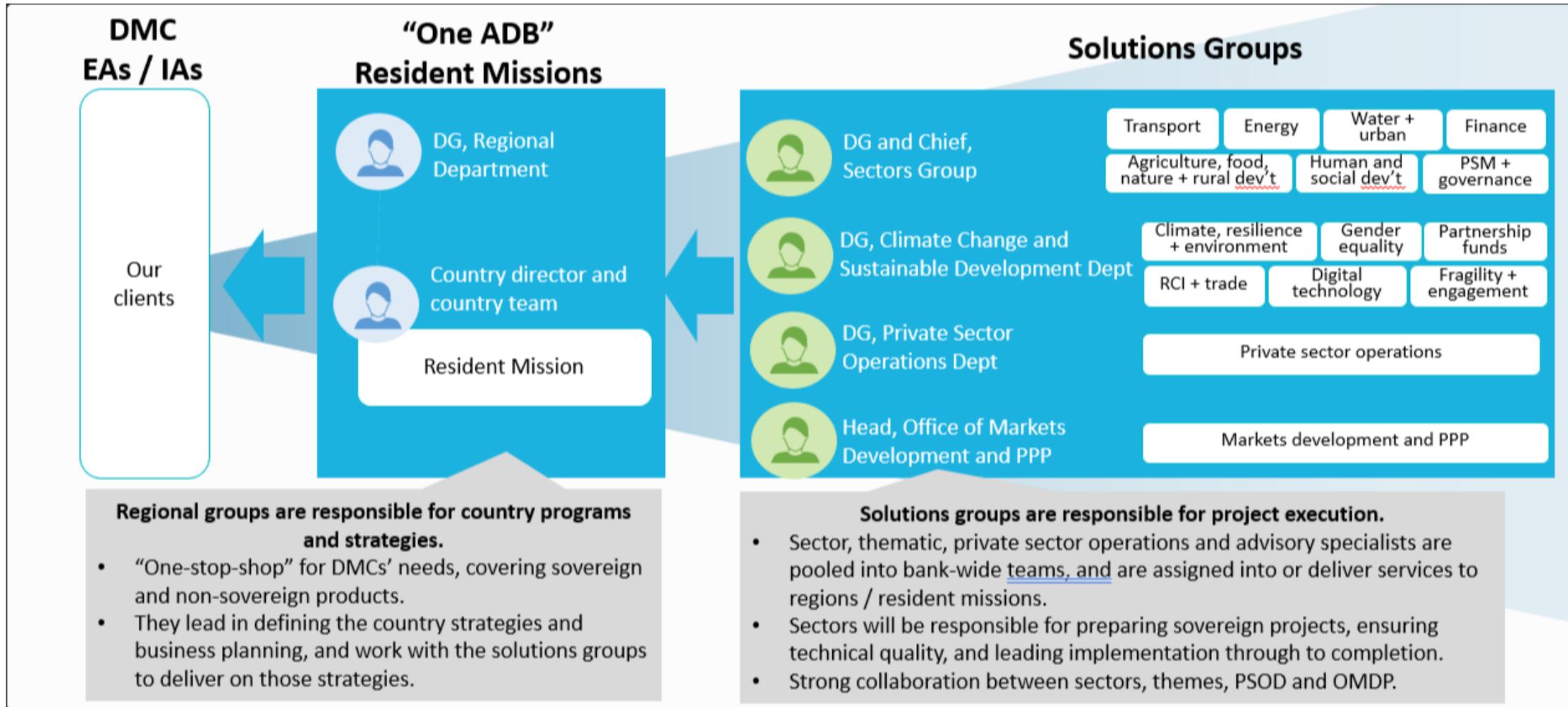
## Regional Cooperation Strategy and Programs (RCS)

- Strategies that outline how an ADB-defined region or subregion in Asia and the Pacific can work together to foster economic growth and cooperation.



- [ADB Strategy 2030](#)
- [Pacific Approach, 2021-2025](#)
- [PNG CPS \(2021-2025\)](#)
- [Fiji CPS \(2024-2028\)](#)

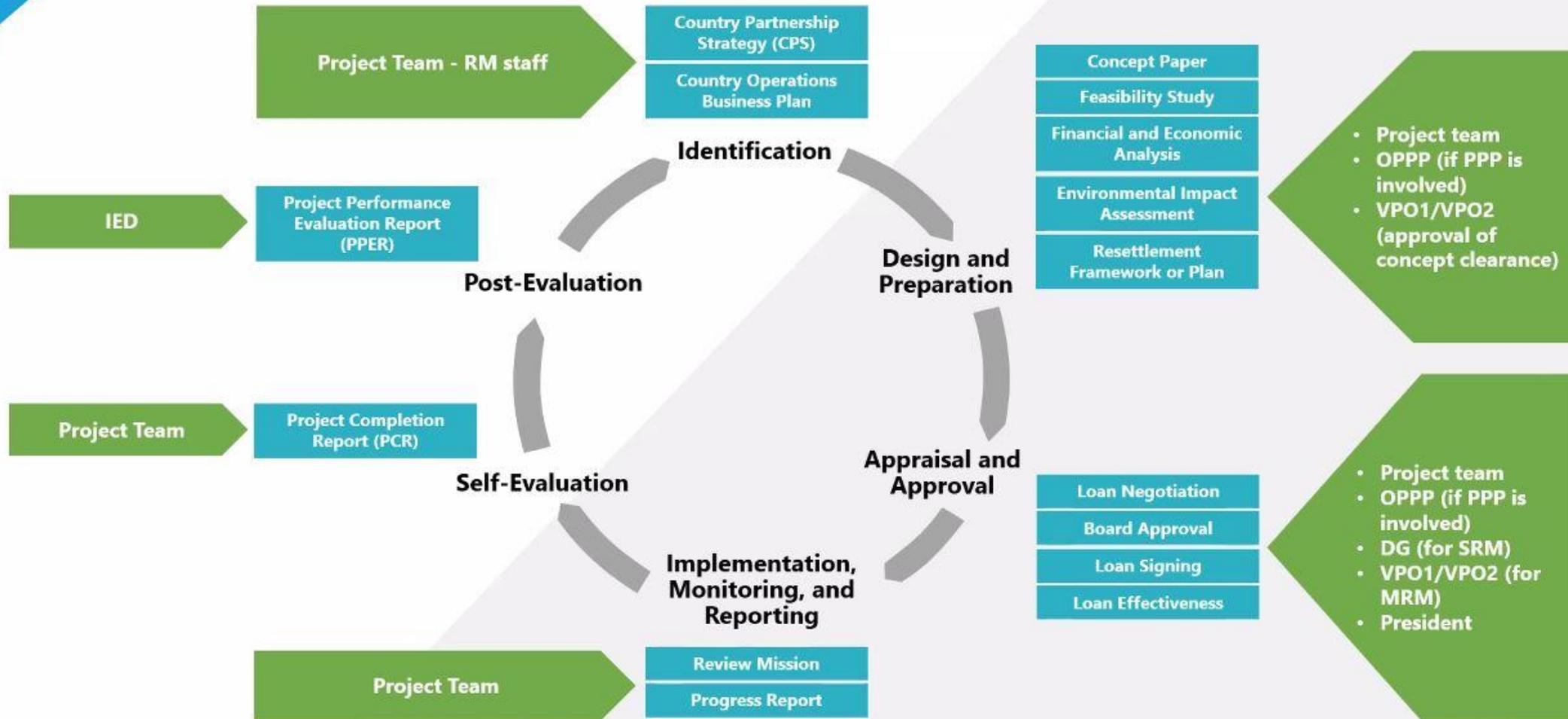
# ADB Structure: New Operating Model

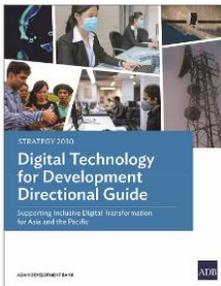


# ADB Project Cycle



# Project Cycle





# Digital Technology in Strategy 2030: Guiding Principles

## 1. Digital Transformation

- Promote innovations using DT in partnership with the private sector
- Support pre-feasibility studies on DT projects
- Support pilot projects where the possibility of scaling up is high

## 3. Inclusive Digital Development

- Support equitable access to digital infrastructures and technologies
- Promote innovative technologies meeting the needs of underserved groups such as the poor, women, disabilities, etc.

## 2. Integrated Approach

- Deliver integrated solutions through cross-sector/thematic collaboration (e.g. smart city, e-government)
- Support cross-cutting areas (e.g. internet, digital ID, digital payment,, cybersecurity, etc.)

## 4. Improve Digital Safeguards

- Support the management of privacy and security risks associated with digital technologies and platforms
- Promote responsible use of technologies and data

## Differentiated Approach Based on Country's Digital Readiness and Demands

- Conduct DT readiness assessments for DMCs
- Provide tailored support for DMCs based on DT readiness assessment
- Support developing digital strategies for DMCs in line with the Country Partnership Strategy

# Managing Digital Risk – A Primer

Published Dec 2023

## 1. DIGITAL DIAGNOSTICS: METHODS AND APPROACHES

- 1.1. Digital Economy for Africa Framework
- 1.2. USAID's Digital Ecosystem Framework
- 1.3. Digital Government Readiness Assessment
- 1.4. ADB's Country Digital Risk Assessment

## 2. DIGITAL TRANSFORMATION: CHALLENGES, SELECTION CRITERIA, AND FUTURE TRENDS

- 2.1. Digital Transformation Challenges
- 2.2. Technology Selection
- 2.3. Vendor Selection
- 2.4. Technology Forecasting and Foresight

## 3. DIGITAL RISK

- 3.1. The Spectrum of Digital Risks
- 3.2. The Risk Confidence Gap
- 3.3. Managing Digital Risks: Toward an Integrated Approach
- 3.4. Digital Risk Management Policies and Practices
- 3.5. The Upside of Effective Digital Risk Management

## 4. CYBERSECURITY RISKS

- 4.1. Macro-Perspectives
- 4.2. Key Cyber Security Concepts
- 4.3. Cybersecurity Frameworks and Maturity Models
- 4.4. The Next Generation of Cyber Risk Capabilities
- 4.5. The Growing Importance of Cybersecurity for the Development Agenda
- 4.6. Integrating Cybersecurity into Development Programs



## 5. THIRD-PARTY DIGITAL RISK MANAGEMENT

- 5.1. The Complex Risk Landscape of Third-Party Collaboration
- 5.2. Gaps and Vulnerabilities in the Third-Party Life Cycle
- 5.3. Framework and Processes for Third-Party Risk Management Integration

## 6. PRIVACY RISK AND DATA PROTECTION: BUILDING TRUST THROUGH GOVERNANCE

- 6.1. Trust Building
- 6.2. Managing Privacy Risk
- 6.3. The Data Processing Ecosystem
- 6.4. Establishing Data Governance
- 6.5. The Need for Regional and Global Solutions
- 6.6. Plausible Data Futures
- 6.7. Areas for Future Research and Collaboration

## 7. ETHICAL AI RISKS

- 7.1. The Global Race to Regulate Artificial Intelligence
- 7.2. Assessing Ethical AI Risks at an Organizational Level
- 7.3. AI Ethics Tool Kits

## 8. DIGITAL RISKS TO HUMAN RIGHTS AND VULNERABLE GROUPS

- 8.1. Digital Risks to Human Rights
- 8.2. Digitally Vulnerable Groups

## 9. SUSTAINABILITY RISKS

- 9.1. Linking Digital Services and Energy Demands
- 9.2. The Supply Chain Life-Cycle for Digital Products and Energy Technologies
- 9.3. Estimating the Global Energy Use of Data Centers
- 9.4. CryptoCurrency Mining

## 10. DIGITAL RESILIENCE

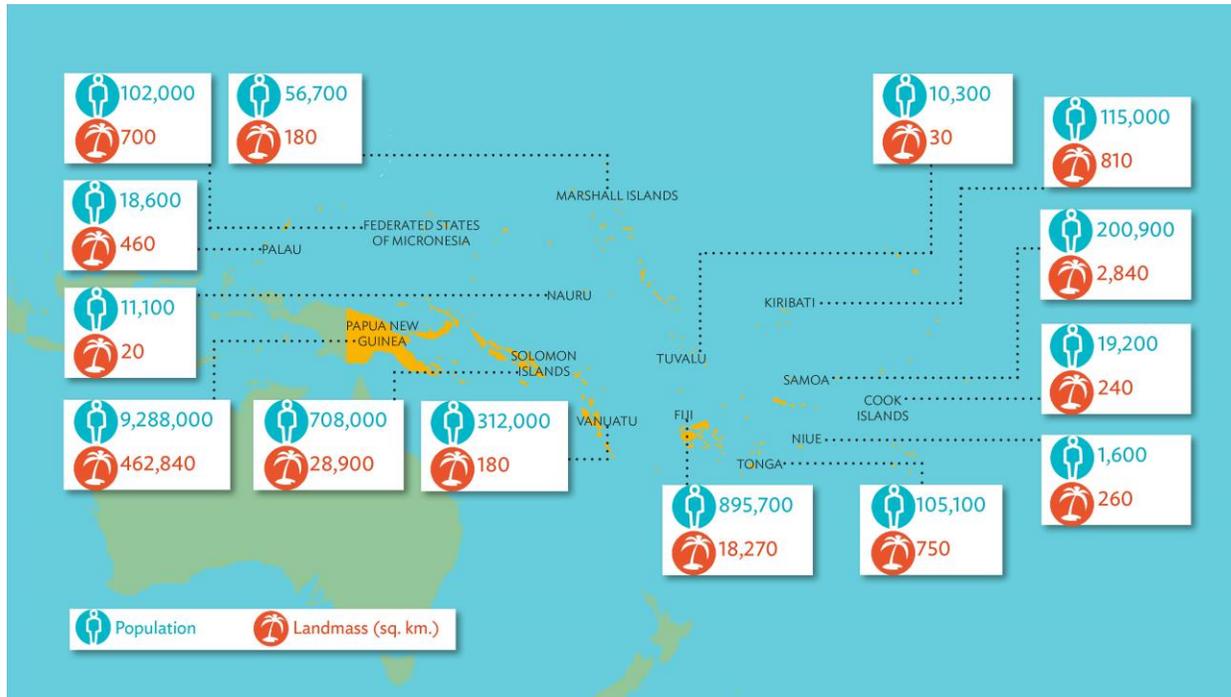
- 10.1. Digital Resilience
- 10.2. The Accelerating Nature of Disruptions
- 10.3. Risk Management and Crisis Learning
- 10.4. The Narrow View of Building Digital Resilience and Its Risks
- 10.5. From Crisis Response to a Holistic Digital Resilience Strategy

## APPENDIXES

1. Cybersecurity Glossary
2. Key Cyber Actors and Institutions
3. Cyber Security Resources
4. Options for Global Action on Cybercrime
5. Key Practices and Recommendations for Establishing a Cyber Supply Chain Risk Management Program
6. AI Ethics Toolkits: Purpose, Features, and Applications

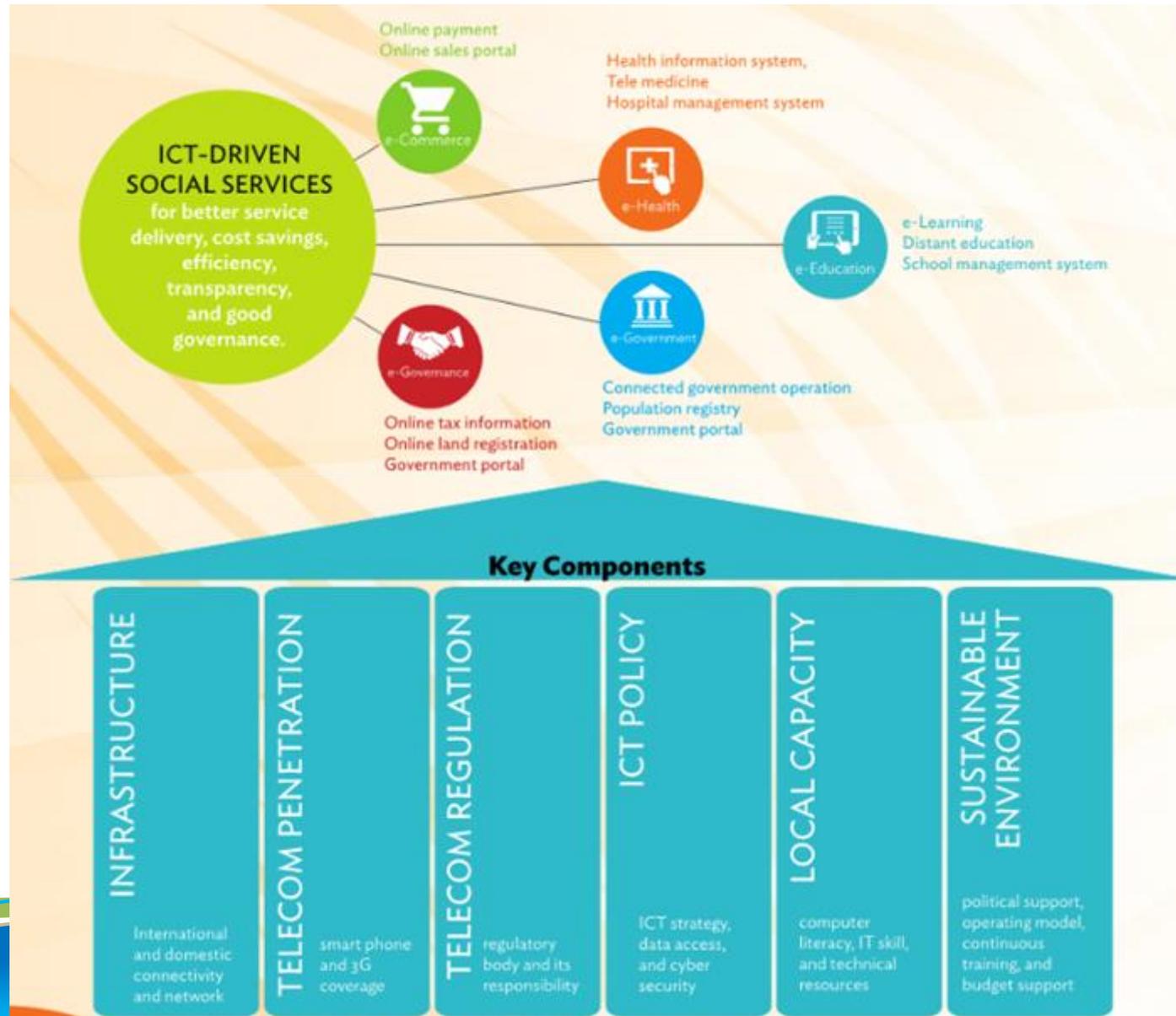
# ADB Projects should be:

- Replicable
- Scalable
- Impact
- Sustainable

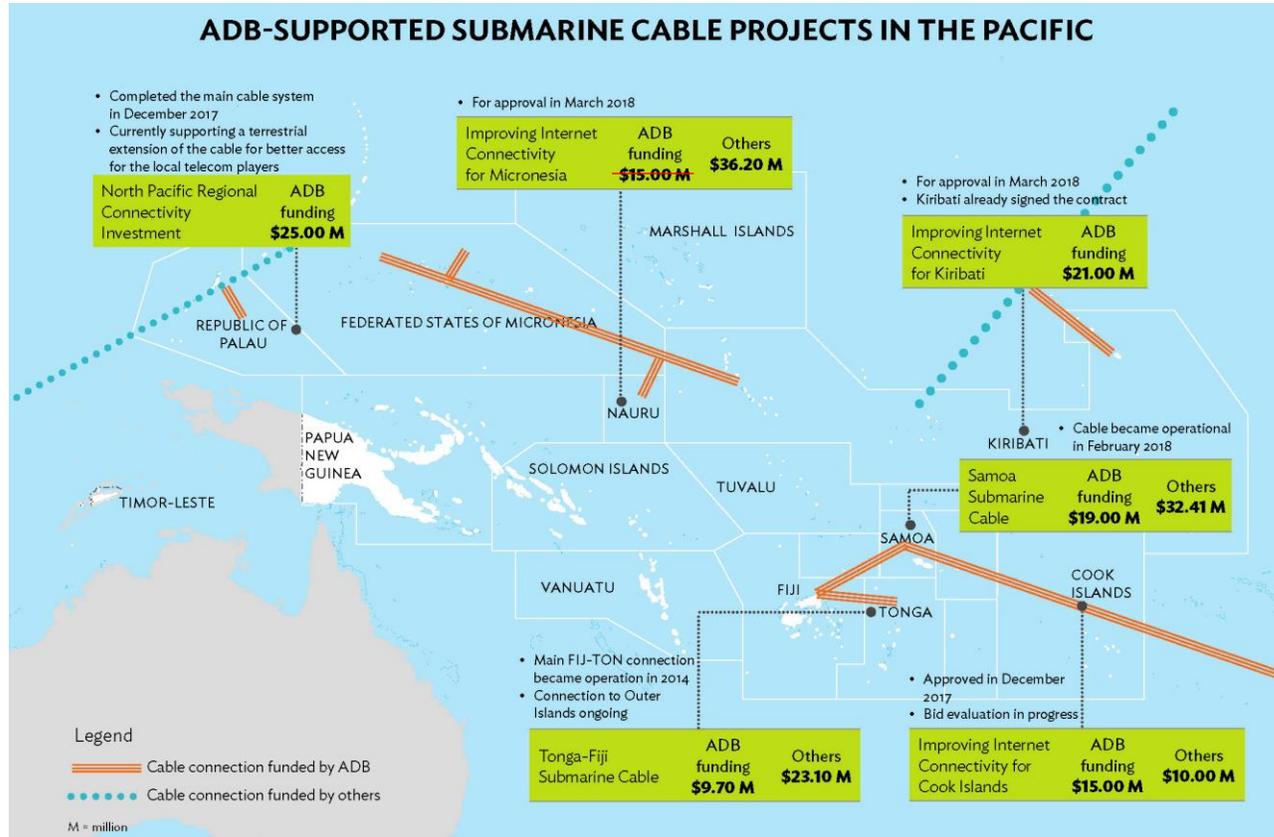


- Affordability and access to information and communication technology
- E-payment availability and options
- Logistics and delivery infrastructure
- Digital skills/literacy training through smart devices and e-learning hubs
- Cooperation for better, effective, more efficient taxation policies and options
- Laws, rules, and regulations for data privacy and cybersecurity

# ADB & Digital Technology Driven Social Services



# ADB & Pacific Connectivity Investments: Bridging the digital divide ...



## Kacific1 Satellite Launch to Bring Affordable Internet to Remote Parts of Asia and Pacific



Kacific1 as it orbits Asia and the Pacific (artist's impression). Photo courtesy of Kacific/ SpaceX.

News Release | 17 December 2019  
Read time: 2 mins

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## ADB Approves \$25 Million Cornerstone Investment to Improve Telecom Services in PNG

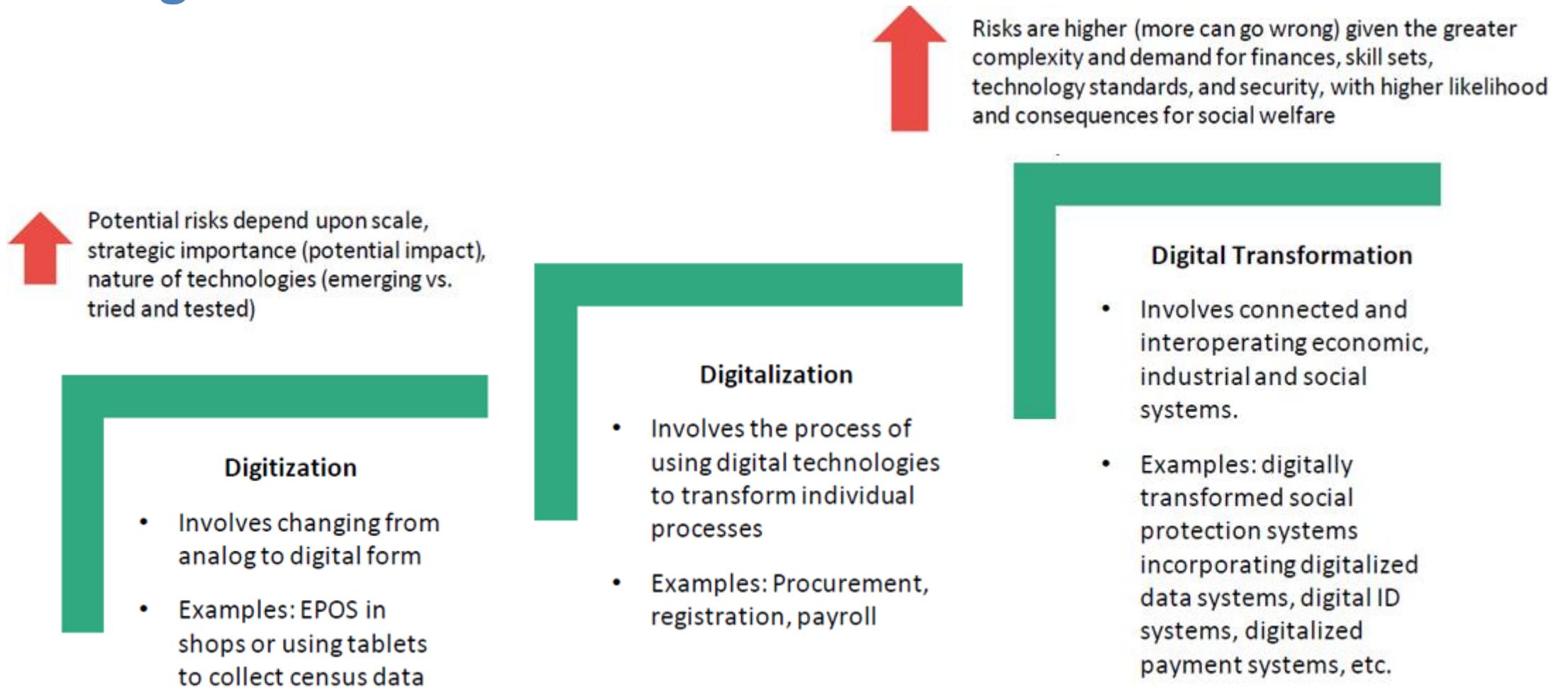
News Release | 03 September 2020  
Read time: 2 mins

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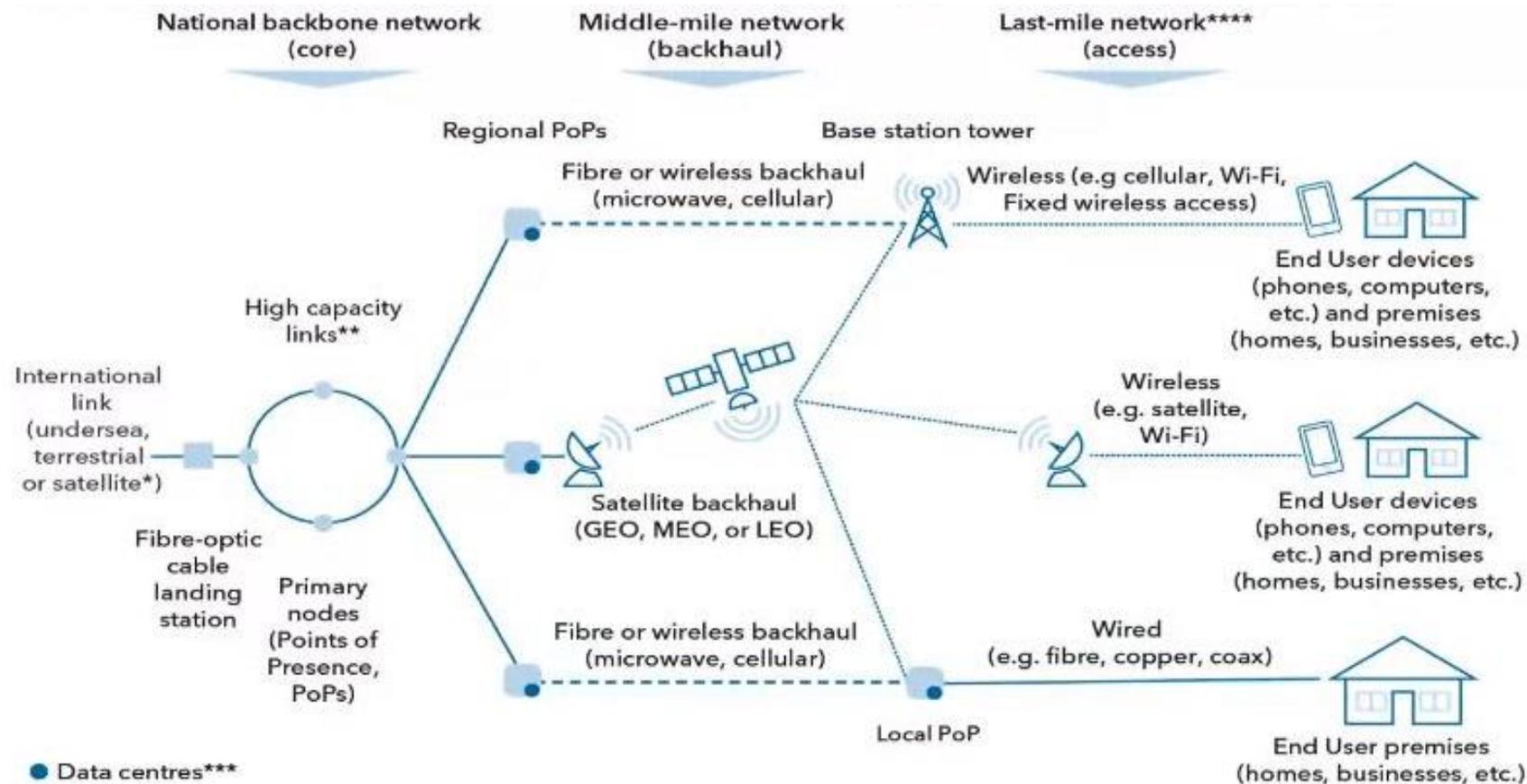
... also provides a pathway for digital vulnerability.

# Digitalization & Digital Transformation bring forth increasing risks & challenges



# Digital Connectivity & Access: ADB Initiatives

# Telecommunications network components supporting last-mile interventions in developing countries (ITU)

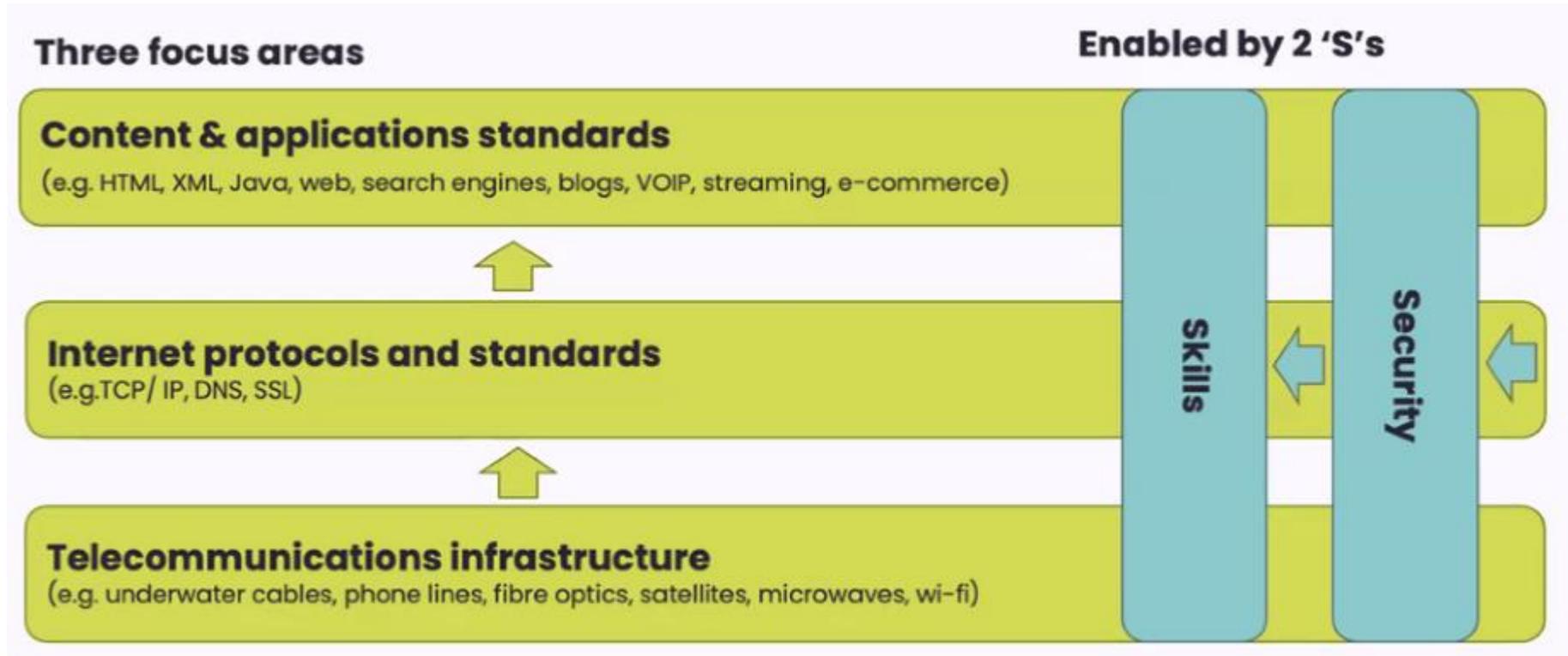


Source: Authors, adapted from various sources

Notes: Not exhaustive, for illustrative purposes and some segments are interchangeable further, particularly in the last-mile; \*In few country cases, satellite continues to be the main, or only, source of international connectivity; \*\* These are predominantly fiber optic links (terrestrial and undersea) but in few country cases, national backbone networks utilize wireless microwave and satellite; \*\*\* Data centers can be placed in various parts of the network, depending on the need to aggregate data (such as in core networks, or place data as close to end users as possible (such as in middle mile and last-mile networks); \*\*\*\* The technologies listed for the last mile are not exhaustive.

Source: ITU

# Consider the following model for the Internet



Source: Argo Pacific

# So, you just built a cable to a Pacific Island. Now what?

- Set up a CERT?
  - Work on a Root Server?
  - IPv6 adoption projects?
  - Technical training? Cybersec?
  - Set up an IXP? What's appropriate?
  - A Network Operators Group?
  - Internet Governance events and discussions?
  - Human Capacity development for certain industries to help them benefit from the cable?
- **These things don't happen unless someone makes them happen.**



Source: APNIC Foundation

# Digital Development Opportunities

- Most countries recognize **digital transformation as a key development strategy**
- Governments are adopting guidance or **governance frameworks** on the **ethical use of technologies**
- **Education and training** has a crucial role to play in fostering digital literacy and in upskilling the workforce
- Crucial to **foster digital entrepreneurship**, innovation, and a tech startup ecosystem
- ADB's long experience and deep cross-sectoral knowledge of countries and its strong track record as **advisor, convener and knowledge partner** make ADB uniquely placed to support DMCs
- Among potential digital investments, one of the top priorities is to have accessible, affordable and meaningful **broadband connectivity, to bridge the digital divide**
- To enable the flow of data, goods, and services, and generate investments, a comprehensive **regulatory framework**, and **effective policies** and implementation arrangements is key.





# Investing in digital infra in underserved areas

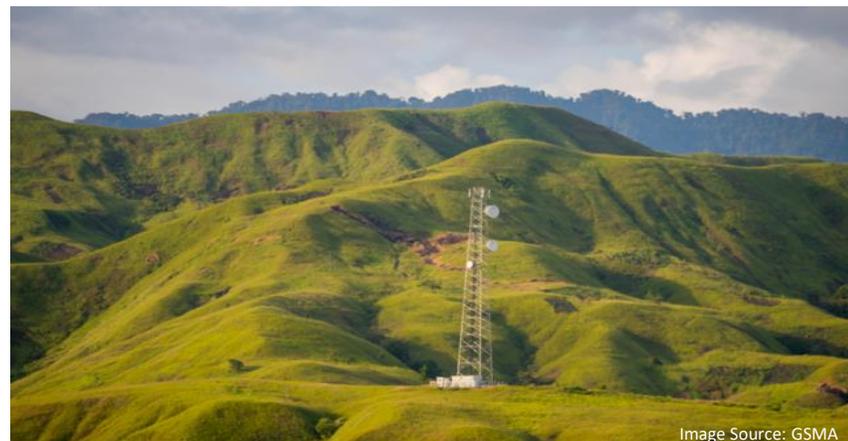
## CONNECTING THE PACIFIC ISLANDS



### Pacific Region: Submarine Cable Systems in the Pacific

- Tonga ([2011](#)) – Grant \$9.7M
- Samoa ([2015](#)) – Grant \$25M
- Palau ([2015](#)) – Loan \$25M
- Cook Islands ([2017](#)) – Loan \$15M
- Kiribati ([2018](#)) – Grant \$21.6M

## EXPANDING MOBILE COVERAGE



**Papua New Guinea: Pacific Telecommunications Modernization Project** ([2021](#), Nonsovereign) - \$25M equity investment to ATH for 4G expansion

**Philippines: Rural Connectivity in Southern Philippines** ([2022](#), Nonsovereign) – \$40M loan to Tiger Infrastructure for mobile tower expansion

# Supporting innovative approaches

## Satellite for Remote Connectivity



### Asia-Pacific Remote Broadband Internet Satellite Project

- \$50M [non-sovereign loan](#) to Kacific
- Financing for construction, launch, and operation of a shared, GEO, high-throughput satellite (Kacific-1)
- Provision of low-cost, high-speed, easily accessible broadband internet in Asia and the Pacific

## Fiber Co-deployment and Sharing

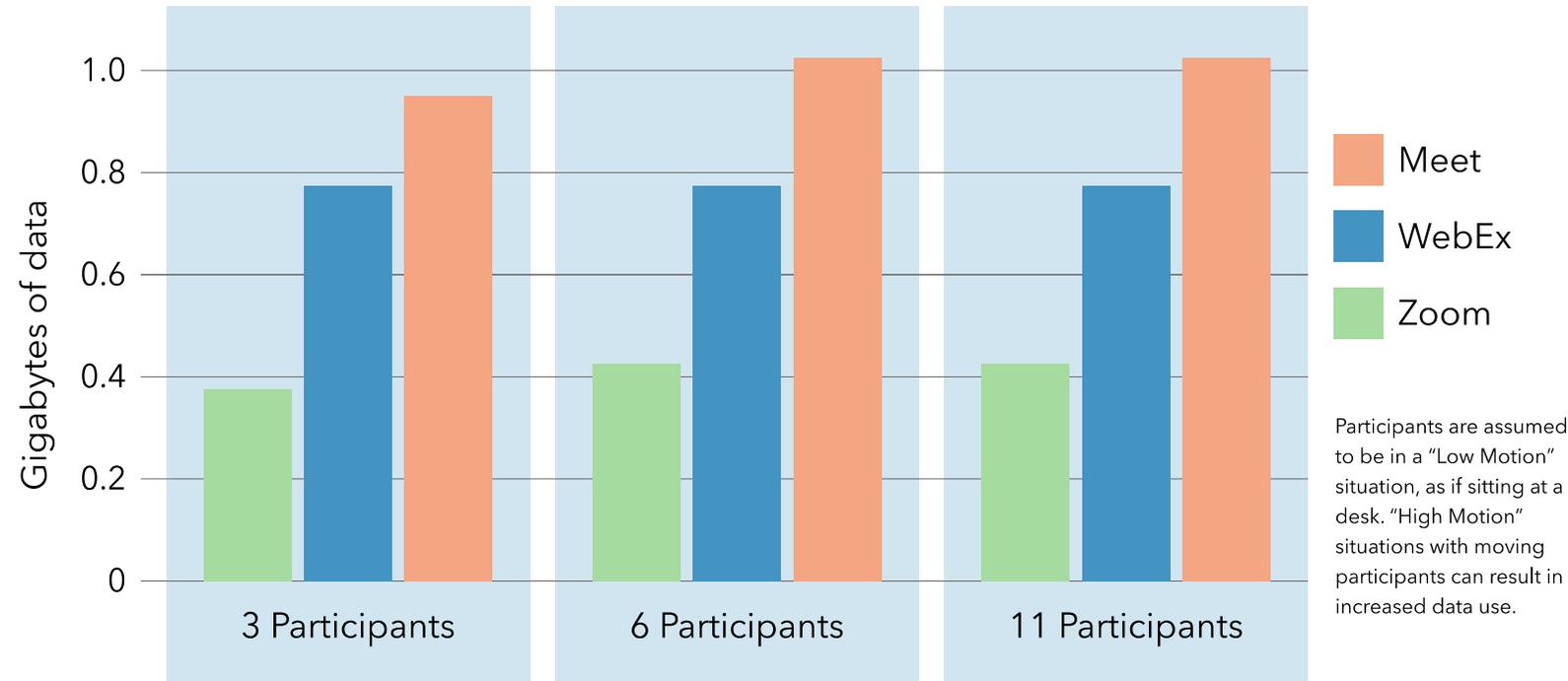


### India: Bengaluru Smart Energy Efficient Power Distribution

- \$100M [sovereign](#) and \$90M non-sovereign loans
- BESCO, state-owned distribution utility, to convert overhead distribution to underground cables and install 2,800km of fiber optic cables
- Excess fiber capacity to be leased as a source of revenue

# Need to re-think: Affordability

Current affordability target by the Broadband Commission stands at **5GB/month of data =< 2% of GNI per capita....**  
**BUT** online collaboration tools can use up to **1GB per hour**



Source: Adapted from Chang, Hyunseok, Matteo Varvello, Fang Hao, and Sarit Mukherjee. 2021. "Can You See Me Now? A Measurement Study of Zoom, Webex, and Meet." In Proceedings of the 21st ACM Internet Measurement Conference, 216-28. New York, NY, USA: Association for Computing Machinery, 2021. <https://doi.org/10.1145/3487552.3487847>.

# Need to rethink: Quality

## Sample Broadband Speed Guide\*

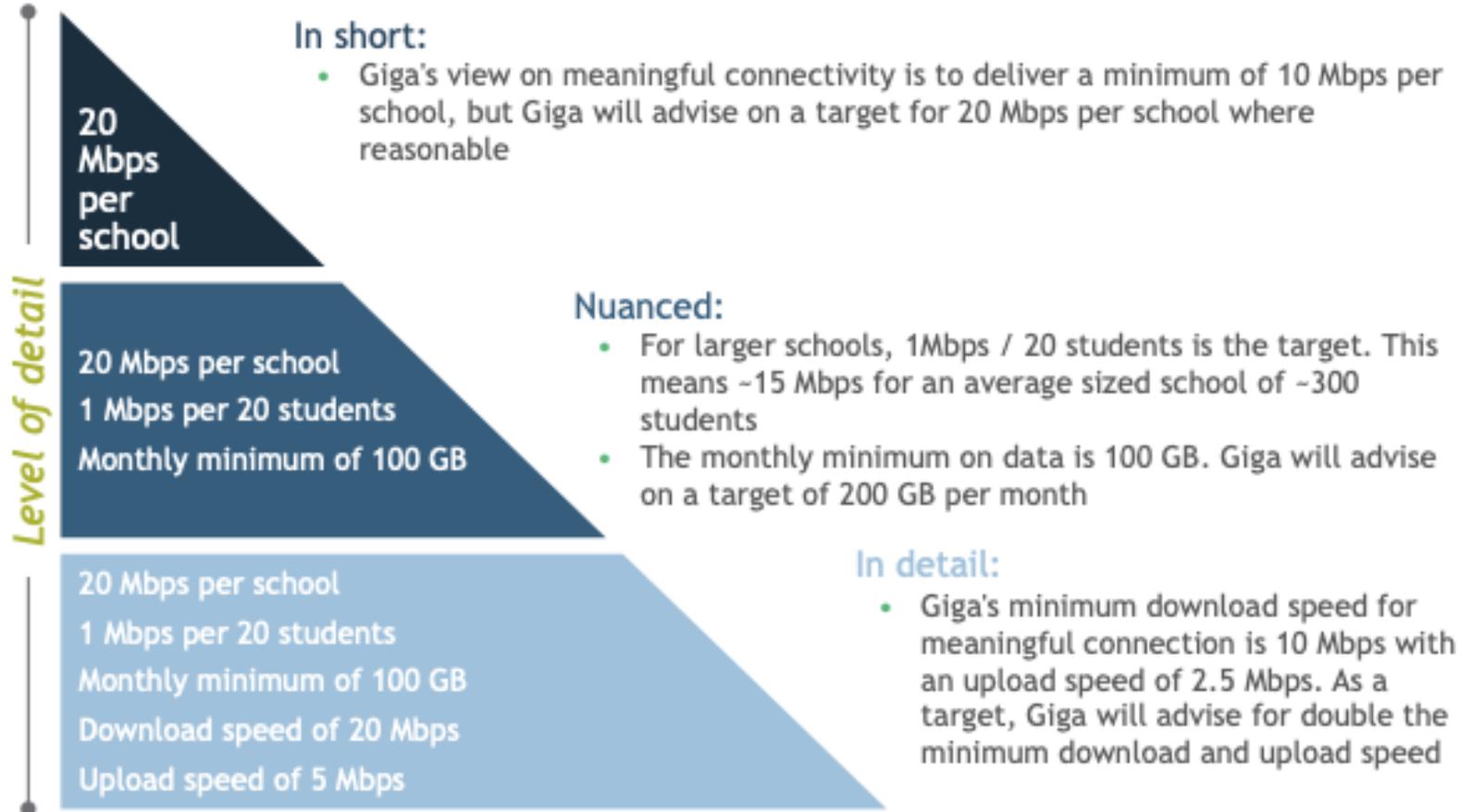
\*Minimum download speed for adequate performance for an individual application based on running ONE ACTIVITY at a time.

Activity	Minimum Download Speed (Mbps)
<b>General Usage</b>	
General Browsing and Email	1
Streaming Online Radio	Less than 0.5
VoIP Calls	Less than 0.5
Student	5 - 25
Telecommuting	5 - 25
File Downloading	10
Social Media	1
<b>Watching Video</b>	
Streaming Standard Definition Video	3 - 4
Streaming High Definition (HD) Video	5 - 8
Streaming Ultra HD 4K Video	25
<b>Video Conferencing</b>	
Standard Personal Video Call (e.g., Skype)	1
HD Personal Video Call (e.g., Skype)	1.5
HD Video Teleconferencing	6
<b>Gaming</b>	
Game Console Connecting to the Internet	3
Online Multiplayer	4

# Quality – Meaningful Connectivity

Giga has set a minimum target for meaningful connectivity...

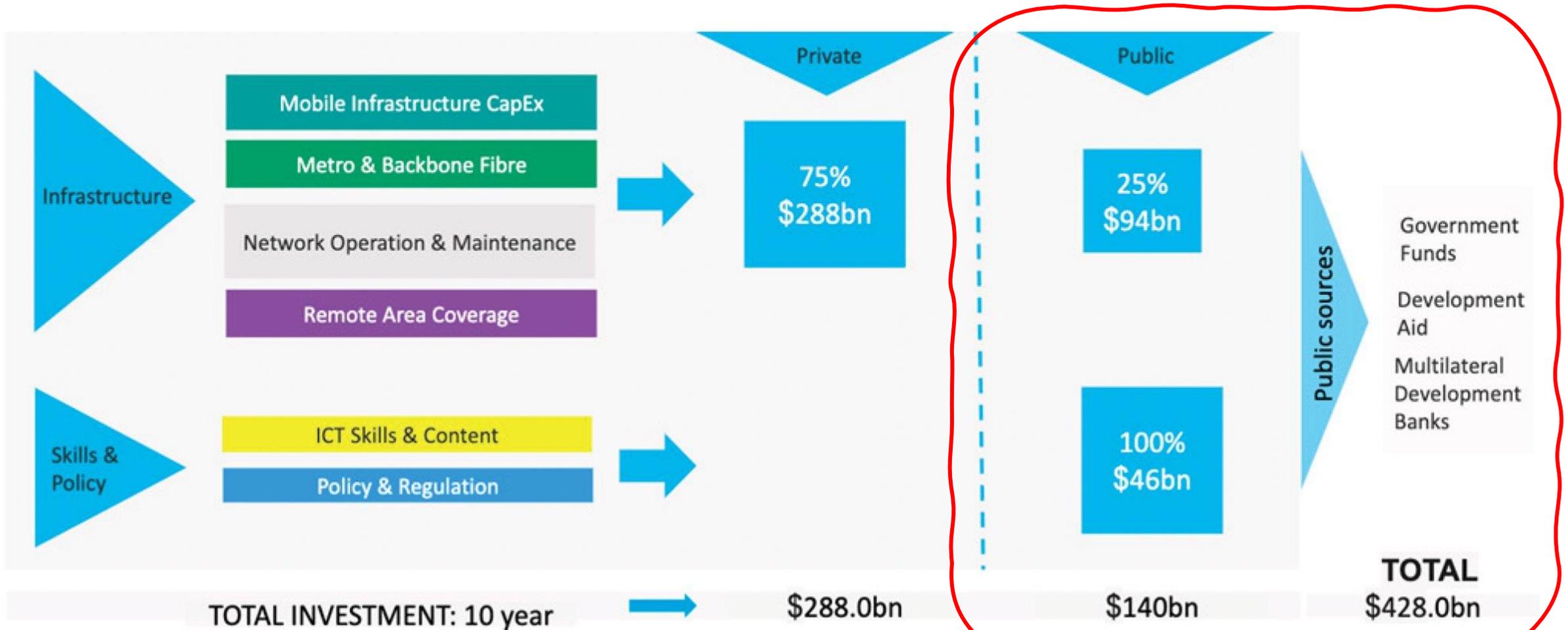
2024 target



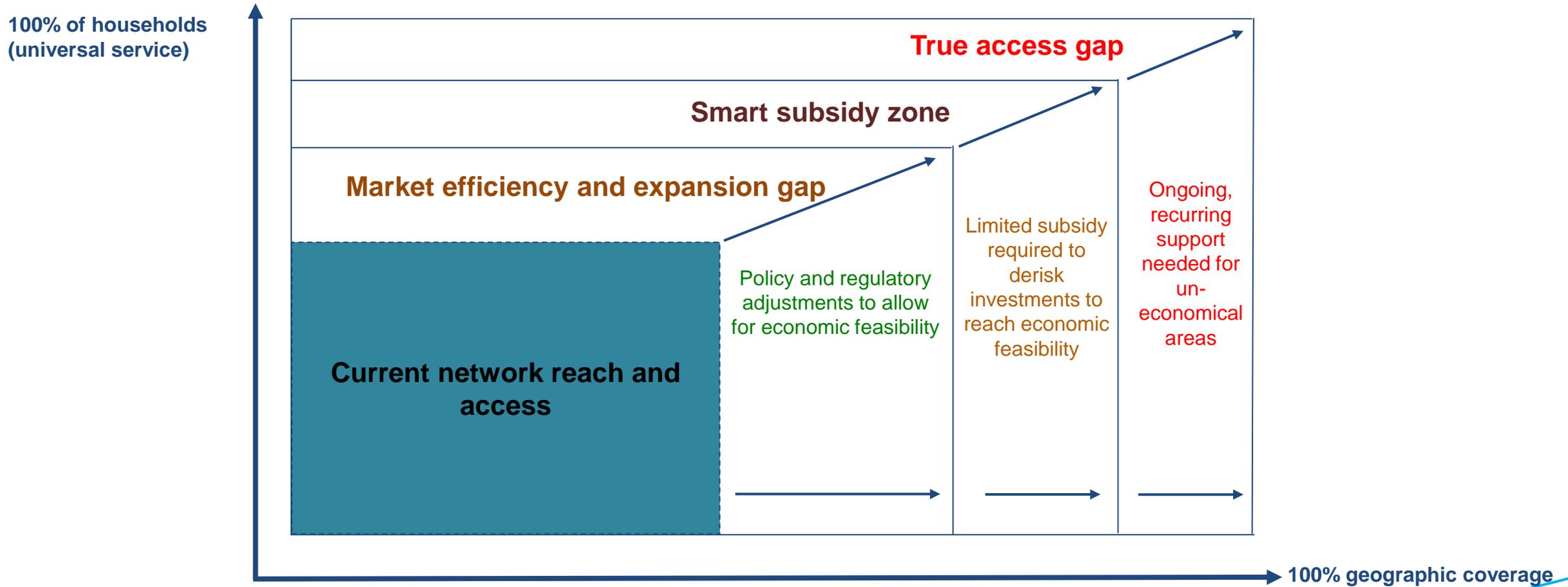
...which translates into certain technology options

Technology	Suitability
2G	✗
3G	✗
4G	✓
WISP	✓
Fiber	✓
Satellite	✓

# Need to rethink: Role of public funding



# Need to rethink: Access gaps



# Technical Assistance on “Expanding Digital Connectivity and Affordability to Close the Digital Divide”

## INNOVATION & INCLUSION



Field-test innovative and affordable digital connectivity solutions and business models

**Affordability and Commercial viability**

## DIGITAL INFRA INVESTMENT



Promote Dig Once and identify strategies and opportunities to crowd in investment

*e.g., Karachi BRT Red Line , NCC ICT Corridor*

**Smart and strategic connectivity investment**

## KNOWLEDGE & PARTNERSHIP



Provide policy advisory and knowledge solutions to propagate best practices and deliver through partnership

*e.g., ITU, GSMA, A4AI, ESCAP, BEACON, Google*

**Capacity building and Policy reforms**

## FINDINGS

# LEO Providers in the PICs

	BUSINESS MODEL	COMPETITIVE ADV. / DIFFERENTIATOR	PICs ACTIVITY
	B2C - direct-to-consumer fixed terminal	Ability to launch satellites at lower cost	- Ground station (Fiji) - Tonga disaster response - Pacific islanders accessing terminals (regulatory grey area)
	B2B - MNO/ISP partnership	B2B offers smooth regulation	- 5 ground stations (including Fiji & Nauru)
	B2B - MNO/ISP partnership sat-to-phone	No terminal required-reduces affordability barrier	- Launched in Palau - Testing in Fiji - Plans for Tuvalu
	B2C	Amazon designed terminals	- None

### TRANSFORMATIONAL OPPORTUNITIES:

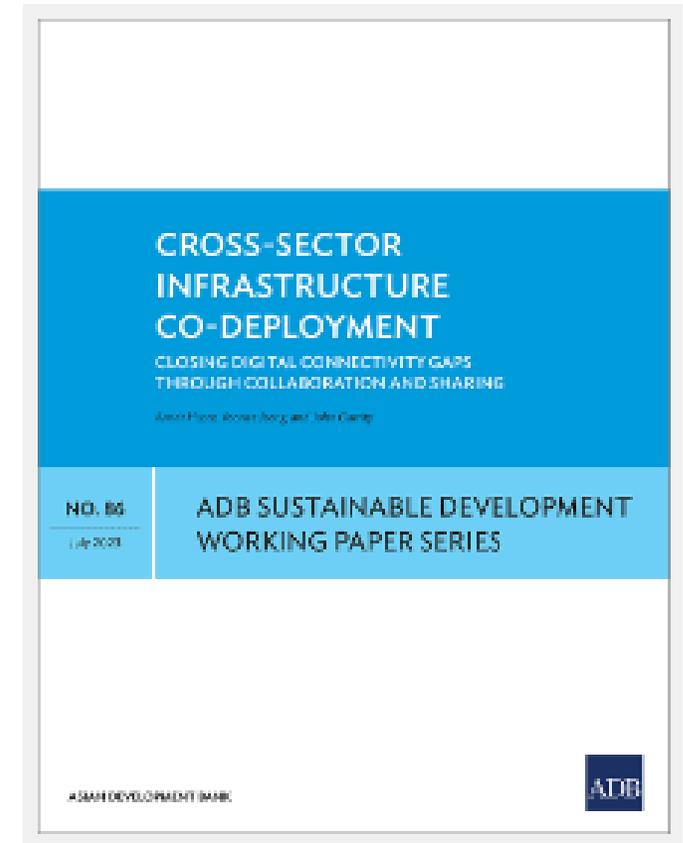
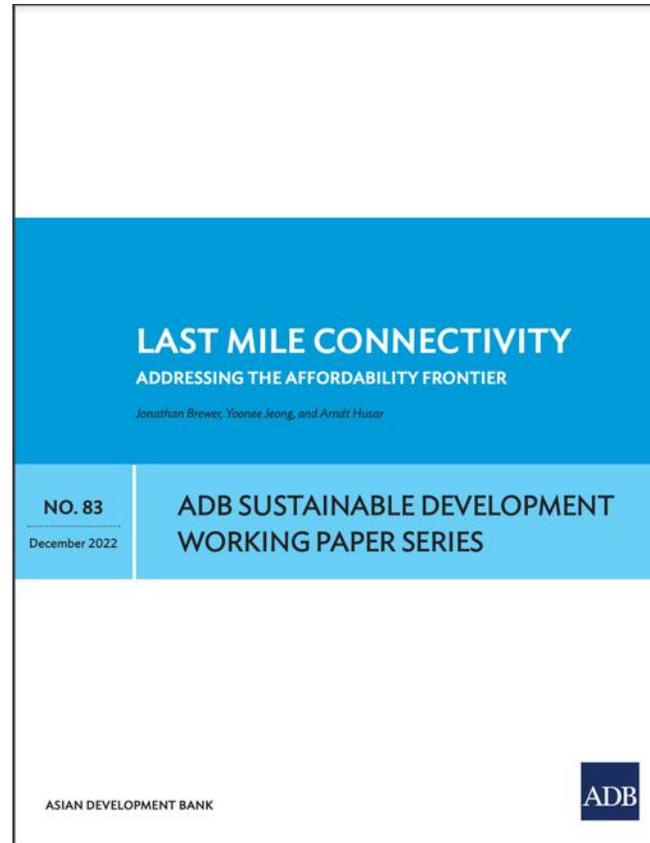
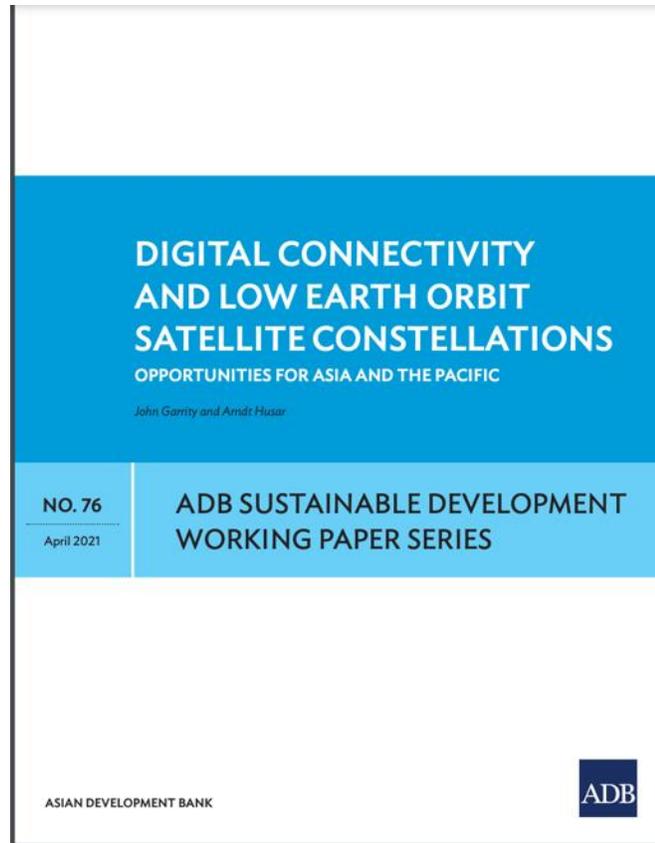
- + Ability to connect remote areas & close digital divides
- + Low latency & high-speed internet connections
- + Enhanced redundancy & resilience offering capacity for disaster response
- + Ability to push down bandwidth prices

### PACIFIC REGION CHALLENGES:

- B2C models could increase digital divides, forcing local carriers to raise rates
- Terminal affordability
- May undermine government investment
- Data sovereignty issues
- Regulatory complexities
  - Ground station requires business license
  - B2C models require regulatory approvals

Source:

# If you are interested in learning more about the topic...



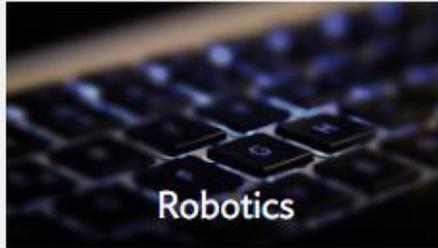
# Embracing Digital Transformation: ADB Initiatives

# The Digital Learning Labs Programs



## Artificial Intelligence

Greater incorporation of artificial intelligence into ADB's technology systems to enable ADB workforce to better focus on more value-added work.



## Robotics

Development of robotics software that can be easily programmed to do repetitive and routine tasks.



## Blockchain

Adoption of blockchain technology to eliminate repetitive manual processes.



## Big Data

Analysis of data to unlock real-time decisions that optimize ADB's agility and responsiveness to the growing needs and demands of its developing member countries.



## Mixed Reality

Using multidisciplinary approach to understand current opinion and identify the dynamics that are creating the future.

The “Digital Learning Labs” (formerly referred to as the “Digital Innovation Sandbox Program”) allows innovative companies (often start-ups and other small companies with limited track record) access to ADB's platforms to test new products and services with a small number of actual users in a simulated environment. Through the piloting of a product or business model in the lab, start-ups can build and test business ideas without having to spend significant time and resources developing completed products and services which may not work in practice or to scale.

Giving start-ups access to its platforms allows ADB to better understand if a product or service is likely to work in practice. Through the Digital Learning Labs Program, only once the feasibility of a proposed product is developed and proven successful to meet the institution's objectives, can it then be scaled-up and mainstreamed. The Digital Learning Labs Program can be viewed more in the nature of partnerships and not purely commercial relationships.

ADB has created the Digital Learning Labs Program through which it seeks innovative solutions from technology companies, start-ups, and academic institutions to address one or more programs, each program corresponding to a particular emerging technology.

[Digital Innovation Sandbox Engagement | Asian Development Bank \(adb.org\)](#)

[Digital Revolution in ADB through Digital Innovation Sandbox Program — ADB Digital](#) (23 Dec 2020)

# ADB & European Space Agency Global Development Assistance:

Regional : Empowering Developing Member Countries to Use Multispectral Satellite Images and Artificial Intelligence for Land Use and Coastal Planning



## Urban Sustainability

- Design of better transport urban infrastructure
- Design of greener cities mitigation of urban heat islands



## Marine Environment

- Sustainable fisheries
- Marine water quality



## FCAS Fragility and Conflict Affected Situations

- Livelihood improvement developing key revenue lines (cash crops)
- Analysis of water and crop availability in fragility settings



## Agriculture

- Cloud-based satellite processing from land cover maps to biomass status indicators
- Support sustainable agricultural policy

## Regional Digital Twin

- Urban expansion
- 3D of major cities
- Disaster prone areas

## Climate Resilience

- Coastal erosion assessment
- Supporting engineering of coastal defense infrastructure

## Disaster Resilience

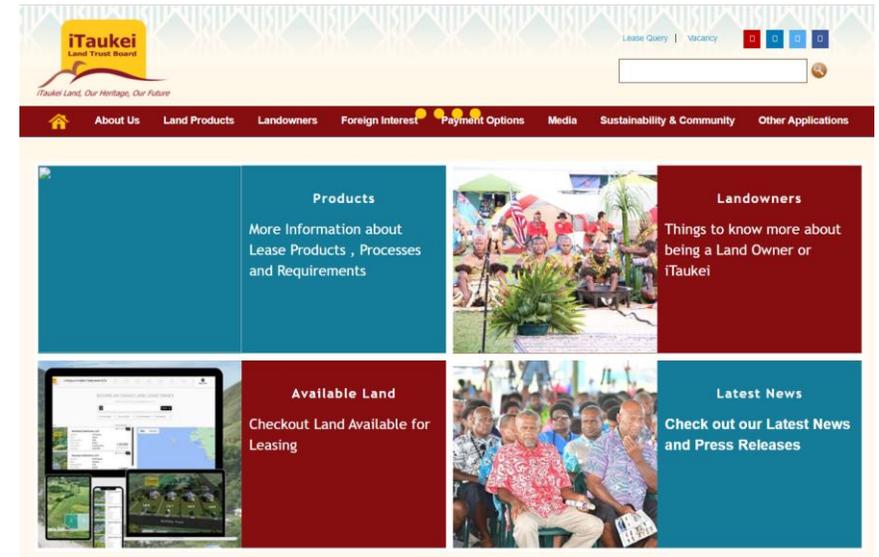
- Early Warning System – EO plus IoT devices
- Flood mapping historical analysis and NRT activation
- Land subsidence and building stability
- Water security watershed analysis

## National Spatial Infrastructures

- Satellite/Aerial derived information layers

# Land Registries

- Fiji - iTaukei Land Trust Board (TLTB)
  - ✓ Est. 1940 to administer and control native or itaukei land for the benefit of the iTaukei (indigenous) landowners.
  - ✓ As a statutory body administering 91% of Fiji's total landmass, we are committed to provide and maintain highest standard of land management services to our stakeholders.
  - ✓ In providing our services we aim to:
    - Support potential internal and external investors on development of iTaukei land;
    - Issue and administer iTaukei land lease and license contracts;
    - Enhance new innovations and business opportunities on iTaukei land;
    - Support local, regional and international treaties and conventions through partnership engagement;
    - Provide spatial planning and mapping through ArcGIS;
    - Empower landowners through financial literacy, investment and business advisory as well as on Gov. projects.
    - Regularly consult with landowners and to provide sound advice to all stakeholders;
    - Ensure that sufficient iTaukei land is "reserved" for the use, maintenance and support of its owners;
    - Control and manage extinct mataqali (customary land owning unit) land;
    - Collect and distribute premiums, rent and royalties derived from leased land.



# Distributer Ledger Technology (DLT) based End to End Land Leasing Platform for Government of Fiji

Using Distributed Ledger Technology (DLT) to build a tamper proof land leasing digital platform for iTaukei lands in Fiji

**Department:** South Pacific Subregional Office, Pacific Regional Department

**Funding Source:** ITD Sandbox

**Description:** Build on the ADB TA that supported the Government of Fiji in developing a DLT system for tamper proof land leasing platform piloted and publicly launched by the iTaukei Land Trust Board (TLTB) in October 2022

## Status:

- Extended TLTB's blockchain-based digital platform interoperability by connecting the platform with LDVC (Land Development Vetting Committee), the portal shared with the Department of Town and Country Planning and the Ministry of Lands, that is an integral part of TLTB's leasing approval process.
- Conducted on-site immersion to assess the landowners' needs and defined a landowners-centric proposition with the objective to build a new digital touchpoint linked to TLTB's blockchain-based platform that allows landowners to self-service, manage land-related queries and ultimately drive landowners' financial inclusion and financial literacy. To bring this concept to life, the team designed and developed a technical Proof of Concept, covering 2 core modules of the landowner portal, to directly validate the proposition for future scalability and integration.
- [TLTB - Online Marketplace](#); [TLTB – Home](#)
- [Official Launch of the TLTB Digital Platform and Online Marketplace](#) (14 October 2022)
  - [Digital Solutions for a More Livable Future in Asia and the Pacific | Asian Development Bank \(adb.org\)](#) (May 2019)

# Financial Inclusion



(1) Beginning of the Digital Bank ID enrollment process.



(2) Agents login by tapping their Digital Bank ID on the reader and entering their PIN code.



(3) Agents can create a first card or replace a lost card.



(4) Personal data is captured and entered including photo of individual.



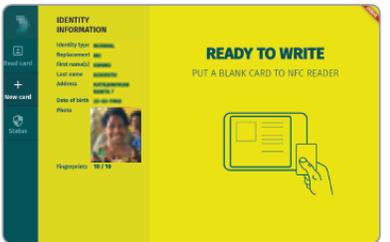
(5) The person's 10-digit fingerprint is captured.



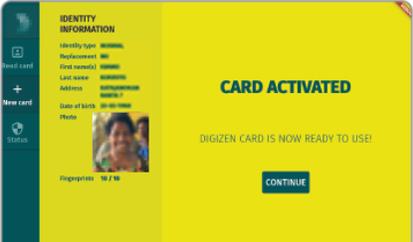
(6) The village chief checks and verifies the data on the enrollment device.



(7) The village chief digitally signs this with his own Digital Bank ID.



(8) The ID is ready to be written on the card. Agent places blank card near the near-field communication (NFC) antenna on the device, and the data is transferred to the card.



(9) The Digital Bank ID card is activated and can be used immediately even with no internet connection.



(10) Each time the Digital Bank ID card is read the photo and information above is presented.

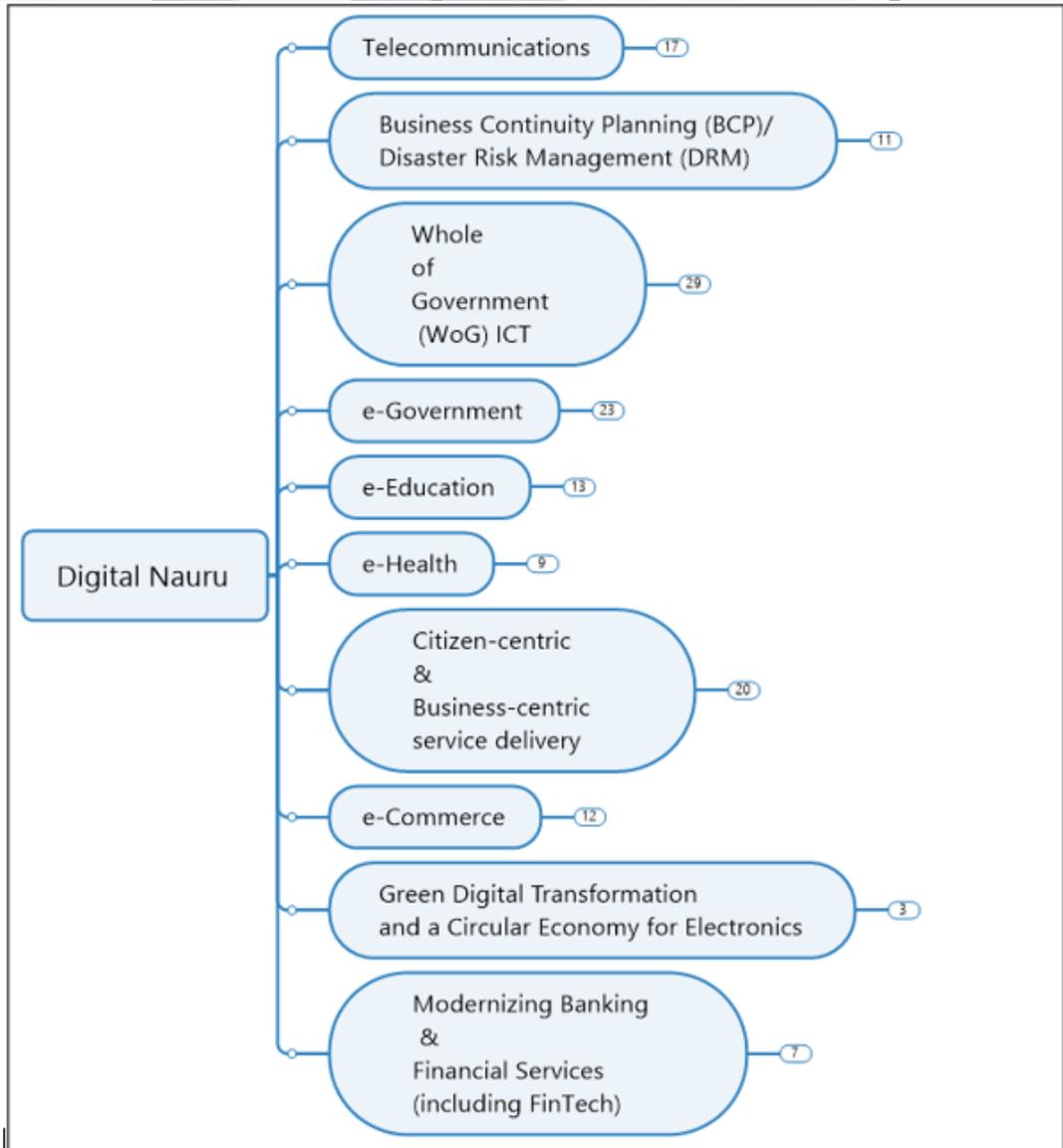
## [Digizen – Digital Bank ID Pilot Launch – YouTube](#)

[50374-001: Strengthening Financial Sector Operations in Asia and the Pacific | Asian Development Bank \(adb.org\)](#)

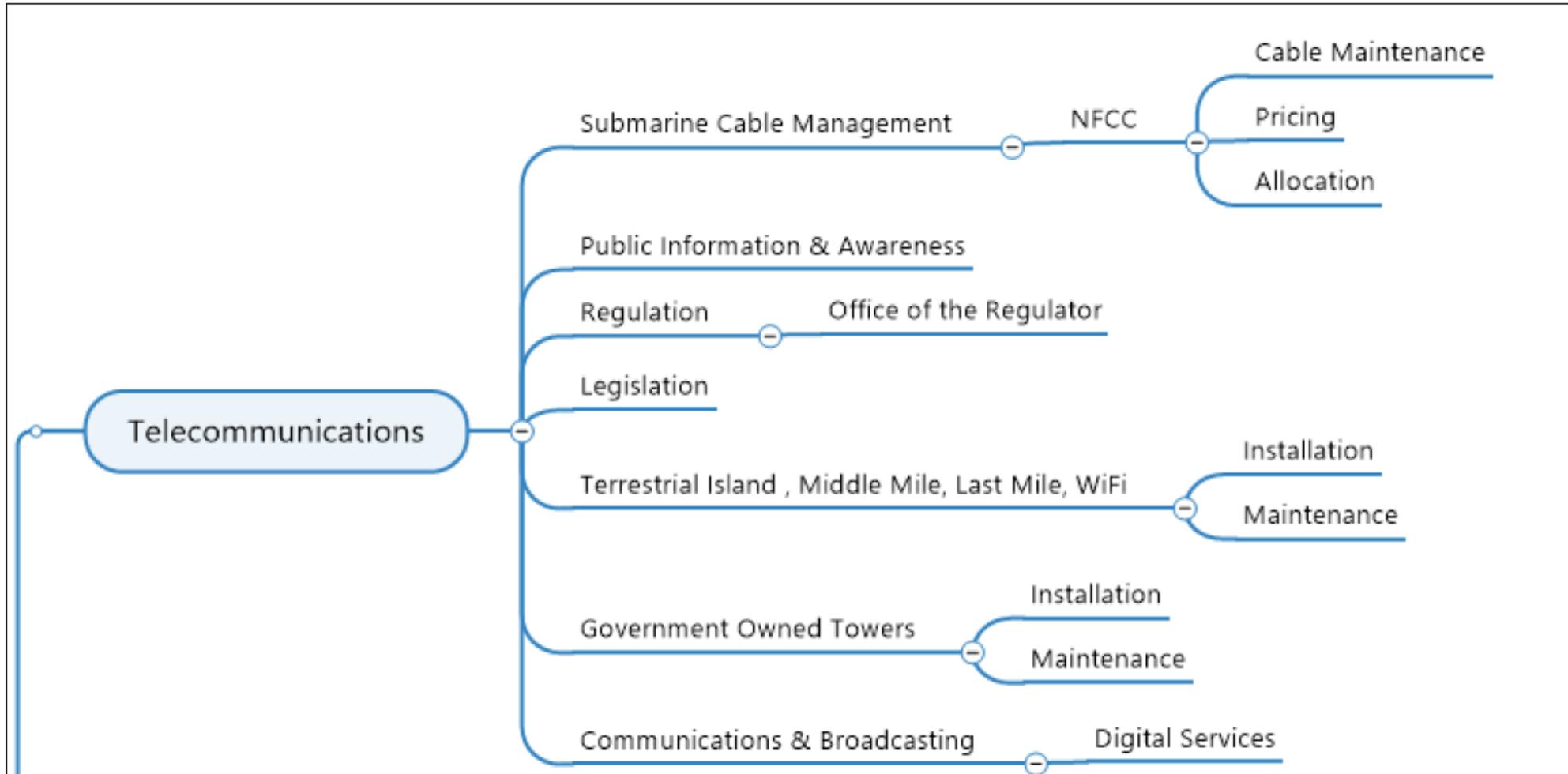
# Embracing Digital Transformation – a Case Study:

## Digital Finance Nauru (ADB Pipeline Project 2027)

# Case Study: What is required for “Digital Nauru” (High-Level)?



# Telecommunications



Oi! You left out  
Internet  
Governance ...

# Case Study: How would you legislate “Digital Nauru” (Pop. 13,000)?

## Cybersecurity

- Sets out the government approach toward addressing cyber security risks and challenges.
  - Cybersecurity Legislation
  - Cybercrime Legislation

## Information Security and Identity Management

- Digital Identity
- Digital Signatures
- Privacy Legislation
- Data Privacy Legislation
- Data Sovereignty Legislation / Data Residency

## Record Keeping and Information Management

- Access to Information
  - Deploys information disclosure to achieve good governance and sustainable development.
- Data Sharing and sharing of Information
  - De-anonymizing
- Disclosure of Customer Information
- Data formats and protocols
- Data Retention policy

## e-Commerce

- Electronic Transactions Act
- Electronic Commerce Law
- Interest/Agreements with Financial Institutions (Banks, MTOs, etc.)

## Financial Regulations

...

...

**Question:**  
**Even if you can legislate, can you enforce, especially when your attackers reside outside your jurisdiction?**

# ADB Capacity Building to Address Project SWOTs

A foundational transformational ICT capacity-building program is required in preparation for a Digital Nauru program.

- (i) Improve the capacity of the current ICT talent pool in ITSM, project management, and cybersecurity;
- (ii) Improve the capacity of the Structured Cabling Division and related technicians in Telecommunications Technology to prepare the terrestrial cable (middle and last mile connectivity);
- (iii) Improve the capacity of senior Government officials in Project Management for Executives; and
- (iv) Modernize the Education sector to provide a sustainable talent pool of graduate ICT professionals and technicians. **Currently OUT OF SCOPE**

e.g.

- [IT Service Management; Axelos. ITIL 4: the framework for the management of IT-enabled services; Project Management: Axelos; Axelos. PRINCE2 Project Management Certifications; Axelos. PRINCE2 Agile; Praxis; and Cybersecurity: ISACA. Enhance Your IT Knowledge and Career with an ISACA Certificate.](#)
- Cabling Certification is available in [training.gov.au - ICT30519 - Certificate III in Telecommunications Technology.](#)
- University of New South Wales. Australian Graduate School of Management. [Project Management for Executives.](#)

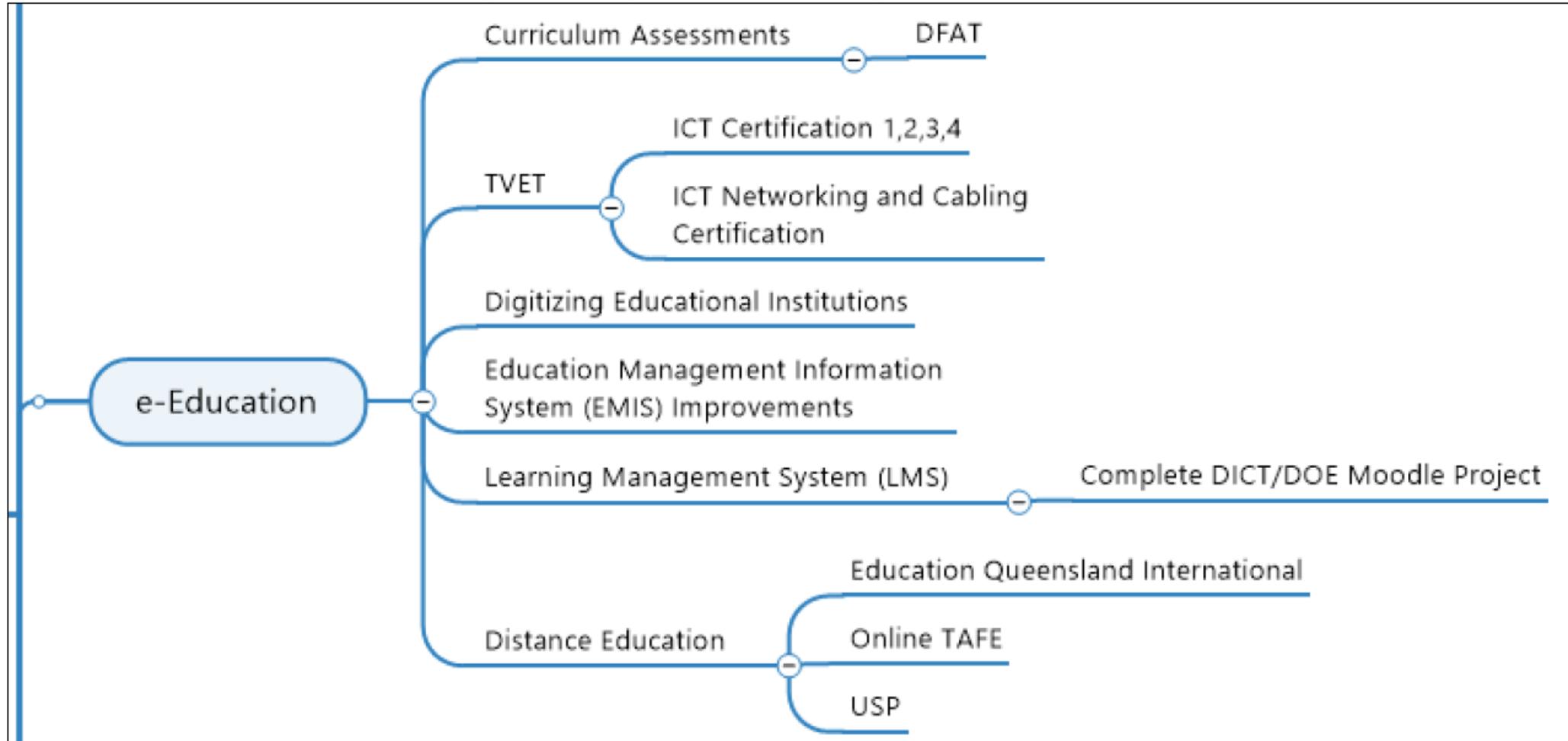
# Estimated Nauru ICT Professional Capacity Building

(Assumes ICT Department of 50 persons; 13 Government departments with 10 Senior Managers)

					\$ 464,100.00
	Participants	Qualification	Price AUD	Total AUD	Total USD
(i) Improve the capacity of the current ICT talent pool in ITSM	50	ITIL V4 Foundation Certification	\$ 2,000.00	\$ 100,000.00	\$ 70,000.00
(i) Improve the capacity of the current ICT talent pool in project management	50	Prince2 Agile Foundation and Practitioner Certification	\$ 3,200.00	\$ 160,000.00	\$ 112,000.00
(i) Improve the capacity of the current ICT talent pool in cybersecurity	50	Two certificates per person	\$ 1,500.00	\$ 75,000.00	\$ 52,500.00
(ii) Improve the capacity of the Structured Cabling Division of DICT and related technicians in Telecommunications Technology	10	Certificate III in Telecommunications Technology	\$ 4,200.00	\$ 42,000.00	\$ 29,400.00
(iii) Improve the capacity of senior Government officials in Project Management for Executives (11-13 departments)	130	Project Management for Executives Short Course	\$ 2,200.00	\$ 286,000.00	\$ 200,200.00

**A Question for ADB:** Is **USD \$500K** of capacity building to achieve better implementation AND development outcomes BEFORE 2026 a good use of funds when the ADB pipeline project costs **USD \$XM?**

# Sustainability: Capacity Building & ICT in Education



# Donors need to address the ICT in Education Gap NOW to achieve EMC Project benefits in the future

Support required for 2024,5,6 (& beyond?) until national teachers/trainers become available.

				<b>\$ 420,000 per year</b>
	Teachers	Price AUD	Total AUD	Total USD
Secondary School teachers (+accom.)	2	\$ 162,000	\$ 324,000	\$ 210,000
TVET Cert 4 teachers (+accom.)	2	\$ 162,000	\$ 324,000	\$ 210,000

**A Question for Donors:** Is USD 420K/year (**USD 2-3M for 5-7 years**) of capacity building to achieve better development outcomes by 2030 a good use of funds when the EMC project costs **USD \$85M**?

Salary Source:

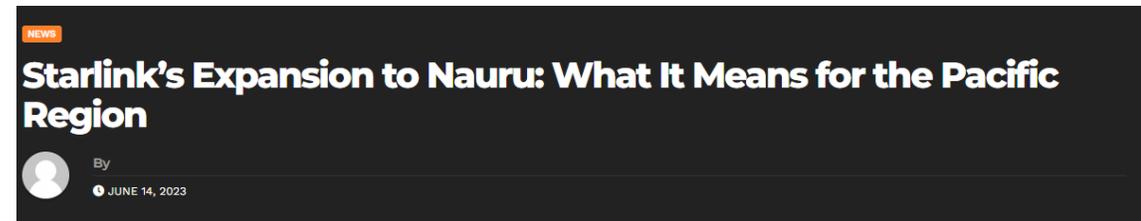
[https://www.payscale.com/research/AU/Job=Secondary\\_School\\_Teacher/Salary](https://www.payscale.com/research/AU/Job=Secondary_School_Teacher/Salary)

[https://www.payscale.com/research/AU/Job=Vocational\\_Training\\_Teacher/Hourly\\_Rate](https://www.payscale.com/research/AU/Job=Vocational_Training_Teacher/Hourly_Rate)

# Digital Nauru: ADB Potential Project Timeline

- 2024
  - ✓ Technical Assistance (KSTA) ICT Capacity Building and Senior Government Officials Project Management Capacity Building preparation (if feasible)
  - ✓ Technical Assistance (TRTA) Project Preparation & Implementation
- 2025
  - ✓ KSTA begins implementation
  - ✓ TRTA Project Implementation completed
  - ✓ Project presented to ADB Board
- 2026
  - ✓ Early 2026 [EMC](#) Cable lands ... .. But ...
  - ✓ ADB Digital Nauru Project implementation

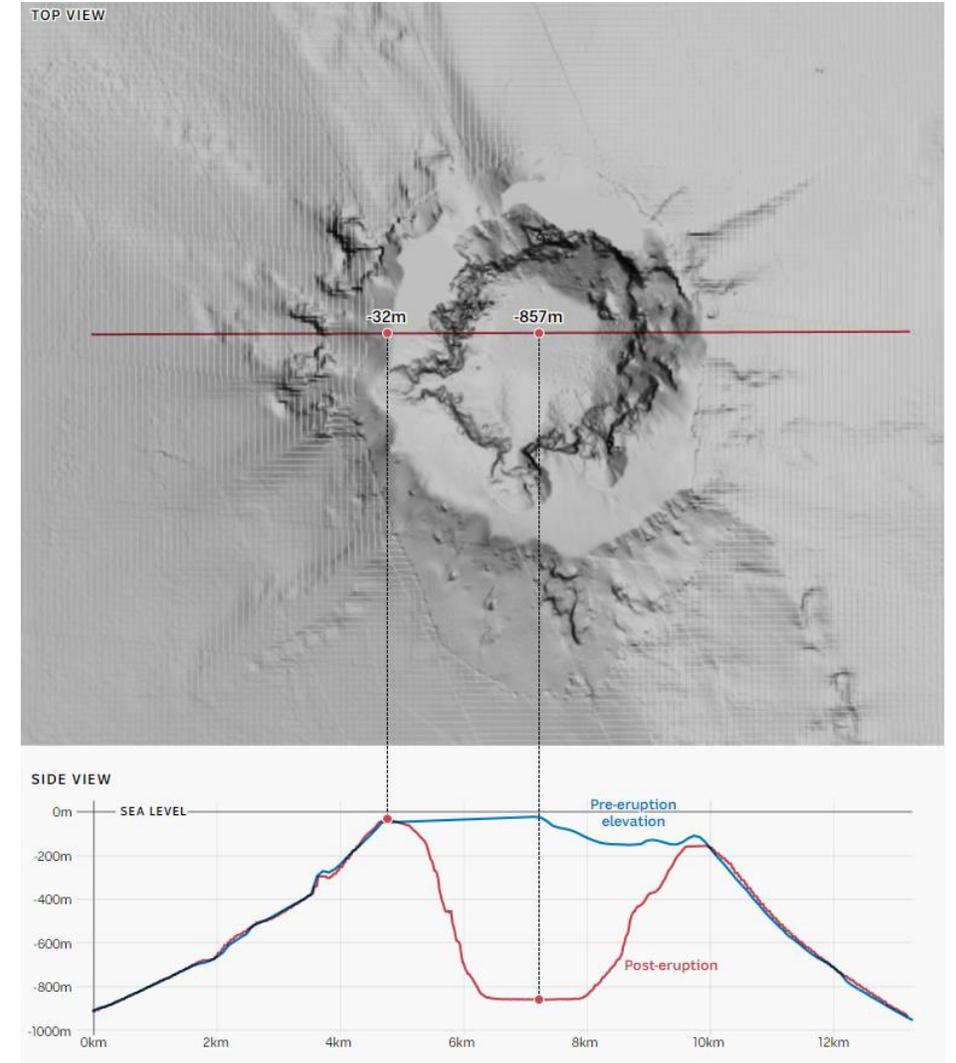
**Addressing capacity and Education gaps needs to start yesterday!**



# Connectivity & Redundancy

# Case Study

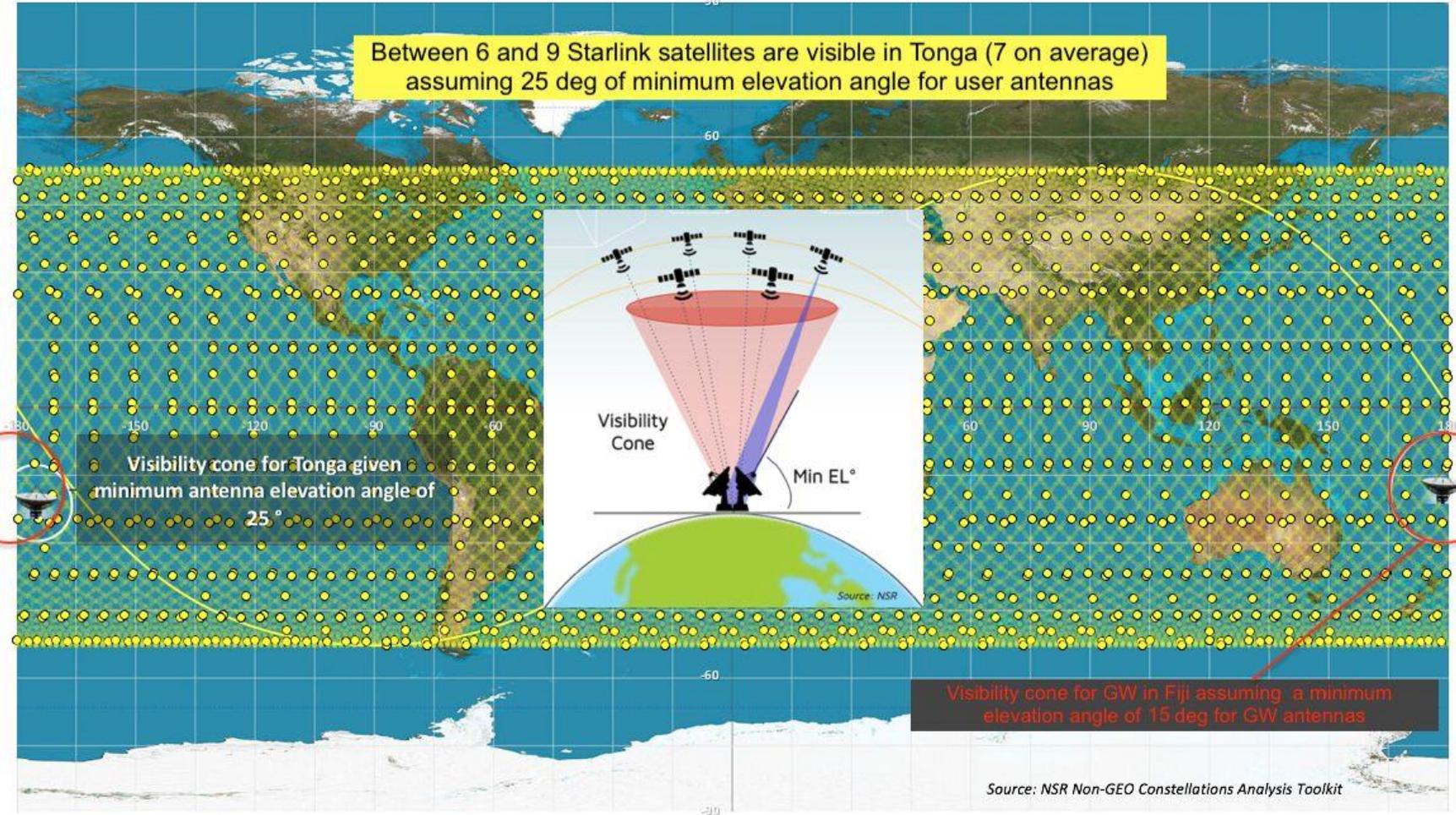
- Hunga Tonga-Hunga Ha'apai eruption (Jan 2022)



Source: [Tonga volcano sea floor map reveals 'mind-blowing' cavity left behind by eruption - ABC News](#) (21 Nov 2022)

# Hunga Tonga-Hunga Ha'apai eruption

Visibility cone of sats/routes for Tonga User Site at -21.35°/-175.15° (Lat/Lon) - SpaceX Starlink - 53° Incl. 550 Km Alt.



# Hunga Tonga-Hunga Ha'apai eruption

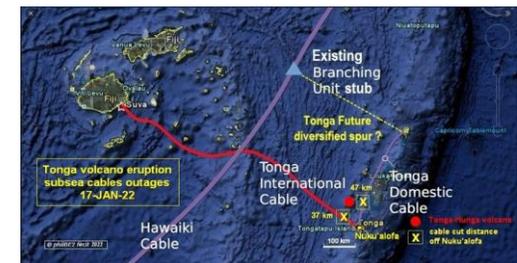
- **Contactless disaster response in Tonga**

- ✓ Repurposing existing equipment in-country
- ✓ Coordinating with Satellite Companies for bandwidth
- ✓ Satellite phones to Disaster Ministry
- ✓ [Disaster Connectivity Map](#)
  - [DCM link](#)



- **Challenges**

- x C-19 Logistics challenges
  - x (Incident impacts compound on one another)
- x Legal dispute with Telecommunications service providers
  - x (Is regulation favorable for new technologies and players?)
- x Lack of adequate local expertise
- x Interoperability of equipment



# Digital Connectivity and Low Earth Orbit Satellite Constellations: Opportunities for Asia and the Pacific

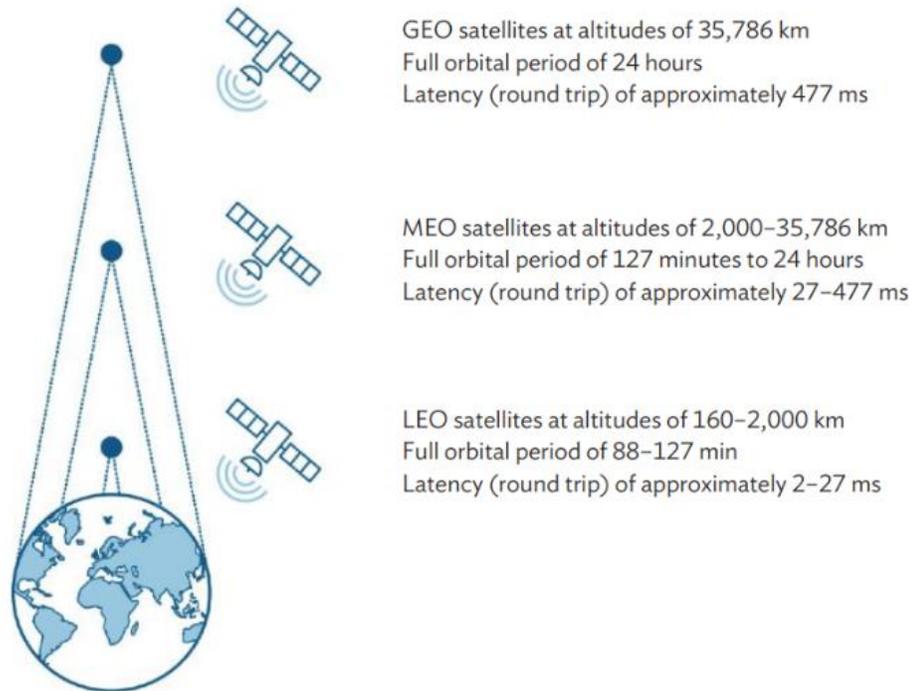


Figure: Comparison of Characteristics: Geostationary Orbit, Medium Earth Orbit, and Low Earth Orbit

Satellite communication plays an important role in the global connectivity ecosystem.

It connects rural and remote populations, provides backhaul connectivity to mobile cellular networks, and enables rapid communications for emergency and disaster responses.

Low Earth orbit constellations may prove to be transformational to the connectivity landscape based on their global coverage and their suitability for areas not served by fiber optic cable networks.

ADB's developing member countries are well placed to benefit from this expansion of internet connectivity, especially small island developing states and landlocked developing countries

# Case Study: ITU Smart Islands



## Projects and partnerships

Projects funded by DITRDCA (Australia), MIC (Japan), Joint SDG Fund, **ADB**, ITU, Huawei

In-kind partnerships

# Cybersecurity: Pacific Snapshot

# Cyber security in assessing fragility and building resilience

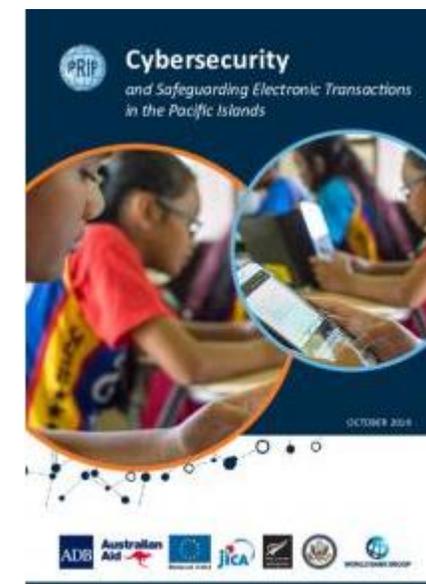
- ADB identifies fragile and/or conflict-affected situations in 12 developing member countries, and 16 small island developing states.
- Fragility and resilience assessments ([FRA](#)) capture risk-based vulnerability-fragility-resilience information and better inform ADB's engagement.
- Cyber security – from infrastructure to systems operations – is critical across the fragility spectrum, and **fundamental to building resilience**.
- FRAs consider the robustness of ICT under each of the six dimensions, and how potential cyber risks interact across dimensions.



# National Cybersecurity – Legal & Regulatory Frameworks

Stage of development	None			Initial			Established			Sophisticated				
Country	CI	FJ	FSM	KI	RMI	NR	NU	PW	PNG	WS	SB	TO	TV	VU
<b>Legal and regulatory frameworks</b>														
Electronic transactions	I	E	N	N	N	N	N	N	N	E	N	N	N	E
Privacy, freedom of speech and other human rights online	I	I	I	I	E	I	N	I	I	I	I	N	I	I
Data protection	N	I	N	N	I	N	N	I	I	I	N	I	N	I
Digital authentication	I	N	N	N	I	N	N	N	I	I	N	I	N	N
ccTLD administration	E	E	E	E	I	E	E	E	I	E	I	I	E	I
Consumer protection	S	E	N	E	E	I	I	E	E	E	I	E	N	I
Intellectual property legislation	E	E	E	I	I	I	E	E	E	E	N	E	I	E
Access to information	E	E	N	I	I	I	N	E	N	I	N	I	I	E

*Note: "Initial" means that the country is in the process of developing or implementing the concept measured and "Established" refers to a state where the relevant framework or concept is implemented and operates. Each of these ratings refers to the particular concept measured, and not the country's overall capacity to respond to cyber-risk.*



Source: [Cybersecurity and Safeguarding Electronic Transactions in the Pacific Islands | Pacific Regional Infrastructure Facility \(PRIF\) \(theprif.org\)](#)

# National Cybersecurity - Resilience

Stage of development	None			Initial			Established			Sophisticated				
Country	CI	FJ	FSM	KI	RMI	NR	NU	PW	PNG	WS	SB	TO	TV	VU
<b>Resilience</b>														
Cybercrime (substantive)	I	E	N	E	I	S	N	I	S	E	I	E	I	I
Cybercrime (child protection)	I	N	N	E	I	S	I	E	E	E	N	E	N	E
Cybercrime (procedural)	I	I	I	E	I	S	I	I	S	I	I	E	I	I
Law enforcement	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Prosecution	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Courts	I	I	I	I	I	I	I	I	I	I	I	I	I	I

Source: [Cybersecurity and Safeguarding Electronic Transactions in the Pacific Islands | Pacific Regional Infrastructure Facility \(PRIF\) \(theprif.org\)](#)

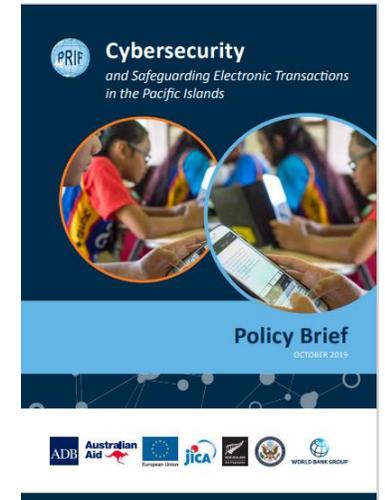
# National Cybersecurity – Strategy & Governance, Security, Vigilance

Stage of development	None					Initial			Established			Sophisticated			
Country	CI	FJ	FSM	KI	RMI	NR	NU	PW	PNG	WS	SB	TO	TV	VU	
<b>Strategy and governance</b>															
National cybersecurity strategy	I	E	I	I	N	I	N	N	E	E	N	I	I	E	
Governance	I	E	I	E	I	E	I	N	E	E	N	E	E	E	
<b>Security</b>															
Institutions	I	I	I	I	I	I	I	N	E	E	N	E	I	E	
Critical infrastructure	I	N	N	N	N	N	N	N	N	I	N	E	N	I	
<b>Vigilance</b>															
Incident reporting	I	I	I	N	N	I	I	I	I	N	I	I	I	I	
Domestic cooperation	I	E	N	I	N	E	N	N	I	E	N	I	N	I	
International cooperation	E	I	I	I	I	E	I	I	I	I	I	E	I	E	

Source: [Cybersecurity and Safeguarding Electronic Transactions in the Pacific Islands](#) | Pacific Regional Infrastructure Facility (PRIF) ([theprif.org](http://theprif.org))

# PRIF Cyber Report & Policy Brief: Key Risks

<b>Economic</b>	Facilitation of international money laundering and funding of terrorism	Financial harm due to fraud or unauthorised access to banking	Inability to process or receive international payments	Inability to meet international standards for e-transactions (i.e. PCI)	
<b>Safety and Wellbeing</b>	Facilitation of the creation, transmission or sale of objectionable or pirated material (i.e. child exploitation)	Harm to individuals due to identity theft, cyber bullying or blackmail			
<b>Disruption</b>	Business disruption and/or impact to wellbeing due to critical infrastructure outage	Inability to facilitate secure and reliable communications channel for international relations/business	Destruction or ransom of information	Malicious altering or defacement of Government information	Interruption to logistics/travel
<b>Trust and Reputation</b>	Facilitation of global cyber attacks originating from the Pacific	Theft of intellectual property, personal information or sensitive data	Driving a malicious political agenda through hacktivism or social media.		



Source: [Cybersecurity and Safeguarding Electronic Transactions in the Pacific Islands | Pacific Regional Infrastructure Facility \(PRIF\) \(theprif.org\)](https://www.theprif.org/)

# PRIF Cyber Report: Challenges

- Difficulties in achieving sustainability and ongoing support -> reduces effectiveness.
- A lack of visibility and coordination of cyber-relevant programmes -> investment less efficient and effective
- Previous attempts to reduce Cyber risk rely heavily on taking a pan-region approach. -> difficult to attract ongoing support and investment in regional investments.
- Conversely, stakeholders request support for domestic initiatives and regional information sharing/co-ordination rather than larger scale regional initiatives; strong independent identity and cultural context -> more effective when executed within these local contexts.

# PRIF Cyber Report Recommendations (2019)

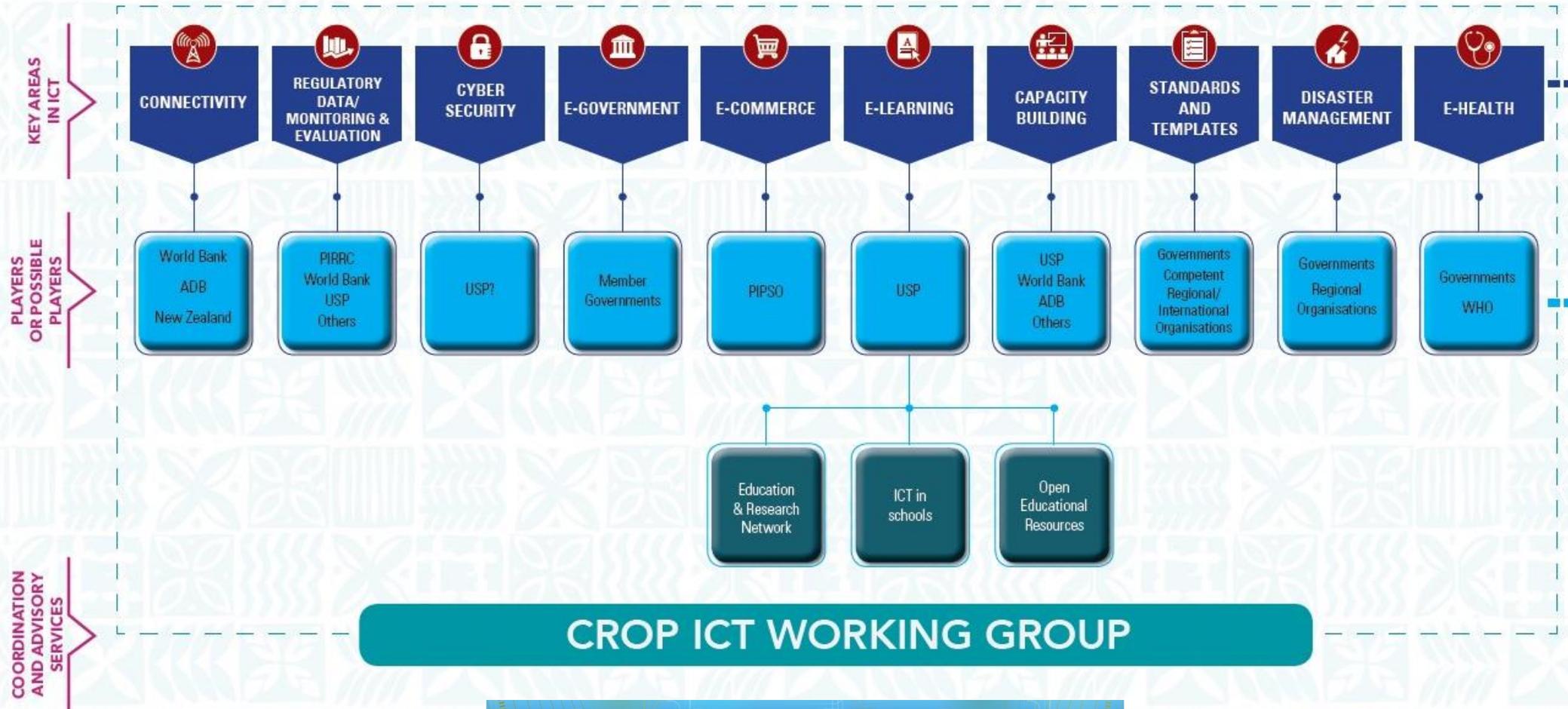
- Regional
  - ✓ implementing cybersecurity and digital strategy in the region; preparing a legal framework;
  - ✓ building capacity at a regulatory, enforcement and technical
  - ✓ Improving cybersecurity safeguards for critical infrastructure; and
  - ✓ Increasing public awareness
- Country commonalities
  - ✓ develop cyber security strategies;
  - ✓ electronic transaction and digital authentication maturity is low or non-existent;
  - ✓ legislative support for the digital economy

# PRIF Cyber Proposed Action Plan (2019)

Activity	Priority	Investment Level
Cyber Governance and Strategy Model	High	Medium
Pacific Regional Cyber Hub	High	High
Cyber Crime Legislation and Enforcement Capability Building	High	Medium
Uplift National CERT Capabilities	Medium	Medium
Security Requirements for Critical Infrastructure	Medium	Low
Pacific Cyber Innovation Fund (Centralised Procurement)	Low	High

Source: [Cybersecurity and Safeguarding Electronic Transactions in the Pacific Islands](#)  
[| Pacific Regional Infrastructure Facility \(PRIF\) \(theprif.org\)](#)

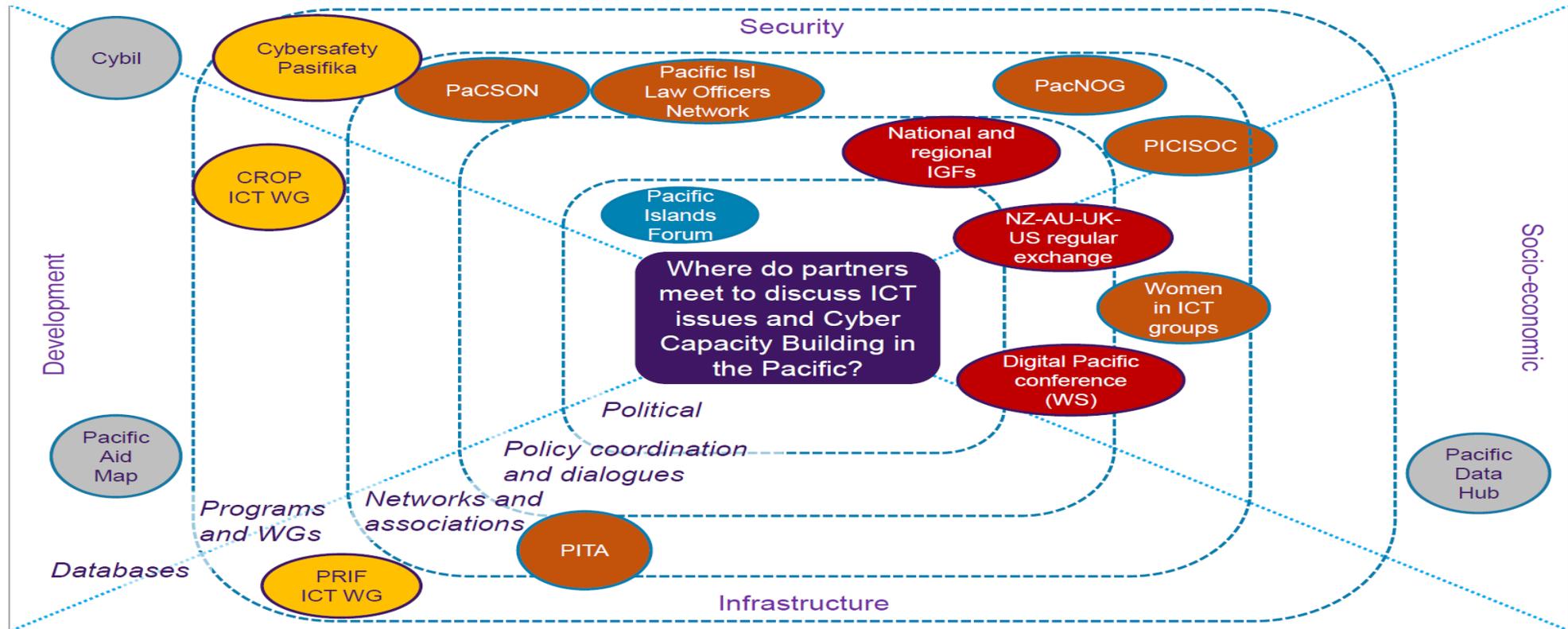
# REGIONAL ICT INITIATIVE - KEY PILLARS



**CROP ICT**  
 (Council of Regional Organisations of the Pacific - Information and Communications Technology)  
**WORKING GROUP**

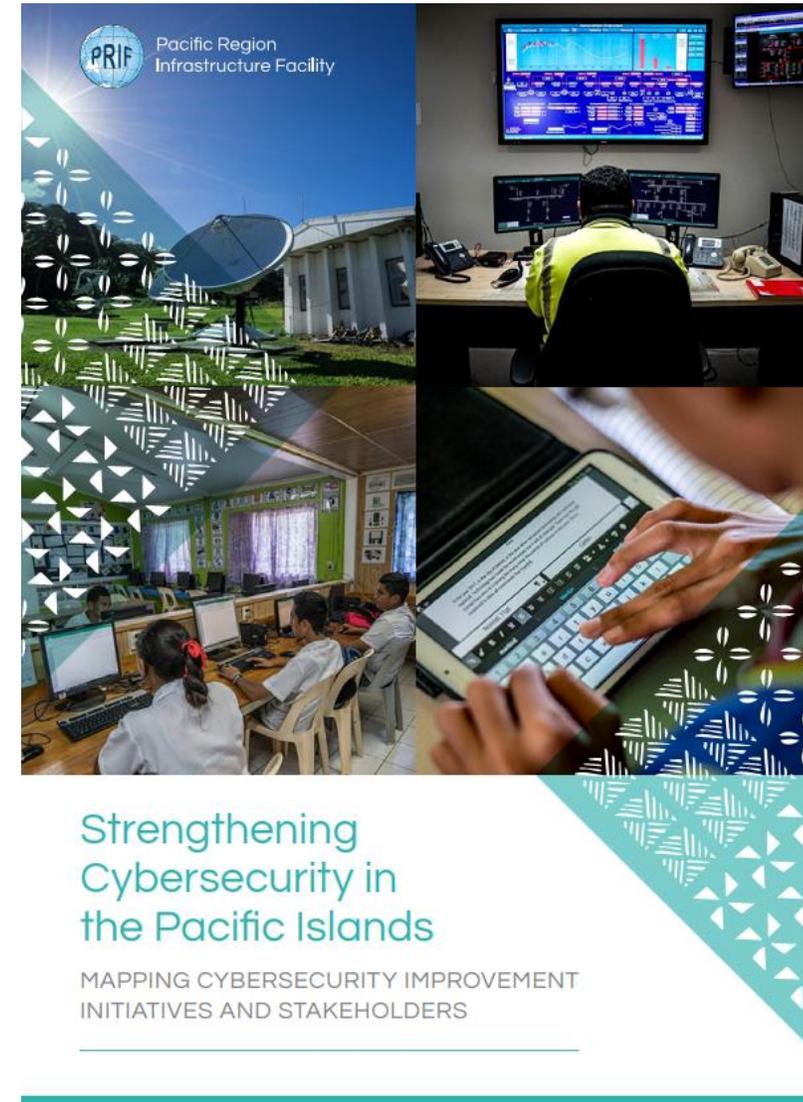
Source: <https://cropict.usp.ac.fj/>

# Many stakeholders, many forums, individual focus: Big Picture?

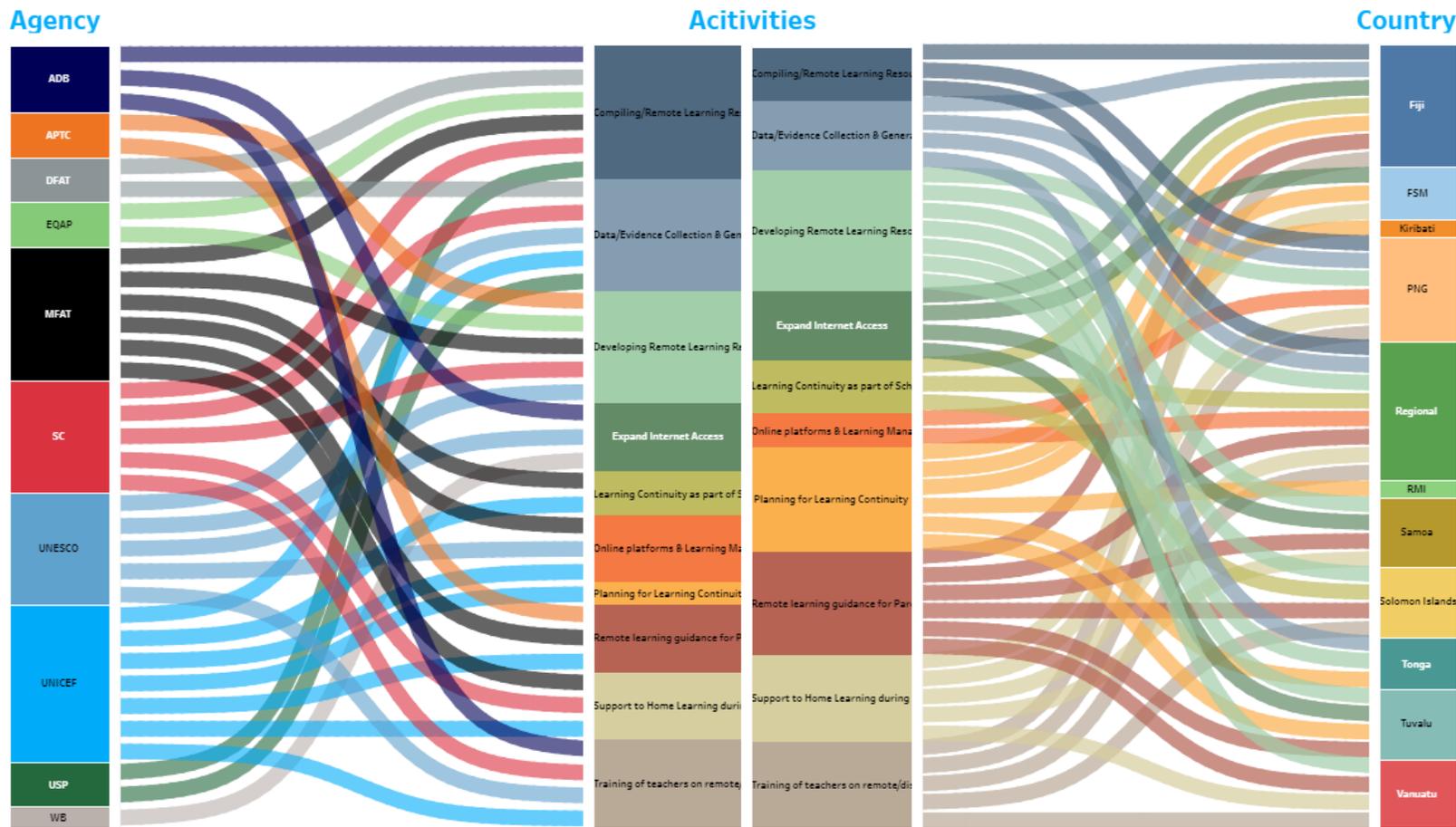


# 2023 PRIF Cybersecurity Report

- ✓ Updated with feedback from country contacts – better matching of reported initiatives to donor reporting
- ✓ Key output of the study is a database of initiatives reported by stakeholders and member countries
- ✓ Intent is that database will be made available to PRIF members – **and others subject to any confidentiality requirements** (e.g., GFCE [Cybil Portal](#) and/or UNIDIR [Cyber Policy portal](#))
- ✓ Option to periodically update – to be confirmed in discussion with other regional mapping initiatives

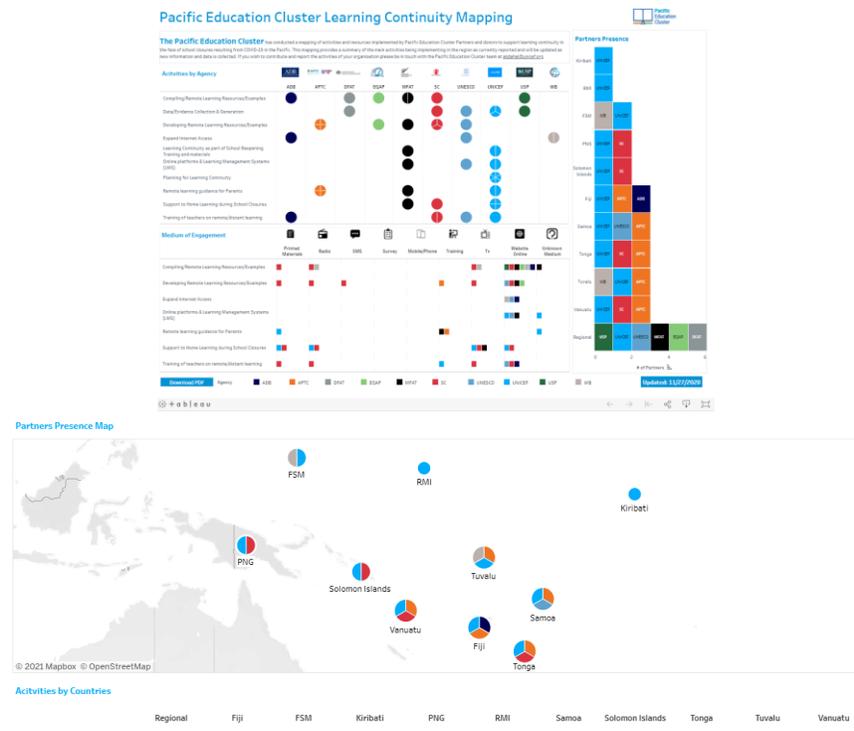


# Potential PRIF 2023 Cyber Report Part 2 - Agency Activities & Country Mapping (Pacific Education example shown)



- Activity
- Compiling/Remote Learning Resources/Examples
  - Data/Evidence Collection & Generation
  - Developing Remote Learning Resources/Examples
  - Expand Internet Access
  - Learning Continuity as part of School Reopening Training and Examples
  - Online platforms & Learning Management Systems (LMS)
  - Support to Home Learning during School Closures
  - Planning for Learning Continuity
  - Remote learning guidance for Parents
  - Training of teachers on remote/distant learning

Updated: 11/27/2020



Source: [Learning Continuity Mapping Dashboard | Tableau Public](#)

# P4C Outcomes Report (October 2023)



UK Government



The Partners in the Blue  
Pacific P4C Outcomes Report

2023

Nadi, Fiji.



[Pacific Cyber Capacity Building and Coordination Conference \(P4C\) 2023 \(youtube.com\)](https://www.youtube.com/watch?v=...)

## Theme 5: Inclusive Development



## Theme 1: Pacific Leadership



## Theme 4: Embedded Sustainability



## Theme 2: Contextualised Capacity Building



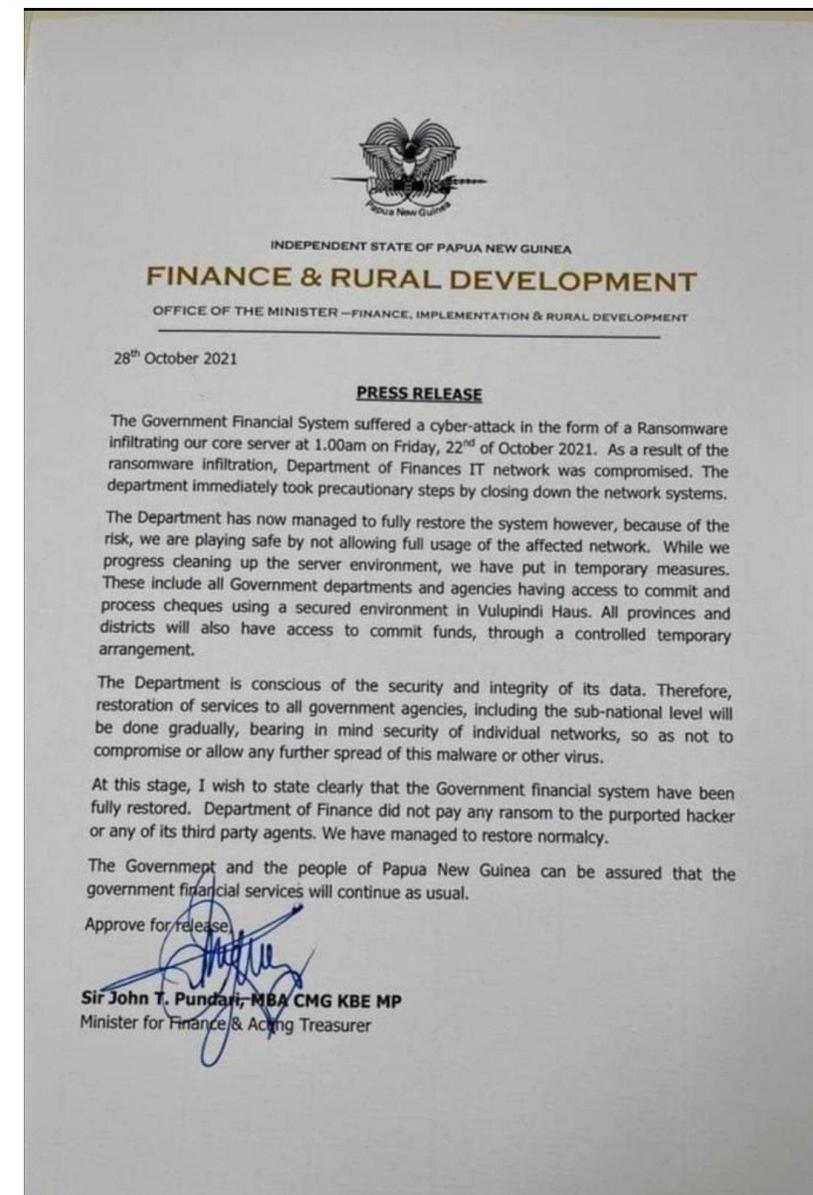
## Theme 3: Improved Pacific Cyber Ecosystem



# Cybersecurity: Pacific Case Studies

# Pacific Cyber Case Study #1

- Oct 2021 Papua New Guinea Ransomware Incident



Source: [Cyber attack calls for tougher law – The National \(4 Nov 2021\)](#)

# 2021 Papua New Guinea Ransomware Incident

- 22 Oct 2021: A cyberattack on Papua New Guinea's finance ministry briefly disrupted government payments and operations.
- Ransomware infiltrated and compromised a core server at the department of finance, hampering the government's access to foreign aid, and its ability to pay cheques and carry out other basic functions in the midst of a spiraling Covid-19 surge.
- The platform controls budgeting and financing for the entire PNG Government.
- The department "did not pay any ransom to the purported hacker or any of its third party agents. We have managed to restore normalcy."
- "The department has now managed to fully restore the system, however, because of the risk, we are playing safe by not allowing full usage of the affected network".

# 2021 Papua New Guinea Ransomware Incident

- Jonathan Pryke, Director, Pacific Islands Program at The Lowy Institute
  - “The systems are so vulnerable already, and ...(partners) trying to come into this space and provide its own security and infrastructure. But the reality is I think the horse has bolted on this one,”
  - “The systems are so exposed anyway that you really have to start over from the bottom up and that would be a huge investment. But in the pantheon of ...(national) priorities, it’s nowhere near the top.”



Source: [Papua New Guinea Hit by Ransomware Hackers With Millions in Aid Frozen – Bloomberg \(27 Oct 2021\)](#)

# 2021 Papua New Guinea Ransomware Incident



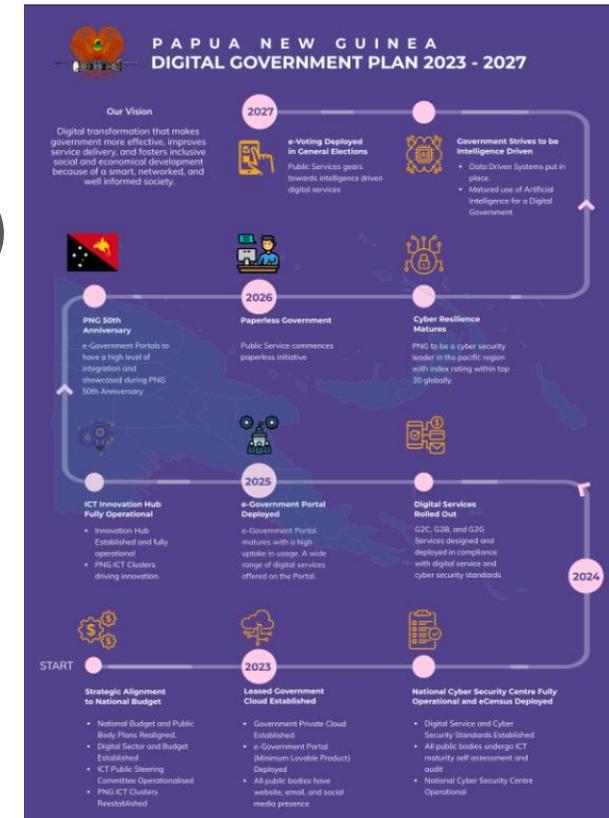
- Ravin Prasad, CEO Cybernetic Global Intelligence:
  - 85 % of organizations in PNG do not have formal cyber security policy/framework
  - 90 % of organizations in PNG have not recently performed penetration testing (cyber-attack simulation)
  - 86 % of organizations in PNG have not delivered cyber security training to all their staff
  - 85 % of organizations in PNG do not have separate cyber security budget
  - 92 % of organizations in PNG do not maintain a centralized register of cyber incidents
  - 90 % of organizations in PNG have not conducted web application testing.

Source: [Cyber attack calls for tougher law – The National \(4 Nov 2021\)](#)

# PNG Government's response

- Minister for ICT Timothy Masiu called on the need to “escalate ICT to the strategic level in the Public Service” and underlined the need for “(...) appropriate mechanisms for enforcement of cyber security standards and a governance framework for ICT”
- National ICT Summit [live on Facebook](#) (Nov 2021)
- First Pacific member of Global Forum of Cyber Expertise ([GFCE](#)) (2021)
- Digital Government Act ([2022](#))
- [Draft Digital Government Plan \(2023-2027\)](#) for consultation (2022)

Source: [Cybersecurity in the Pacific: Regional in Nature, Local in Practice | Pacific Online](#)



# Pacific Cyber Case Study #2: 2022 Vanuatu Ransomware Incident

## Ransom attack cripples Vanuatu government systems, forces staff to use pen and paper



Eryk Bagshaw

November 14, 2022 – 7.30pm

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13

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### Five months of Vanuatu court data lost in ransomware attack

January 23, 2023 • Vanuatu Daily Post/Pacnews • courts, ICT, Vanuatu • News



Vanuatu Cyber Security (Photo: ITU)

- More support for Pacific DMCs is required...

Source: [Ransom attack cripples Vanuatu government systems, forces staff to use pen and paper \(smh.com.au\)](https://www.smh.com.au)  
[Five months of Vanuatu court data lost in ransomware attack \(islandsbusiness.com\)](https://www.islandsbusiness.com)

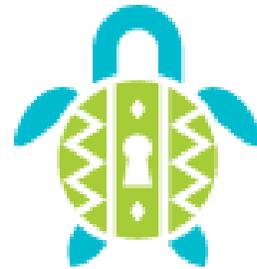
# Cybersecurity: Pacific Partners, Portals & Resources

# Regional Partners & Resources

- Global Forum on Cyber Expertise ([GFCE](#))
- Pacific Cyber Security Operational Network ([PaCSON](#))
- Oceania Cybersecurity Centre ([OCSC](#))
- [Pacific Fusion Centre](#)
- The Commonwealth
  - ✓ [Rule of Law - Commonwealth of Nations](#)
  - ✓ [Commonwealth Cyber Declaration Program](#)
- Commonwealth Telecommunications Organisation ([CTO](#))
  - ✓ [Cybersecurity Strategic Plan 2021-24](#) (Under Review)
- [ITU Cybersecurity Activities](#)
- United Nations Office on Drugs and Crime ([UNODC](#))
  - ✓ [Cybercrime](#)
    - [Global Programme on Cybercrime](#)
- United Nations Institute for Disarmament Research ([UNIDIR](#))
  - ✓ UNIDIR is an autonomous institution within the United Nations that conducts independent research on pressing global challenges related to disarmament, arms control and international security.
  - ✓ [Cyber Policy Portal](#)
- APNIC ([APNIC](#))
  - ✓ Asia Pacific Internet Development Trust ([APIDT](#))
  - ✓ [Ongoing projects](#)
- Pacific Government Development Agencies
  - ✓ Aus [DFAT](#), NZ [MFAT](#), USAID Digital Connectivity and Cybersecurity Partnership ([DCCP](#)), [JICA](#), [KISA](#), etc.
- Multilateral Development Banks
  - ✓ ADB
  - ✓ World Bank [Cybersecurity Multi-Donor Trust Fund](#)
  - ✓ [etc.](#)

# Regional Partners

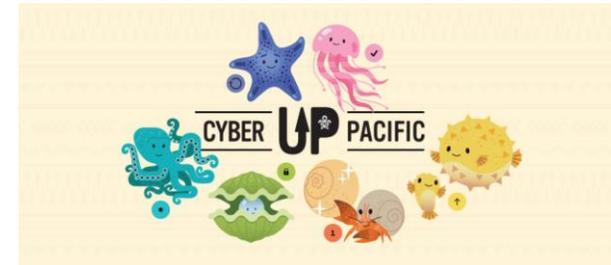
- **Pacific Cyber Security Operational Network ([PaCSON](#))**
  - ✓ Cyber Security Policy and Strategy
  - ✓ National Assessments
  - ✓ Confidence-building Measures (CBMs), Norms & Cyberdiplomacy
  - ✓ Cyber Incident Management
  
- ✓ [\(PaCSON\) - Cybil Portal](#)



**PaCSON**  
PACIFIC CYBER SECURITY OPERATIONAL NETWORK

# Regional Initiatives & National CERTS

- Pacific Cyber Security Operational Network ([PaCSON](#))
  - ✓ Operators & technical experts from Australia, the Cook Islands, Fiji, Kiribati, Marshall Islands, Nauru, New Zealand, Niue, Palau, Papua New Guinea, Samoa, the Solomon Islands, Tokelau, Tonga, Tuvalu & Vanuatu.
  - ✓ Local Cyber Smart Pacific awareness campaigns ([Cyber UP Pacific](#))
  - ✓ Regional approach but country-specific



- National Computer Emergency Response Teams (CERT)
  - ✓ [Tonga](#), [Vanuatu](#), [Papua New Guinea](#), [Samoa](#), Fiji (onboarding 2024)

# Regional Partners



## Maximising impact of cyber security capacity building across the Indo-Pacific through national assessments, roadmaps and evaluation

- Based in Melbourne, Australia the [Oceania Cyber Security Centre \(OCSC\)](#) is a not-for-profit cybersecurity assessment, evaluation and research organisation that conducts evidence-based cybersecurity capacity building in the Indo-Pacific. Jointly owned by eight Victorian Universities, the OCSC is focused on building regional capabilities through a mix of national cybersecurity capacity assessments, independent evaluations, localised research, and educational programs.
- At the invitation of governments, we conduct multi-stakeholder national cybersecurity capacity assessments using the [University of Oxford's Cybersecurity Capacity Maturity Model for Nations \(CMM\)](#). These assessments help partner nations understand where they stand now on the cybersecurity maturity journey and identify their own priorities for next steps, while providing specific recommendations for national policies, strategies, and activities to strengthen capacity and resilience.
- The OCSC continues to work with partner nations and the international cyber security capacity building community on research and capacity building projects that meet the identified needs and requests of partner nations, toward a safer and more secure digital environment for all.

# Regional Partners

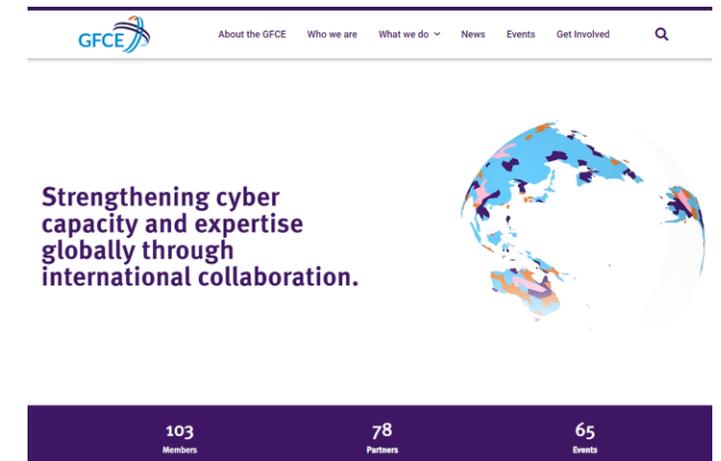


- Pacific Fusion Centre

- ✓ Training & strategic analysis against security priorities identified by PIF Leaders in the 2018 Boe Declaration on Regional Security
  - Cyber Incident Management & Critical Information Protection
  - National Computer Security Incident Response
  - Critical Information Infrastructure Protection
- ✓ Pacific Fusion Centre - Cybil Portal
  - (ADB only Observer status of PIF – no access to reports)

# Regional Partners

- **Global Forum on Cyber Expertise ([GFCE](#))**
  - ✓ Pacific Hub established
  - ✓ Coordinating regional and global cyber capacity projects and initiatives
  - ✓ Sharing knowledge and expertise by recommending tools and publications
  - ✓ Matching individual needs for cyber capacities to offers of support from the community as a clearing house function

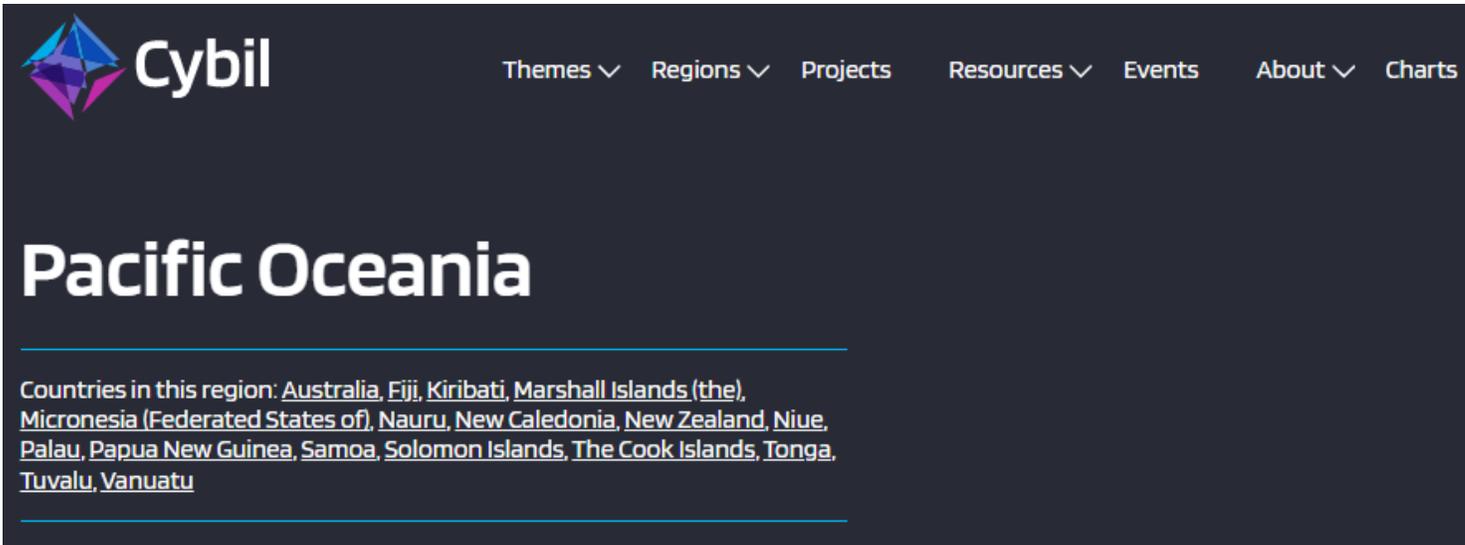


The screenshot shows the GFCE website homepage. At the top, there is a navigation bar with the GFCE logo on the left and links for 'About the GFCE', 'Who we are', 'What we do', 'News', 'Events', and 'Get Involved' on the right. Below the navigation bar, the main content area features a globe graphic on the right and the text 'Strengthening cyber capacity and expertise globally through international collaboration.' on the left. At the bottom of the page, there is a dark blue bar with three statistics: '103 Members', '78 Partners', and '65 Events'.

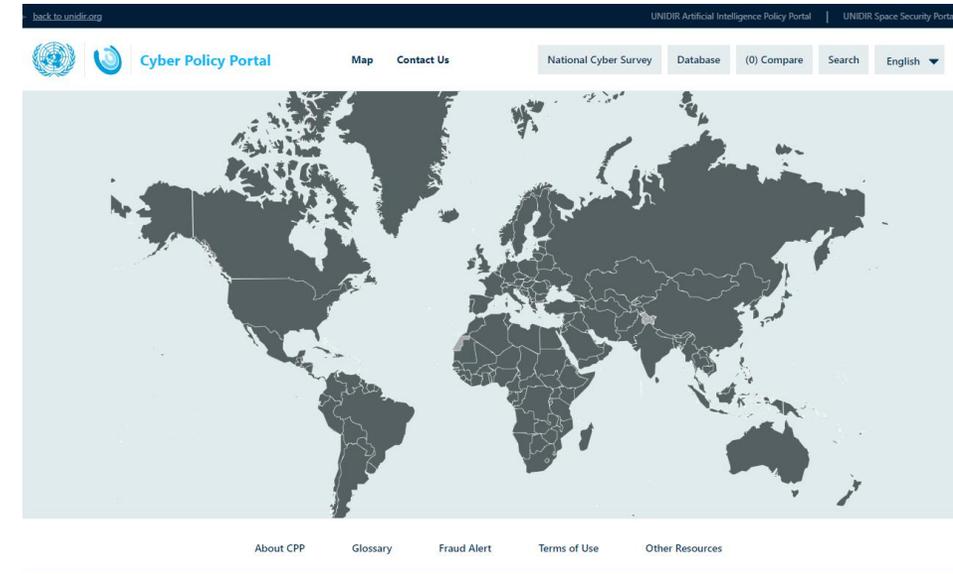
Members	Partners	Events
103	78	65

# Portals, Pacific Projects, Tools & Publications

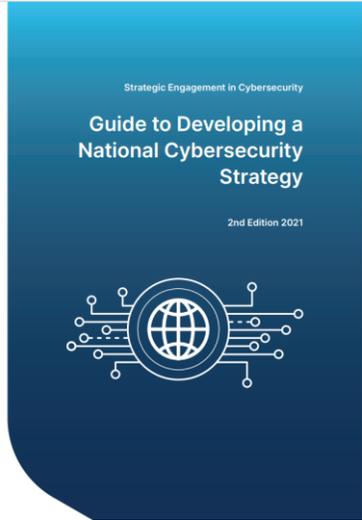
- [GFCE CYBIL Pacific Oceania Resources](#)
  - ✓ [80+ Projects](#)
  - ✓ [5+ Tools & Publications](#)
  - ✓ [GFCE data sharing partnership with UNIDIR Cyber Policy Portal](#)



The screenshot shows the Cybil website interface. At the top left is the Cybil logo, a stylized blue and purple diamond shape. To its right is the text 'Cybil'. A navigation menu follows with links for 'Themes', 'Regions', 'Projects', 'Resources', 'Events', 'About', and 'Charts'. Below the navigation, the heading 'Pacific Oceania' is displayed in large white text. Underneath, a list of countries in the region is provided: Australia, Fiji, Kiribati, Marshall Islands (the), Micronesia (Federated States of), Nauru, New Caledonia, New Zealand, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, The Cook Islands, Tonga, Tuvalu, and Vanuatu.



The screenshot shows the UNIDIR Cyber Policy Portal website. At the top, there are links for 'back to unidir.org', 'UNIDIR Artificial Intelligence Policy Portal', and 'UNIDIR Space Security Portal'. The main header includes the UNIDIR logo, the text 'Cyber Policy Portal', and navigation links for 'Map', 'Contact Us', 'National Cyber Survey', 'Database', '(0) Compare', 'Search', and 'English'. Below the header is a large world map. At the bottom of the page, there are links for 'About CPP', 'Glossary', 'Fraud Alert', 'Terms of Use', and 'Other Resources'.



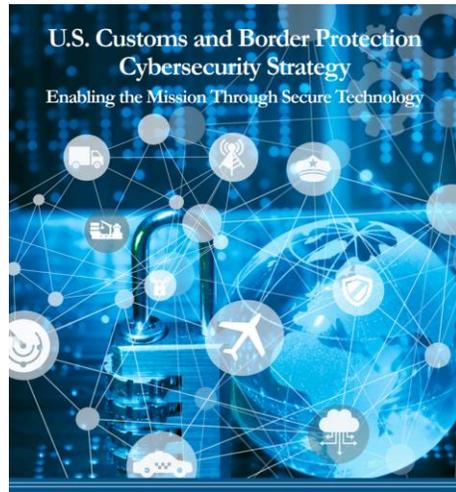
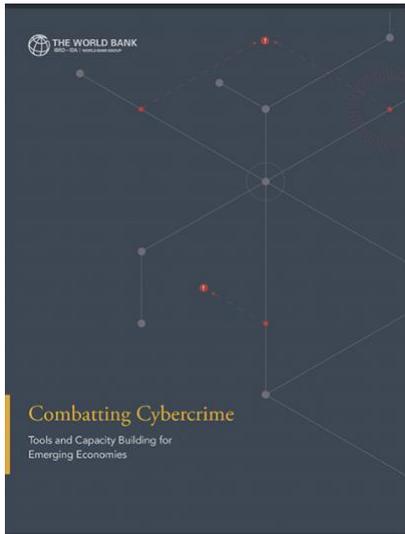
# Selected Resources

- ITU, Guide to Developing a National Cybersecurity Strategy ([2<sup>nd</sup> Edition 2021](#))
- UNIDIR [Cyber Policy Portal](#)
- GFCE, Global Overview of Existing Cyber Capacity Assessment Tools [2021](#)
- Global Cybersecurity Capacity Centre - Cybersecurity Capacity Maturity Model for Nations [2021](#)
- WB [Combatting Cybercrime Tools & Capacity Building](#)
- U.S. Customs and Border Protection Cybersecurity Strategy ([2016](#))
- [Cybersecurity Framework | NIST](#)

## The Dimensions of National Cybersecurity Capacity

The CMM considers cybersecurity to comprise five Dimensions which together contribute the breadth of national capacity that a country requires to be effective in delivering cybersecurity.

1. Developing cybersecurity policy and strategy;
2. Encouraging responsible cybersecurity culture within society;
3. Building cybersecurity knowledge and capabilities;
4. Creating effective legal and regulatory frameworks; and
5. Controlling risks through standards and technologies.



# Cyber Tools, Publications

- UNIDIR – [Cyber Policy Portal](#)
- UNIDIR – [International Cyber Operations research paper series](#)
- GFCE – [Cybil Portal](#)
- GFCE, AU, EU, OAS – [Global Cyber Expertise Magazine](#)
- Chatham House – [International Security Programme research and publications](#)
- Chatham House – [Journal of Cyber Policy](#)
- GCSCC Oxford University – [Cyber Security Capacity Maturity Model for Nations](#)
- Diplo, GIP – [Digital Watch observatory](#)
- CSIS – [Global Cyber Strategies Index](#)
- NUPI – [Centre for Digitalisation and Cyber Security Studies research and publications](#)
- EUISS, GMF, SMV – [EU Cyber Direct's Cyber Diplomacy in the EU research and publications](#)
- CSIS – [Inside Cyber Diplomacy podcast series](#)
- NATO CCDCOE – [Strategy and Governance database](#)
- NATO CCDCOE – [Cyber Defence Library](#)
- NATO CCDCOE – [INCYDER database](#)
- NATO CCDCOE – [Cyber Law Toolkit](#)
- NATO CCDCOE – [Tallinn Manual](#)
- EUISS, GMF, SMV – [EU Cyber Direct Knowledge Hub](#)
- Government of Australia – [Cyber Affairs and Foreign Policy webinar series](#)
- C3SA – [Cybersecurity Capacity Maturity Model for African nations \(CMM\)](#)
- ITU – [Global Cybersecurity Index](#)
- ITU – [National Cybersecurity Strategies Repository](#)
- ITU – [Guide to developing a national cybersecurity strategy](#)
- CYRILLA Collaboration – [CYRILLA Global Digital Rights Law database](#)
- CSIS – [Cybersecurity and Technology research and publications](#)
- OCSC – [Cybersecurity Capacity Maturity Model for Nations \(CMM\)](#)
- ICT4Peace – [Cybersecurity High-Level policy briefings](#)
- Leiden University – [Hague Program for Cyber Norms research and publications](#)

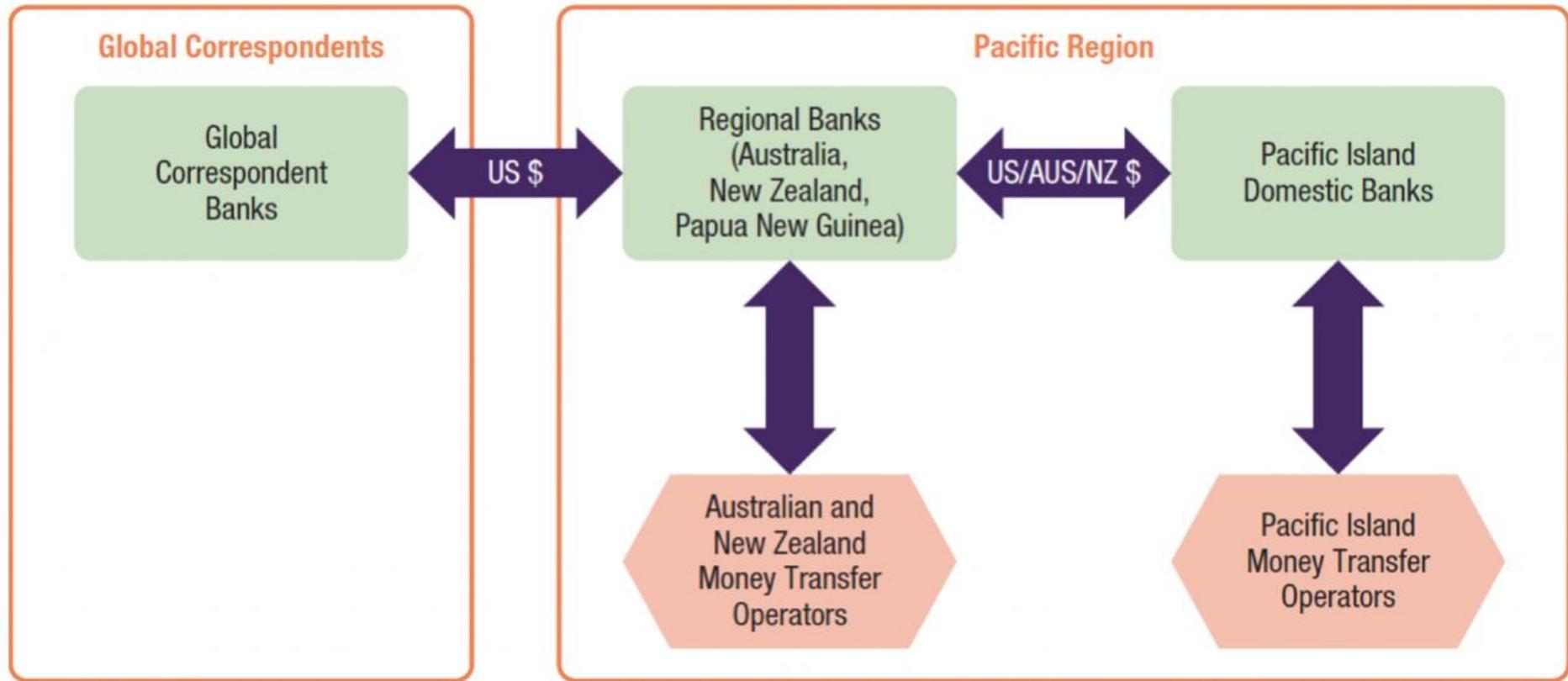
# Training Programs, Courses & Workshops

- UNITAR – [International Humanitarian Law and Cyber Warfare](#)
- UNITAR – [Digital and Cyber Diplomacy](#)
- Governments of AU, UK, CA, NL, NZ with UNITAR – [Women & International Security in Cyberspace Fellowship](#)
- NATO CCDCOE – [International Law of Cyber Operations](#)
- NATO CCDCOE – [Executive Cyber Seminar](#)
- ENISA – [National Cyber Security Strategies \(NCSS\) workshop](#)
- Global Diplomatic Forum – [Digital Diplomacy](#)
- Clingendael – [Cyber diplomacy training](#)
- Estonian MFA – [Tallinn Winter School of Cyber Diplomacy](#)
- ICT4Peace – [Cybersecurity Policy & Diplomacy Workshops](#)
- Norwich University – [Cyber Diplomacy](#)
- ANU – [Cyber Bootcamp Project](#)
- ESDC – [Cyberdiplomacy Tool for Strategic Security Policy](#)
- UNIDIR – [Disarmament Orientation Course \[Module 6 YT video\]](#)
- UNODA – [Online Cyberdiplomacy Training Course](#)
- OSCE – [Cyber/ICT security Confidence-Building Measures Course](#)
- Diplo – [Cybersecurity](#)
- Diplo – [Cybersecurity Diplomacy](#)
- SELA – [Specialisation Course on Cyber Diplomacy](#)
- UNSW Canberra at ADFA – [Master of Cyber Security, Strategy and Diplomacy](#)
- Governments of Australia and Denmark – [Cyber and Tech Retreat](#)
- INCIBE and OAS – [Cybersecurity Summer Boot Camp](#)

# Cybersecurity: ADB's Pacific Focus: Finance Sector

eKYC pilot  
&  
Cybersecurity Actionable Risk Management Framework Toolkit

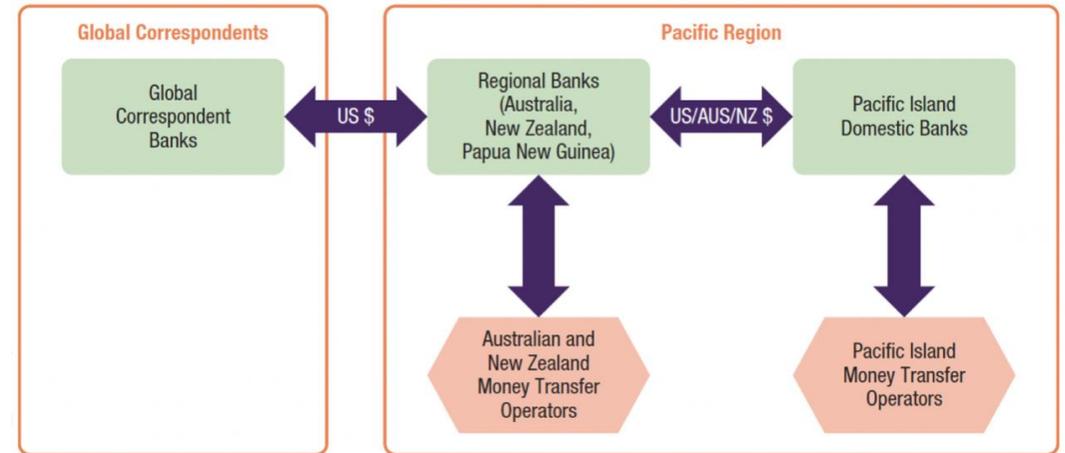
## ADB's response to South Pacific Central Bank Governors Meeting request



“The intention of the facility is to improve customer due diligence processes and Anti-Money Laundering / Countering Financing of Terrorism (AML/CFT) compliance, reduce the cost of remittances, lower legal compliance risks, and support the provision of correspondent banking services to the region.”

# ADB's response to South Pacific Central Bank Governors Meeting request

- The SPCBGM draws Governors from eight member countries, namely Australia, Fiji, New Zealand, Papua New Guinea, Samoa, Solomon Islands, Timor-Leste and Vanuatu
- At the South Pacific Central Bank Governors' Meeting on 17–18 November 2020, the South Pacific Governors agreed that access to cost-effective remittances remains a high-priority focus for the region.
- A key focus has been their collective effort to develop a regional 'Know Your Customer' (KYC) facility. The central banks, with support from the International Monetary Fund and other international agencies, requested an initial phase of work on a KYC facility for the South Pacific region
- Regional Project Team participants included Central Bank focal representatives, plus International Monetary Fund, World Bank, Asian Development Bank, the UN Capital Development Fund, Australian Government Department of Foreign Affairs and Trade; the New Zealand Ministry of Foreign Affairs and Trade, and the New Zealand Department of Internal Affairs
- ADB's contributions included:
  - ✓ Conducting national eKYC platform pilots (Samoa and Vanuatu)
  - ✓ Technical contributions to RBA's regional RFO for a regional e-KYC facility
  - ✓ Country assessments
  - ✓ Stakeholder workshops
  - ✓ Pilot demonstrations
  - ✓ Knowledge Sharing
  - ✓ Reporting to the regional project team
  - ✓ Contributing to Governors Forum status reports



L to R:

Governor Simeon Athy, Reserve Bank of Vanuatu; Governor Atalina Enari of Central Bank of Samoa; Governor Philip Lowe of Reserve Bank of Australia; Asst. Governor Simone Robbers of Reserve Bank of New Zealand; Governor Luke Forau of Central Bank of Solomon Islands; Governor Arif Ali of Reserve Bank of Fiji

Image Source: International Monetary Fund (Alwazir J, Liu Y, Stuart A et al. Report on the Pacific roundtables : actions to address correspondent banking and remittance pressure. Washington, DC : International Monetary 42 Fund, 2019.)

Image Source: [37th South Pacific Central Bank Governors' Meeting Joint Official Meeting Communique, 03-04 November 2022, Ramada Resort, Port Vila, Vanuatu](#)

**“The intention of the facility is to improve customer due diligence processes and Anti-Money Laundering / Countering Financing of Terrorism (AML/CFT) compliance, reduce the cost of remittances, lower legal compliance risks, and support the provision of correspondent banking services to the region.”**

## National eKYC Pilot Objectives

- Verify the ability of the platform to show customer due diligence
- Demonstrate feasibility
- Pilot platform with participating financial institutions (FIs)
- Gather insights from operations and partnering institutions, define best operating model for scale-up for financial inclusion
- Improve staff capacity in FIs
- Assess if the platform is the preferred option for meeting the eKYC requirements of regulators and partner institutions



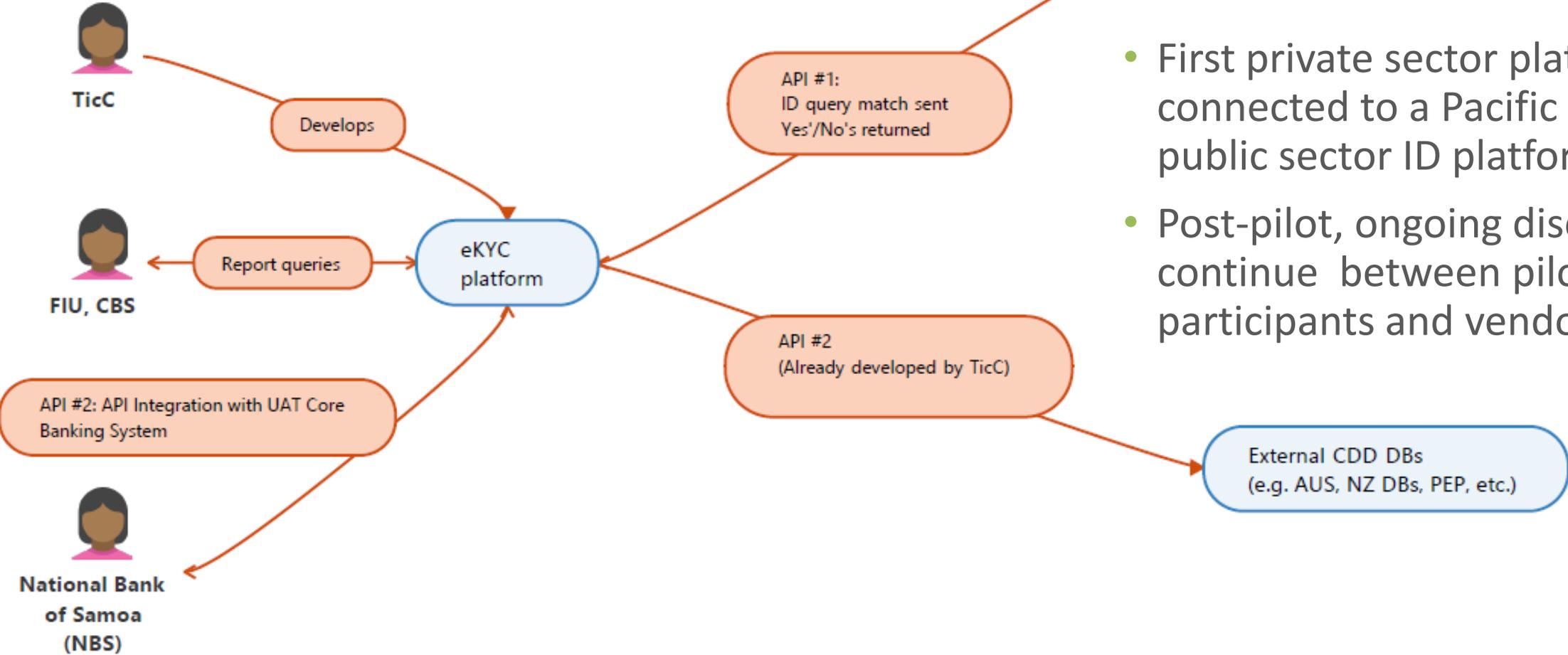
Image source: ADB

One ADB approach of Finance and Digital Sector specialists, supported by Consultants in Project Management, Legal and Regulatory, Cybersecurity, and Monitoring and Impact.

# Stakeholder Mapping



OEC



- First private sector platform connected to a Pacific Island public sector ID platform
- Post-pilot, ongoing discussions continue between pilot participants and vendor

# Actionable Cybersecurity Risk Management Framework Toolkit

- Small states and island countries often face similar, substantial challenges
  - ✓ Balancing financial integrity with financial inclusion
  - ✓ Increasing cyber awareness and capacity
  - ✓ Making the most of limited capital budgets, primarily spent on operations and sales
  - ✓ Addressing the cost center that is cyber defense and resilience
  - ✓ Financial institutions which need to ensure that there is sufficient confidence in their operational security to the public, regulators, partners, and correspondent banks
- *An Actionable Risk Management Framework – what to do + how to do it*
  - Guide for cybersecurity planning, implementation, incident response and business recovery
  - Helps fill the gap of limited human resources, capacity, time, training and expertise

# Preventative Process and Threat Matrix

- 12 categories covering the most important areas for cybersecurity in Financial Institutions
  - ✓ Stepped approaches explaining *what to do* (manage your assets by creating a list of hardware used) and *how to do it* (a pre-populated list explains what information to collect)
- 9 categories of cyber threats and how to respond (“I’ve just been phished!”)

Capability Identifier	Capability/Principle	Process Goal	Level 6 Process Identifier	Level 6 Process Description
				review requiring asset owners (identified in AM-09) to regularly review, confirm and update the information in the asset register to confirm that it is accurate and classifications are appropriate.
AM-02	Create an inventory for all hardware hosted externally and used by the organization. (Facilities managed, not Cloud)	Compile and maintain a documented list of all hardware assets hosted external to the organizations premises, but used by the organization. Enough data should be recorded that each hardware asset can be uniquely identified and that vulnerabilities can be assessed.	L6-AM-02-P-01	The following should be provided by the vendor and included in any vendor service contract/service agreement. a) Identify all hardware assets located within the vendor premises and used by the organization (workstations, servers, network routers, etc.). b) For each hardware asset, identify the data that can uniquely identify the assets (device type, manufacturer, model number, serial number, device location, IP address, device name, etc.). Where possible, these data elements should be consistent with those in L6-AM-01-P-01(b), unless otherwise agreed by the organization and the vendor. c) Catalog each device according to the data points in (b) and (c) above. d) Regular reports should be provided by the vendor, with the periodicity included in the service contract/service agreement.
		Implement an asset register solution	L6-AM-02-P-02	Included in any vendor service contract/service agreement, the vendor will provide a list of assets managed on behalf of the organization. The data elements provided will contain enough detail to uniquely identify the hardware asset, as per L6-AM-02-P-01(b) and (c). a) If one does not exist, identify an asset register storage solution, comprising easy data retrieval via a barcode or similar identifier.

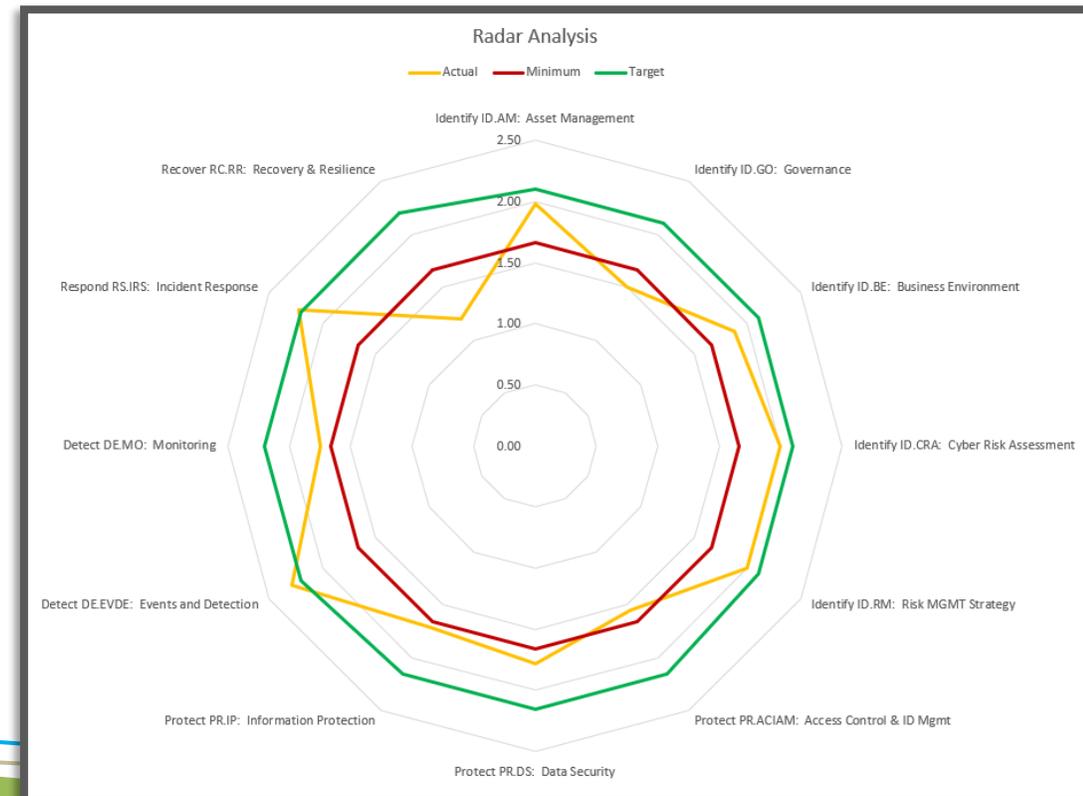
[Info](#)
[Dashboard](#)
[Detail](#)
[Simple](#)
[Guidelines](#)
[AM](#)
[GO](#)
[BE](#)
[CRA](#)
[DS](#)
[ACIAM](#)
[IP](#)
[MO](#)
[EVDE](#)
[IRS](#)
[RR](#)
[NIST Core](#)
[Re](#)

# Reports: Regular Review and Response

- Charts provide numeric, quantifiable representations of risk that can be meaningfully conveyed
- Each category & subcategory is ranked, with minimum thresholds to maintain & goals to obtain
- Visual tools such as a radar analysis provide an immediate ‘at a glance’ picture of a FI’s cybersecurity performance levels

Function	Actual	Minimum	Target	MGap	TGap
IDENTIFY (ID)	1.80	1.66	2.10	0.14	0.30
PROTECT (PR)	1.68	1.66	2.15	0.02	0.47
DETECT (DE)	2.09	1.66	2.20	0.43	0.11
RESPOND (RS)	2.38	1.66	2.20	0.72	-0.18
RECOVER (RC)	1.20	1.66	2.25	-0.46	1.05
AVERAGE	1.83	1.66	2.18	0.17	0.35

ID	Capability	Actual	Minimum	Target	MGap	TGap
AM-01	Create an inventory for all hardware assets housed within the company.	2.67	1.66	2.10	1.01	0.57
AM-02	Create an inventory for all software assets housed within the company	2.33	1.66	2.10	0.67	0.23
AM-03	Create an inventory for internally developed software used within the organization.	1.00	1.66	2.10	-0.66	-1.10



# ADB ARMF Toolkit mapped to Samoa Prudential Statements: Next steps

- Q: Will CBS accept a completed ARMF form from a FI?
- Q: How different are other South Pacific prudential statements?
- Q: What progress has been made on the 2018 recommendation for a regional prudential reporting system?
  - Attended by Cook Islands, Fiji, FSM, Palau, Papua New Guinea, RMI, Samoa, Solomon Islands, Timor Leste, Tonga, Vanuatu, WB (Sydney), & APRA

For more info see the ADB A-RMF demo:

- [All three in one demo](#) (14:43)
- Preventative Processes ([Upper Level](#)): (6:59)
- Preventative Processes ([Lower/Basic Level](#)) (4:26)
- Threat Matrix ([Upper Level](#)) (3:16)

## AFSPC Prudential Reporting Workshop

The regional Prudential Regulatory Workshop on reporting was held in Sydney during June 2018 attended by representatives from the **Cook Islands, Tonga, Samoa, Fiji, Vanuatu, Solomon Islands, Papua New Guinea, Timor Leste, Palau, RMI, FSM**, the World Bank (Sydney), and the Australian Prudential Regulatory Authority (APRA). Additionally, four private sector information technology service providers attended the workshop.

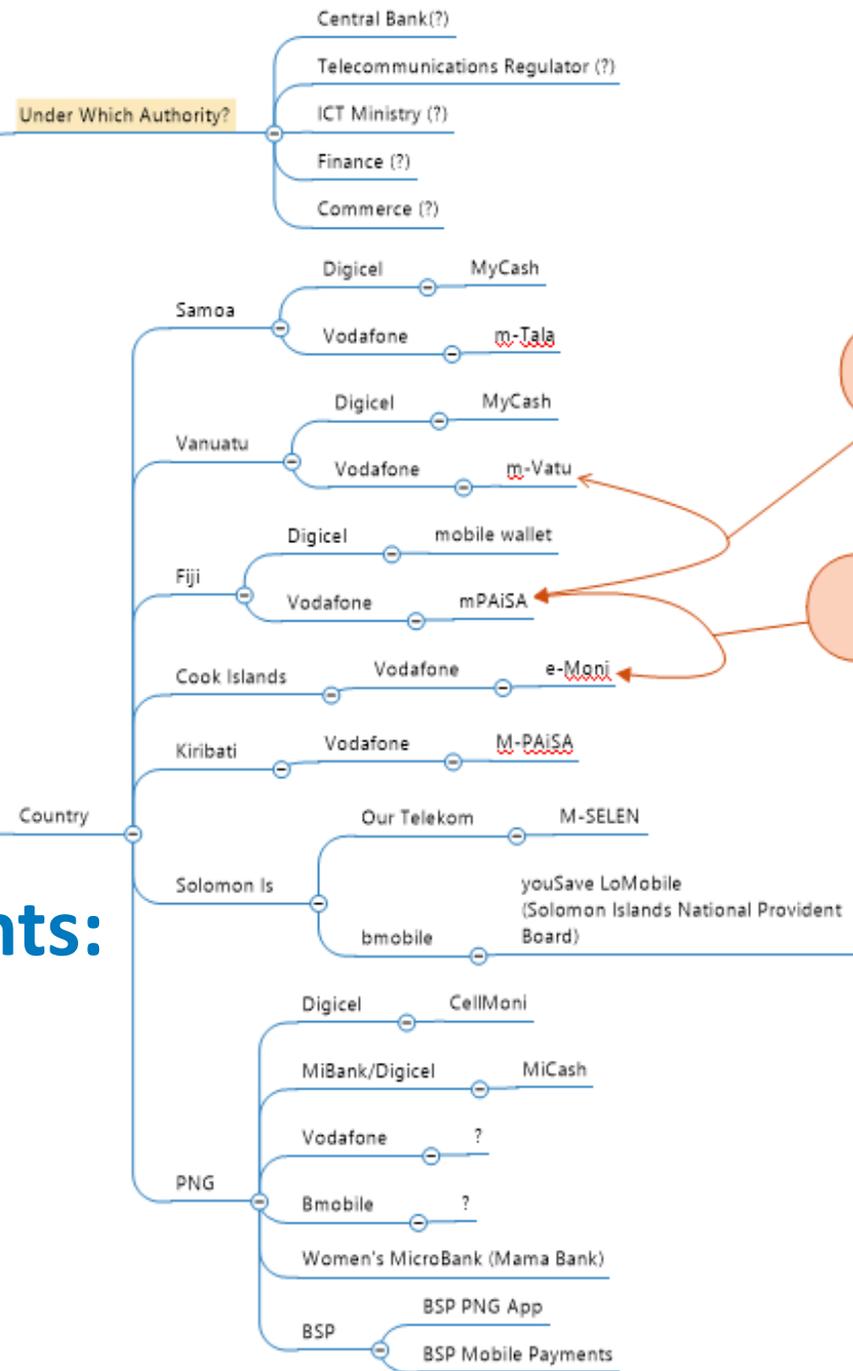
The workshop launched AFSPC efforts of the Prudential Reporting Working Group to facilitate contacts with private service providers and regional regulators experienced in developing online reporting processes. The event contributed to the group's determination of next steps, priorities, and workplans to address the long-standing challenges of manual Excel based prudential reporting. Four private sector IT service providers (three from Australia and one from the United States) presented the group with ideas and concepts for automating prudential data submission and analysis reporting.

Follow-up work from the workshop involved the working group developing standard system requirements and three of the service providers developing a project outline and costing to develop a prudential reporting system for AFSPC members. The working group will continue the assessment of the proposals in FY2020, with an aim to identify possible solutions by the end of 2019.

Source: [PFTAC Annual Report 2019](#)

Finance Sector

e-Money & Mobile Money Providers

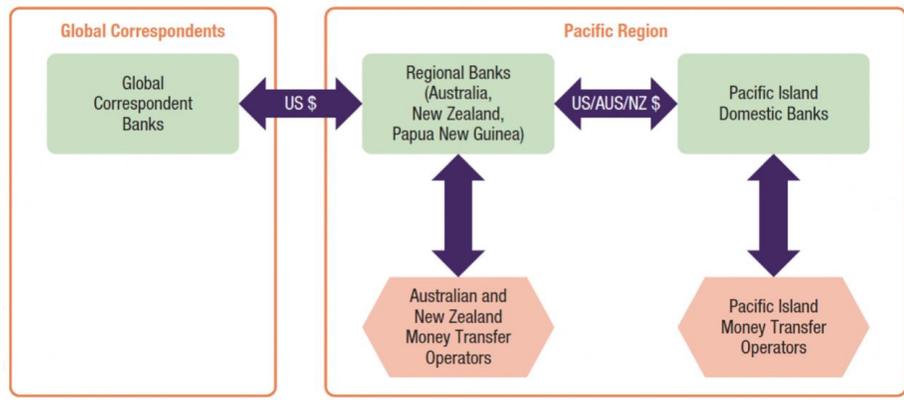


Functional cross-border remittances as of Oct 2023

- eKYC reporting?
- Prudential statements reporting?

Functional cross-border remittances as of Apr 2024

- eKYC reporting?
- Prudential statements reporting?



# Prudential Statements: Implications for e-Money & Mobile Money Service Providers?

# ADB's Ongoing Response

- Continued regional support, including crucial implementer of the March 2024 Pacific Islands Forum & World Bank Corresponding Banking Relationships (CBR) Roadmap in the Pacific
- ARMF toolkit Phase two
  - Additional Prudential Statement Mapping
  - Increase Sectors, including Mobile Money Operators/Telcos
- Continued support of national implementations, including:
  - Pipeline initiatives to support Digital Public Infrastructure
  - Digital ID and Digital Financial Services
  - Technical Assistance and Policy-Based Loans
  - Input into Country Partnership Strategies



The screenshot displays the Pacific Islands Forum website's news release page. At the top, the navigation menu includes 'Who we are', 'What we do', 'Work with us', 'Publications', 'Events', 'Contact Us', and 'Members'. The main headline reads: 'RELEASE: Pacific Islands Forum & World Bank event puts focus on Corresponding Banking Relationships (CBR) in Pacific'. Below the headline, it is dated '26 March 2024'. A breadcrumb trail shows 'Home > Publications > RELEASE: Pacific Islands Forum & World Bank event puts focus on Corresponding Banking Relationships (CBR) in Pacific'. A featured image shows a city skyline at sunset. To the right, there is a download link for 'CBR Roadmap\_PESC Endorsed.pdf' and social media sharing options for Facebook, X, LinkedIn, and Email. A short paragraph at the bottom states: 'PIF Sydney, Wednesday 26th March 2024—The Pacific Islands Forum Secretariat with the support of the World Bank, will be hosting a high-level event on Corresponding Banking Relationships (CBR) from the 27th to the 28th March 2024 in Sydney, Australia.'

# Appendix: E-commerce in the Pacific

## PIFS Pacific E-commerce Strategy & Roadmap

# Pacific Region



## **Regionalism, Regional Trade Agenda, and Strategic E-commerce Framework**

---

Virtual Validation Workshop for  
Pacific Regional E-commerce Strategy and Roadmap  
21-23 July 2021

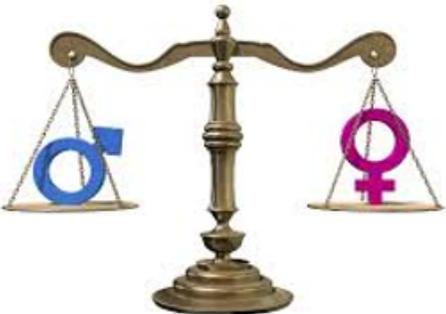
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**PACIFIC ISLANDS FORUM**

# E-commerce Landscape in the Pacific

## 7 x Policy Areas



**5 GENDER EQUALITY**  
Achieve gender equality and empower all women and girls

### Addressing the Gender Dimension of E-commerce

Towards a Holistic Analytical and Policy Framework



# Pacific E-commerce Initiative



## BACKGROUND

- E-commerce is one of the **Pacific Aid-for-Trade Strategy 2020-2025** priorities
- Regional work starts in 2017 under the [Pacific E-commerce Initiative](#)
- 2017-2021 - diagnostic E-commerce studies in 11 countries + a regional study
- August 2021 - [Pacific Regional E-commerce Strategy and Roadmap](#) approved by Forum Trade Ministers
- **54 regional measures** covering the 7 UNCTAD E-commerce Policy Areas
- Implementation **coordinated by the PIFS** – unit being set up to do so
- Focus is now on **implementation** – activities ongoing at PIFS and partner agencies - UNCTAD, UNCDF, E-Trade Alliance, PTI, ESCAP, WB, etc.

# E-commerce Landscape in the Pacific (cont'd)

## ROADMAP FOR IMPLEMENTATION

7 x policy areas

18 x outputs

54 x measures



### IMPLEMENTING AGENCY/IES

- DEVELOPMENT PARTNERS, CROP AGENCIES
- DONORS



### INDICATIVE BUDGET



### PERFORMANCE INDICATORS

- MONITORING, EVALUATION & LEARNING
- ARE WE ON TRACK?



### TIMELINE

- BASELINE (2021)
- TARGET YEAR (2026)

7 x POLICY AREAS	18 x STRATEGIC OUTPUTS
PA 1: E-COMMERCE READINESS AND STRATEGY FORMULATION	1.1 National E-commerce strategies are developed and implemented in FICs, which are built on domestic consensus and inspired by the Regional E-commerce Strategy and Roadmap.
	1.2 Statistics on E-commerce are available to inform national and regional policymaking and the formulation of donor-funded programmes.
	1.3 E-commerce potential and opportunities in the Pacific are visible and recognized internationally.
PA 2: ICT INFRASTRUCTURE AND SERVICES	2.1 International connectivity is expanded and strengthened across the Pacific.
	2.2 Supply of general and last-mile domestic connectivity is expanded across the Pacific
	2.3 Demand for better connectivity is stimulated across the Pacific.
PA 3: TRADE LOGISTICS AND TRADE FACILITATION	3.1 Trade procedures relevant to cross-border E-commerce are digitized and harmonized across FICs.
	3.2 Logistics systems relevant to E-commerce are strengthened their costs to business reduced.
	3.3 Postal readiness for E-commerce has increased.
	3.4 Accessibility of E-commerce platforms has increased
PA 4: LEGAL AND REGULATORY FRAMEWORKS	4.1 E-commerce-related laws are made or amended based on UNCITRAL model laws as best international standard, plus other best international practices.
	4.2 International agreements on E-commerce benefitting FICs are negotiated and concluded.
PA 5: ELECTRONIC-PAYMENT SOLUTIONS	5.1 Non-bank digital payment solutions for E-commerce are deployed across the Pacific.
	5.2 Business-friendly digital payment solutions spearheaded by commercial banks and MNOs are integrated in E-commerce ecosystem.
PA 6: E-COMMERCE SKILL DEVELOPMENT	6.1 The regional innovation/start-up ecosystem for E-commerce business ventures is strengthen.
	6.2 Digital skills are enhanced for all.
PA 7: ACCESS TO FINANCE FOR E-COMMERCE	7.1 Availability of risk sharing facilities and blended finance solutions has increased for E-commerce players (marketplace, vendors, merchants).
	7.2 Alternative sources of finance for E-commerce ventures have been mainstreamed in access to finance solutions and are promoted regionally.

# Regional E-commerce Boosters & Enablers

SUPPORT TO THE DEVELOPMENT OF ALTERNATE FINANCING OPTIONS LIKE CROWDFUNDING AND PRE-SALES MECHANISMS FOR START-UPS TO GAIN ACCESS TO CAPITAL FROM THE CONTRIBUTIONS OF MANY SMALL INVESTORS

ESTABLISH THE PACIFIC E-COMMERCE COMMITTEE – STRENGTHEN PARTNERSHIPS AND IMPLEMENT THE STRATEGY AND ROADMAP W/ PIFS OVERSIGHT

DEPLOY INTEROPERABLE CUSTOMS SYSTEMS INCLUDING ASYCUDA IN ALL REMAINING FICS THAT HAVE NOT ACQUIRED ONE, TO INCREASE HARMONIZATION OF PROCESSES AND PROCEDURES WITH THE ABILITY TO CONNECT TO FUTURE SINGLE WINDOW SYSTEMS

PARTNER WITH EXISTING CO-WORKING SPACES AND INNOVATION HUBS TO DEVELOP A REGIONAL PROGRAM OF SHORT COURSES SUPPORTING THE BUSINESS COMMUNITY WITH SKILL DEVELOPMENT AND WITH MENTORING FOR THE DIGITAL ECONOMY

# Pacific Regional E-commerce Strategy and Roadmap



Pacific  
E-commerce  
Initiative

[HOME](#) [DEVELOPMENT](#) [RESOURCES](#) [STATISTICS](#) [NEWS](#) [ABOUT](#) [TEAM](#)

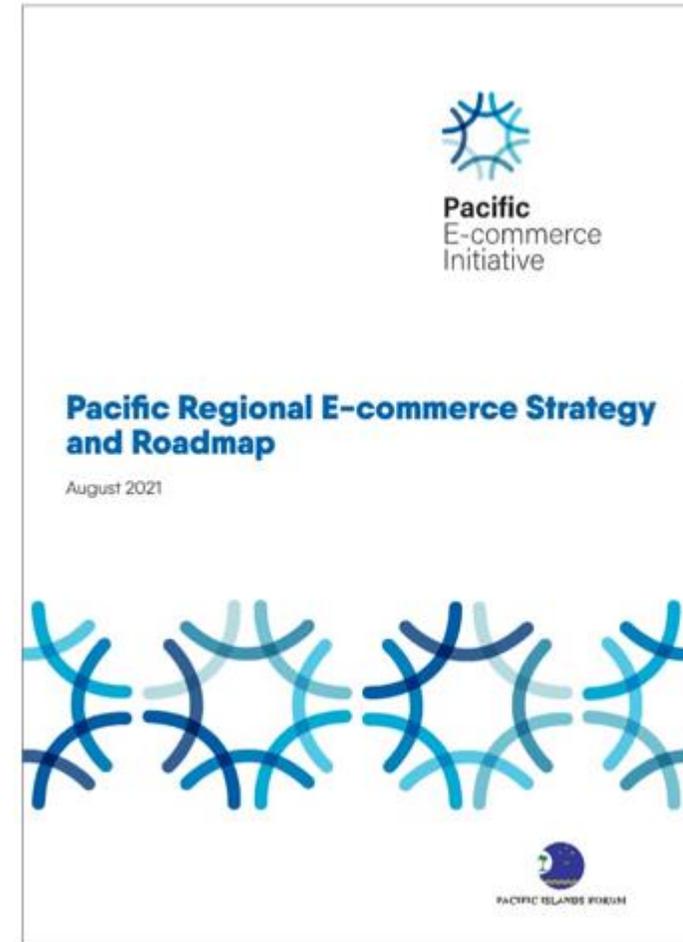
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## Pacific Regional E-commerce Strategy and Roadmap

[View Resource](#)

[Download PDF](#)

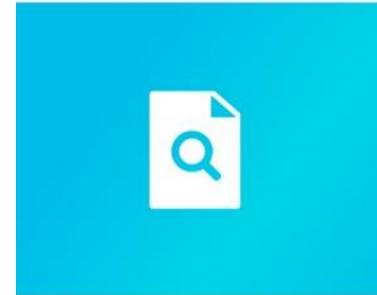
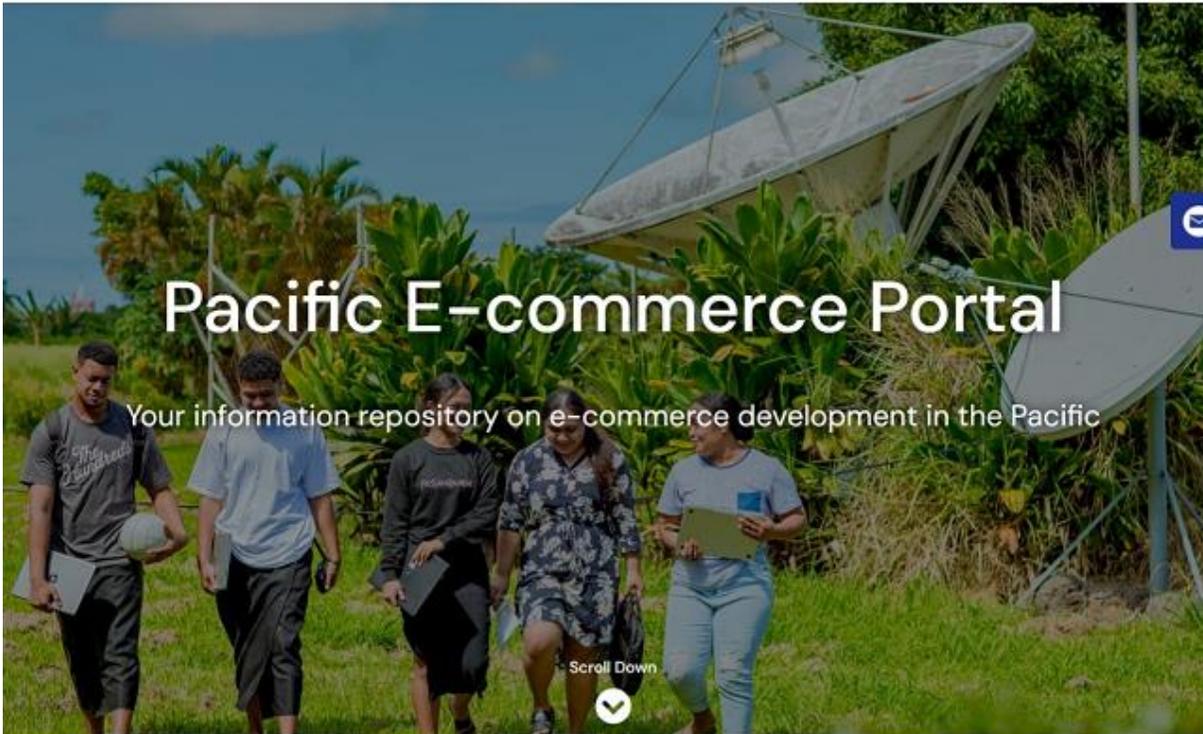


# Pacific E-commerce Portal



HOME DEVELOPMENT RESOURCES STATISTICS NEWS ABOUT TEAM

Register Login



## Programs

Search for information on development programs supporting E-commerce in the Pacific



## Business Toolkits

Find practical toolkits to help your businesses move online



## Training Materials

Training course on E-commerce disciplines for policymakers in the Pacific



## Reports

National and regional E-commerce diagnostic reports and strategies for Pacific Island Countries



## Statistics

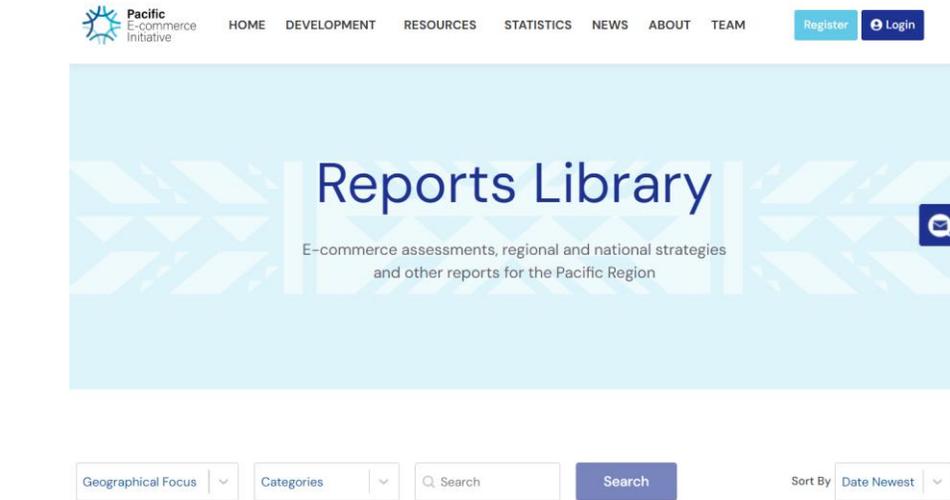
The most comprehensive compendium of E-commerce statistics available for the Pacific region



## News

Updates and news on e-commerce development in the Pacific

# Pacific E-commerce Portal



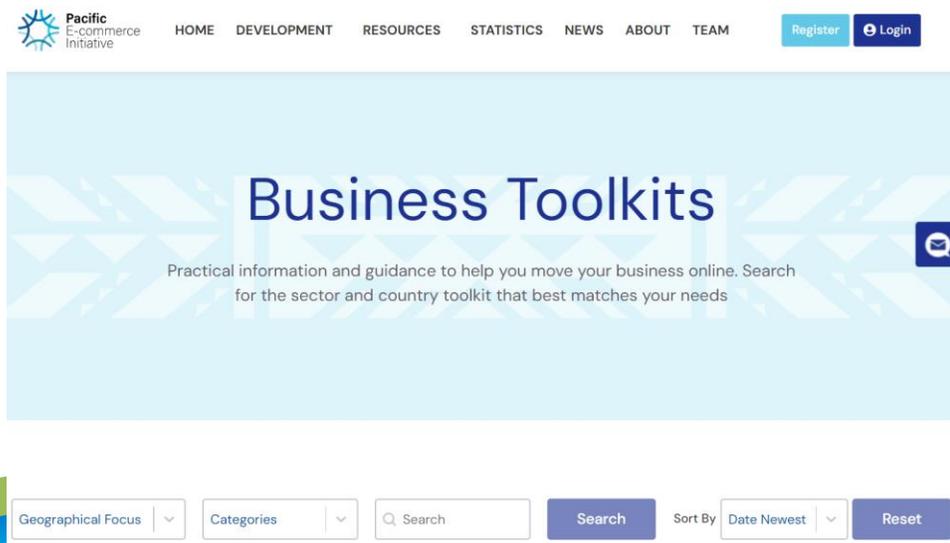
Pacific E-commerce Initiative

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## Reports Library

E-commerce assessments, regional and national strategies and other reports for the Pacific Region

Geographical Focus Categories Search Search Sort By Date Newest



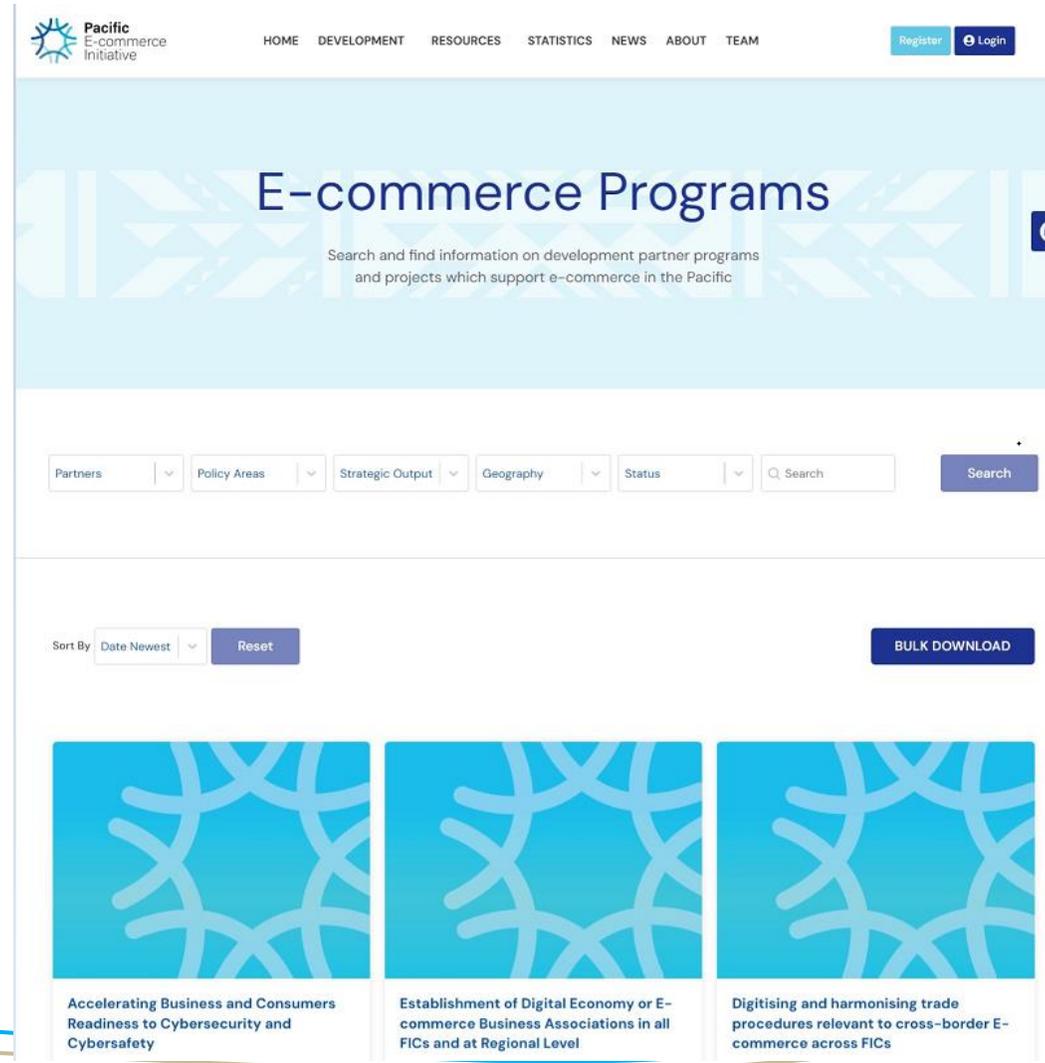
Pacific E-commerce Initiative

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## Business Toolkits

Practical information and guidance to help you move your business online. Search for the sector and country toolkit that best matches your needs

Geographical Focus Categories Search Search Sort By Date Newest Reset



Pacific E-commerce Initiative

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## E-commerce Programs

Search and find information on development partner programs and projects which support e-commerce in the Pacific

Partners Policy Areas Strategic Output Geography Status Search Search

Sort By Date Newest Reset BULK DOWNLOAD

- Accelerating Business and Consumers Readiness to Cybersecurity and Cybersafety
- Establishment of Digital Economy or E-commerce Business Associations in all FICs and at Regional Level
- Digitising and harmonising trade procedures relevant to cross-border E-commerce across FICs

# News - Pacific Ecommerce Initiative



April 22, 2024

## The Pacific responds to declining Correspondent Banking Relations in the region

The Pacific Islands Forum Secretariat (PIFS) and the World Bank co-organised the first High-level gathering on 27-28 March in Sydney...

[READ MORE](#)



April 18, 2024

## Pacific officials and stakeholders review progress of the Pacific Regional E-commerce Strategy and Roadmap

The Pacific Regional E-commerce Strategy and Roadmap (the Strategy) is gaining momentum, with the latest update revealing that 61% of...

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March 22, 2024

## First Private Sector Meeting on E-commerce Development in the Blue Pacific

The inaugural meeting of the Pacific E-commerce Private Sector Sub-committee on 22 March 2024 marked a significant milestone in coordinating...

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# First Private Sector Meeting on E-commerce Development in the Blue Pacific

March 22, 2024, 1:42 pm, Pacific E-commerce Committee

# E-commerce Legislation

# E-commerce Legislation

## *Box 9: United Nations Conventions and Model Laws on Electronic Commerce*

- **UNCITRAL Model Law on Electronic Commerce (1996)** establishes rules for the formation and validity of contracts concluded electronically and for the attribution and retention of data messages.
- **UNCITRAL Model Law on Electronic Signatures (2001)** establishes basic rules for assessing possible responsibilities and liabilities for the signatory, the relying party, and trusted third parties intervening in the signature process.
- **United Nations Convention on the Use of Electronic Communications in International Contracts (2005)**, building upon and updates the provisions of the two aforementioned Model Laws, contributes to enabling paperless trade by, among others: 1) validating the legal status of electronic transactions by setting general functional equivalence requirements of “writing”, “original” and “signature”; 2) preventing medium and technology discrimination; 3) enabling cross-border recognition of electronic signatures; 4) permitting the use of electronic means in alternative dispute resolution mechanisms.
- **Model Law on Electronic Transferable Records (2017)** aims to enable the legal use of electronic transferable records via all technologies and models, such as registries, tokens, and distributed ledgers both domestically and across borders on the principles of non-discrimination against the use of electronic means, functional equivalence and technology neutrality.

Source: United Nations Conventions and Model Laws on Electronic Commerce<sup>24</sup>

Source: <https://uncitral.un.org/en/texts/ecommerce>

# E-commerce Legislation: 4 different cyber laws

UNCTAD considers four (4) different cyber laws needed for E-commerce to develop harmoniously:

- **E-transactions:** E-transaction laws that recognise the legal equivalence between paper-based and electronic forms of exchange is considered a prerequisite for conducting commercial transactions online. Such laws have been adopted by 158 countries (81 percent), of which 68 are developing or transition economies and 30 are Least Developing Countries.
- **Data Protection and Privacy:** Data protection and privacy laws regulate the collection, use, and sharing of personal information to third parties without notice or consent of such individual (Data Subjects). 132 out of 194 countries (66 percent) had put in place legislation to secure the protection of data and privacy.
- **Cybercrime:** This area of law aims to address all forms of illegal acts, violations, and infringements committed online or through the Internet. 154 countries (79 percent) have enacted cybercrime legislation, with the highest adoption rate in Europe (93 percent). Asia and the Pacific has an adoption rate of 77 percent.
- **Online Consumer Protection:** This area of law protects and safeguards the economic interests of online consumers and empower them with free and informed choice, while also bestowing rights should any problems arise. Out of 134 countries for which data are available, 110 have adopted legislation on consumer protection related to E-commerce. It was not possible to obtain data in 55 countries, suggesting that online consumer protection is not being fully addressed.

Besides the above four main regulatory areas, UNCTAD eCommerce and Law Reform Programme also acknowledges relevance of legislation on underlying issues underpinning E-commerce, including Intellectual Property, Competition, and Taxation. As E-commerce expands to cover almost every aspect of trade and business, these areas of law will have increasing importance for countries to regulate cross-border transactions.

Source: UNCTAD Cyberlaw Tracker

# E-commerce Legislation

Table 36: Recommendations on Legal and Regulatory Framework

Recommendations	Timeline
1. <b>Draft or update E-transactions, consumer protection, privacy and data protection, and <u>cybercrime legislation</u></b> (based on regulatory gap analysis, and following best international practices), to meet E-commerce requirements.	Short-Medium

# Summary of Adoption of E-Commerce Legislation Worldwide | UNCTAD

The UNCTAD Global Cyberlaw Tracker is the first ever global mapping of cyberlaws. It tracks the state of e-commerce legislation in the field of e-transactions, consumer protection, data protection/privacy and cybercrime adoption in the 194 UNCTAD member states. It indicates whether or not a given country has adopted legislation, or has a draft law pending adoption. In some instances where information about a country's legislation adoption was not readily available, 'no data' is indicated.

If you would like to update or amend your country's data, please fill in the [questionnaire](#) and forward your response to [ICT4D@unctad.org](mailto:ICT4D@unctad.org).

-  E-TRANSACTION LAWS
-  DATA PROTECTION PRIVACY LAWS
-  CYBERCRIME LAWS
-  CONSUMER PROTECTION LAWS



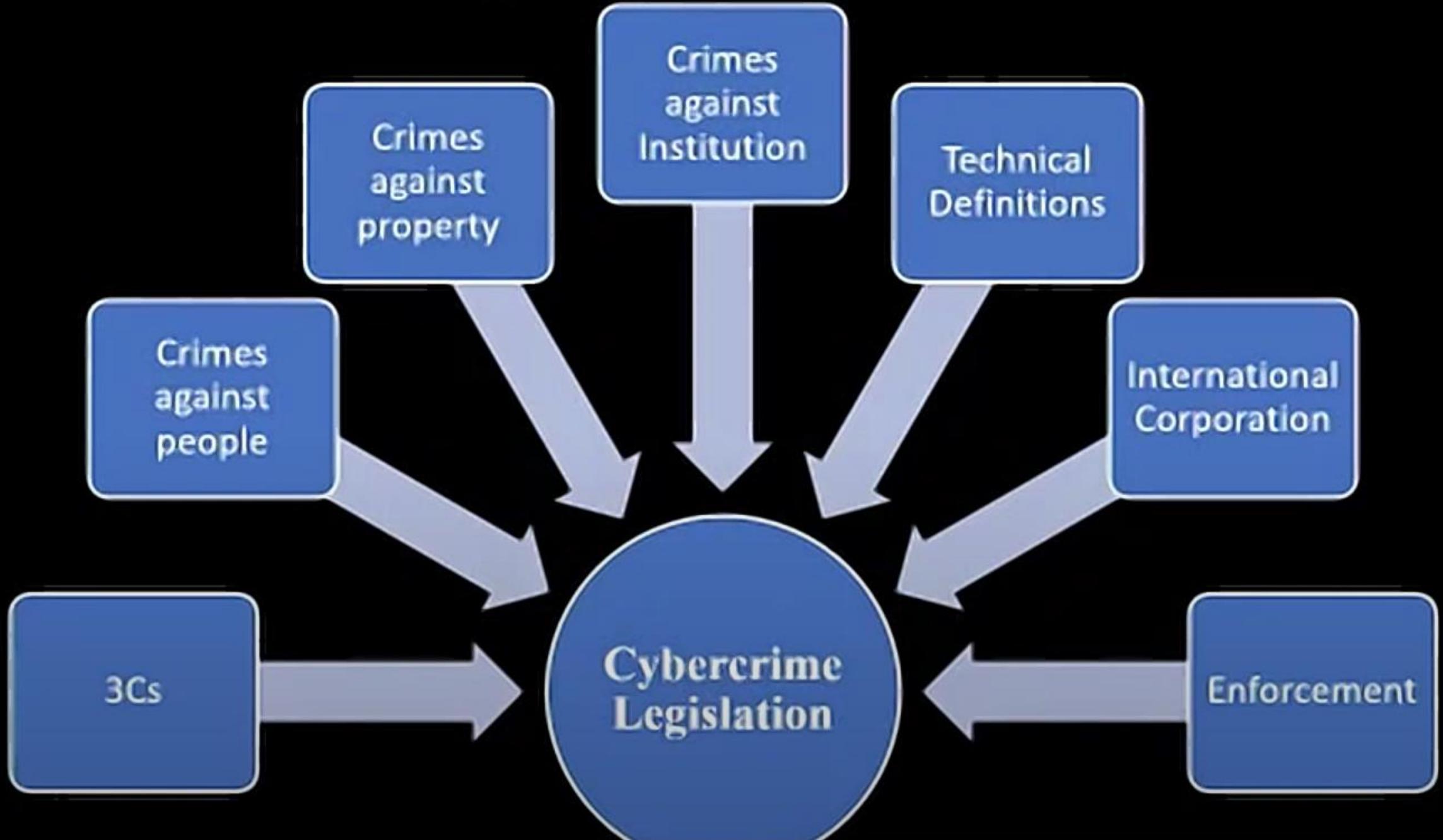
**Asia-Pacific (60 countries)**  
*Countries with legislation*

**Electronic Transactions:**  
50 (83%)

**Consumer Protection:**  
27 (45%)

**Privacy and Data Protection:**  
34 (57%)

**Cybercrime:**  
46 (77%)



# Appendix: PRIF ICT Working Group

# Pacific Regional Infrastructure Facility (PRIF)

PRIF is a multi-partner coordination and technical assistance facility that aims to improve the quality and coverage of infrastructure and service delivery in the Pacific.

## Development Partners



ASIAN DEVELOPMENT BANK



AUSTRALIAN DEPARTMENT OF FOREIGN AFFAIRS AND TRADE



NEW ZEALAND MINISTRY OF FOREIGN AFFAIRS AND TRADE



EUROPEAN INVESTMENT BANK



EUROPEAN UNION



JAPAN INTERNATIONAL COOPERATION AGENCY



THE WORLD BANK

WORLD BANK GROUP



UNITED STATES OF AMERICA, DEPARTMENT OF STATE

## Other Partners



INTERNATIONAL RENEWABLE ENERGY AGENCY



LOWY INSTITUTE



PACIFIC POWER ASSOCIATION



PACIFIC ISLANDS FORUM



PACIFIC WATER AND WASTES ASSOCIATION



PACIFIC COMMUNITY



SECRETARIAT OF THE PACIFIC REGIONAL ENVIRONMENT PROGRAMME



UNIVERSITY OF THE SOUTH PACIFIC



UNITED NATIONS DEVELOPMENT PROGRAMME



UNITED NATIONS CHILDREN'S FUND



UNITED NATIONS HUMAN SETTLEMENTS PROGRAMME



UNITED NATIONS ENVIRONMENT PROGRAMME



Information and Communications Technology Sector Working Group

PRIF sector and thematic working groups facilitate program coordination, consultation and networking among partner experts working on infrastructure development in the Pacific. Working groups provide an opportunity for members to engage with technical counterparts, share experiences, operational pipelines and activities. Working groups identify and advocate for sector priority initiatives and technical assistance to be incorporated into the annual PRIF work plan.

# PRIF ICT WG Partner Management Committee presentation

## Achievements in 2023

- Shift in focus from supporting delivery of physical ICT infrastructure, to supporting digital transformation and resilience
- Facilitating coordination between development partners, industry and regional stakeholders

## Discussion highlights in 2023

- **ICT and Disaster Risk Management:** Emergency preparedness in the Caribbean region and its applicability for the Pacific region
- Opportunities for quick wins and a more sustainable model for domain registry initiatives, and a proposed South Pacific Internet multistakeholder forum (auDA / APNIC)
- **ICT priority pipelines** from National Infrastructure Investment Plans
- Understanding the work of agencies/networks:
  - Commonwealth Connectivity Agenda
  - Pacific Community (SPC) digital initiatives
  - US Digital Connectivity and Cybersecurity Partnership (DCCP)
  - PITA Strategy Forum 2023 and PITA/ITU Emergency Telecommunications Readiness

## Priorities for 2024

1. Follow on and promotion of cybersecurity mapping
2. Digitalization and resilience TA
  - Aim to commence in Q1
  - Shortlist regional interventions identified in recent studies (e.g. PIFs eCommerce strategy, WB Digital Opportunities report)
  - Work with DPs and others to identify sponsors and next steps
3. Flagship ICT event 'DataxPACIFIC'
  - 3-5 day event in Q2 or Q3 2024 (subject to endorsement)
  - Build on momentum generated in PIFS 2050 Strategy Connectivity theme and 2023 Forum ICT Ministers Lagatoi Declaration
  - Focus on partnerships for implementation, platform to highlight DPs significant activities, promote visibility and coordination
  - Opportunity to host in PRIF member country with support of trade agencies
4. Strengthen dissemination of regional guidance on standards, best practices and harmonization
  - Work with DPs and regional SMEs to facilitate and share e.g. model clauses for 'digital by default' in procurement, templates for data sovereignty, privacy and governance frameworks, standardized requirements for critical infrastructure cybersecurity

# Examples of regional interventions (1 of 2)

Various regional interventions have been proposed or are under investigation, requiring varying levels of resource input. Further work is needed to prioritize best prospects for further development.

Intervention	Overview
<b>Workforce strategy for government digital transformation</b>	<p><b>Description:</b> Government resources are often overstretched, and technical and project management skills are often insufficient or in short supply. A regional strategy can promote a better understanding of gaps, and identify capacity building pathways with government, industry and training providers.</p> <p><b>Status:</b> Identified in WB 2022 Pacific Islands Digital Government study</p>
<b>Best practice sharing</b>	<p><b>Description:</b> Sharing of best practices can act as catalysts for regional collaboration. Experience sharing platform(e.g. Pacific Digital Government Idea Hub) could inventory best practices across member countries, raise awareness, support digital government adoption, and encourage diffusion of innovations.</p> <p><b>Status:</b> Identified in WB 2022 Pacific Islands Digital Government study</p>
<b>Regional Project Management Office (PMO)</b>	<p><b>Description:</b> Collaborative digital projects, including shared services, additional workforce and expertise for smaller PICs, and dissemination of best practices could be facilitated through a regional PMO. The PMO could provide services in project development, procurement and implementation.</p> <p><b>Status:</b> Identified in WB 2022 Pacific Islands Digital Government study</p>
<b>Regional CERT</b>	<p>A regional Computer Emergency Response Team (CERT) could facilitate, coordinate and monitor activities related to cyber security to secure fast and effective response to cyber security and threats, beyond the capacity of national resources. Opportunities to pool national CERT resources and build a cyber threat center.</p> <p><b>Status:</b> PacCERT operational from 2011-2014</p>
<b>Shared platforms and services</b>	<p><b>Description:</b> Common gaps and challenges to Digital Government across PICs can be addressed by the adoption of a shared services model, either captive (developed/maintained in-house by governments) and/or outsourced to private service providers.</p> <p><b>Status:</b> Identified in WB 2022 Pacific Islands Digital Government study.</p>
<b>Regional IXP</b>	<p>An Internet traffic exchange located where all service providers from all Pacific nations can interconnect, will help keep inter-island traffic local, greatly reduce latency of inter-island traffic, and free up expensive capacity on the international long-haul connections, reducing costs and improving reliability.</p> <p><b>Status:</b> Under investigation   <b>Key agencies:</b> UNESCAP, USP, CROP ICT WG</p>

Lower input



Higher input

# Examples of regional interventions (2 of 2)

Various regional interventions have been proposed or are under investigation, requiring varying levels of resource input. Further work is needed to prioritize best prospects for further development.

Intervention	Overview
<b>Disaster Risk Management and resilience</b>	<p><b>Description:</b> Benefits of shared services for disaster risk management could include cost effective preparedness and mitigation services, improved responsiveness to disasters through data sharing, and coordination of regional resources for recovery phases. Recent disasters have also highlighted the need for additional redundancy and recovery options in region. Options being looked at include additional submarine links for redundancy, recovery services, and additional satellite broadband.</p> <p><b>Status:</b> Identified in WB 2022 Pacific Islands Digital Government study; ADB SBT for DRM pilot (2015), other donors looking at individual elements e.g. submarine cables</p> <p><b>Key agencies:</b> Pacific Disaster Risk Management Partnership Network (PDRMPN)</p>
<b>Shared platforms and services – to support ecommerce</b>	<p><b>Description:</b> Opportunities could include last-mile connectivity strategy, support for infrastructure components of partnerships for e-commerce platforms, fulfillment centre development, and regional e-commerce marketplace (REM).</p> <p><b>Status:</b> PIFS 2021 Pacific Regional E-commerce strategy and roadmap (ADB update 2023?)</p>
<b>Government (Private) Cloud Infrastructure</b>	<p><b>Description:</b> Private cloud could be used as a foundation for public e-services and solution development, through a managed service agreement for security, efficiency and scalability. Implementation of a government cloud will help integrate the existing siloed IT infrastructure of the government into a shared pool of resources and allow data to be managed centrally.</p> <p><b>Status:</b> Identified in WB 2022 Pacific Islands Digital Government study</p>

Lower input



Higher input

# Appendix:

## Pacific SIDS

# Development Indicators

# SIDS Data Platform: Digital Transformation Development Indicators

- Online Service Indicators ([eGov Survey 2020](#))
- Telecommunications Infrastructure Index ([eGov Survey 2020](#))
- Human Capital Index ([eGov Survey 2020](#))
- E-government Development Index ([eGov Survey 2020](#))
- Cybersecurity Index (ITU [GCI](#), 2020)
- Readiness for Frontier Technologies Index (UNCTAD [2021](#))

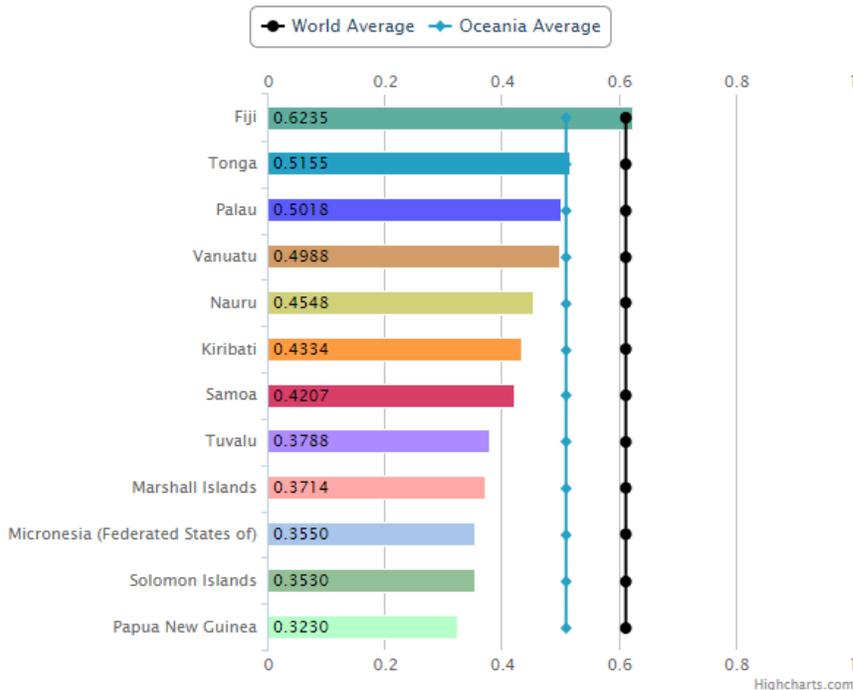


Source: [Development Indicators - UNDP SIDS Data Platform](#)

# E-Government Development Index (2022)

Table **Chart**

2022 E-Government Development Index



Country	Group	Rating Class	Rank 2020	Rank 2022	EGDI 2022	Rank Change	MSG
Fiji	HEGDI	H3	90	97	0.6235	-7	
Tonga	HEGDI	H1	108	124	0.5155	-16	Yes*
Palau	HEGDI	H1	125	132	0.5018	-7	No*
Vanuatu	MEGDI	MH	142	135	0.4988	+7	No*
Nauru	MEGDI	MH	154	139	0.4548	+15	No*
Kiribati	MEGDI	M3	145	148	0.4334	-3	
Samoa	MEGDI	M3	149	152	0.4207	-3	No*
Tuvalu	MEGDI	M3	151	158	0.3788	-7	No*
Marshall Islands	MEGDI	M3	156	160	0.3714	-4	No*
Micronesia (Federated States of)	MEGDI	M2	161	164	0.3550	-3	No*
Solomon Islands	MEGDI	M2	166	165	0.3530	+1	No*
Papua New Guinea	MEGDI	M2	175	170	0.3230	+5	No*

Source: [UN EGOV Knowledge Base](#)

# Digital Development Compass (UNDP)

Showing 14 of 194 countries

Region: Oceania

Settings Disclaimer

Name	Income	Region	Sub-region	Foundations		Infrastructure		Government		Regulation		
Australia	High Income	Oceania	Australia and New Zealand	100%	4.77	100%	2.5	100%	3.53	100%	4.87	100%
Fiji	Upper Middle Income	Oceania	Melanesia	100%	3	100%	1.81	50%	1.4			50%
Kiribati	Lower Middle Income	Oceania	Micronesia	34%	1.78	100%	1.33	50%	1.34			50%
Marshall Islands (the)	Upper Middle Income	Oceania	Micronesia	67%	2.47	100%	1.32	50%	1.2			50%
Micronesia (Federated Stat...	Lower Middle Income	Oceania	Micronesia	67%	2.21	100%	1.23	50%	1.12			50%
Nauru	High income	Oceania	Micronesia	34%	1.89	100%	1.88	50%	1.19			
New Zealand	High income	Oceania	Australia and New Zealand	100%	4.71	100%	2.45	100%	4.24	50%	2.57	100%
Palau	High Income	Oceania	Micronesia	34%	2	100%	1.21	50%	1.09			50%
Papua New Guinea	Lower Middle Income	Oceania	Melanesia	67%	1.43	100%	1.36	50%	1.13			50%
Samoa	Lower Middle Income	Oceania	Polynesia	67%	2.49	100%	1.72	50%	1.29			50%
Solomon Islands	Lower Middle Income	Oceania	Melanesia	67%	2.67	100%	1.37	50%	1.24			50%
Tonga	Upper Middle Income	Oceania	Polynesia	34%	1.96	100%	1.81	50%	1.24			50%
Tuvalu	Upper Middle Income	Oceania	Polynesia	34%	1.75	100%	1.39	50%	1			25%
Vanuatu	Lower Middle Income	Oceania	Melanesia	67%	1.98	100%	1.57	50%	1.45			50%

Source: [UNDP Digital Development Compass | Data](#)

# Digital Transformation DI - FIJ



Source: [Development Indicators - UNDP SIDS Data Platform](#)

# Digital Transformation DI - FSM



Source: [Development Indicators - UNDP SIDS Data Platform](#)

# Digital Transformation DI - KIR



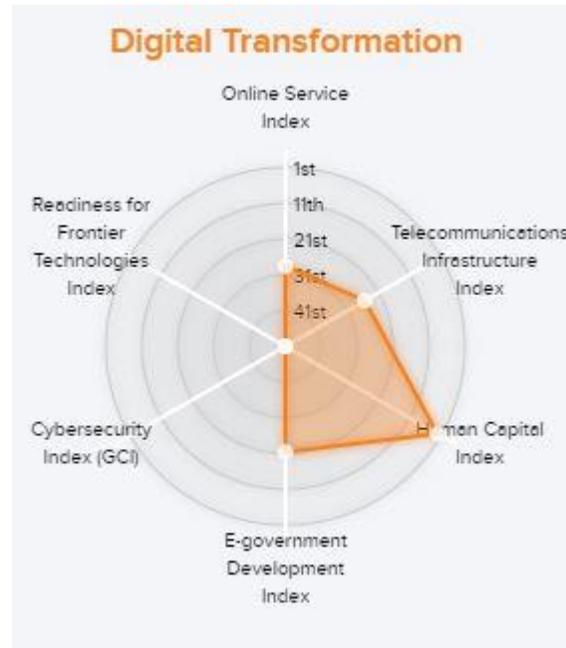
Source: [Development Indicators - UNDP SIDS Data Platform](#)

# Digital Transformation DI - NAU



Source: [Development Indicators - UNDP SIDS Data Platform](#)

# Digital Transformation DI - PAL



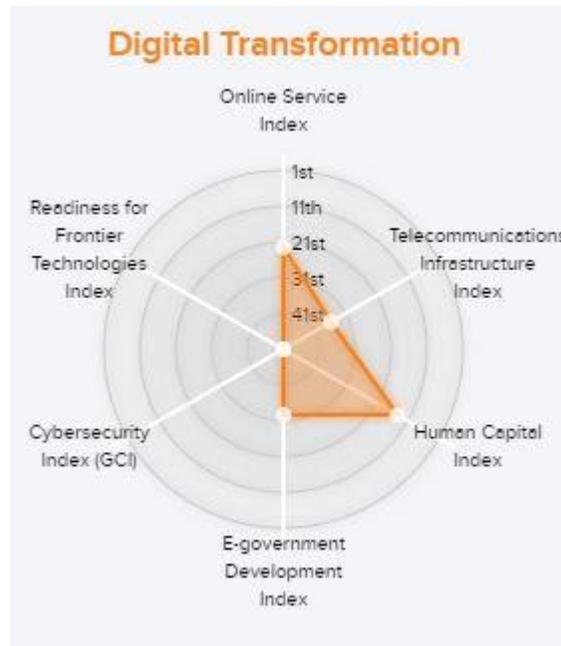
Source: [Development Indicators - UNDP SIDS Data Platform](#)

# Digital Transformation DI - PNG



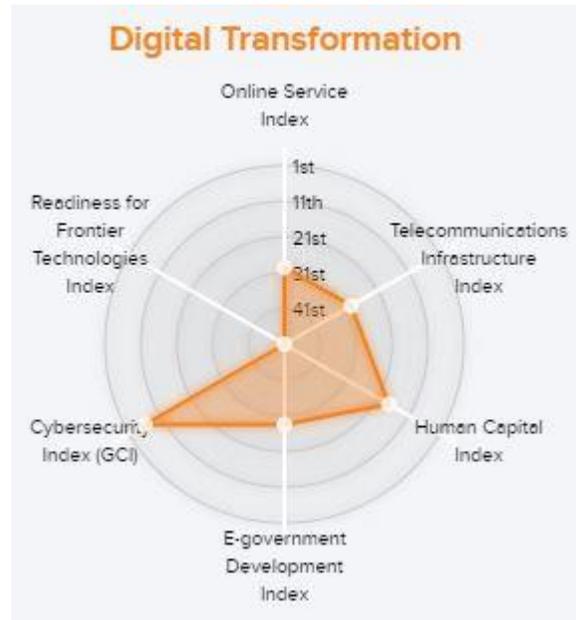
Source: [Development Indicators - UNDP SIDS Data Platform](#)

# Digital Transformation DI - RMI



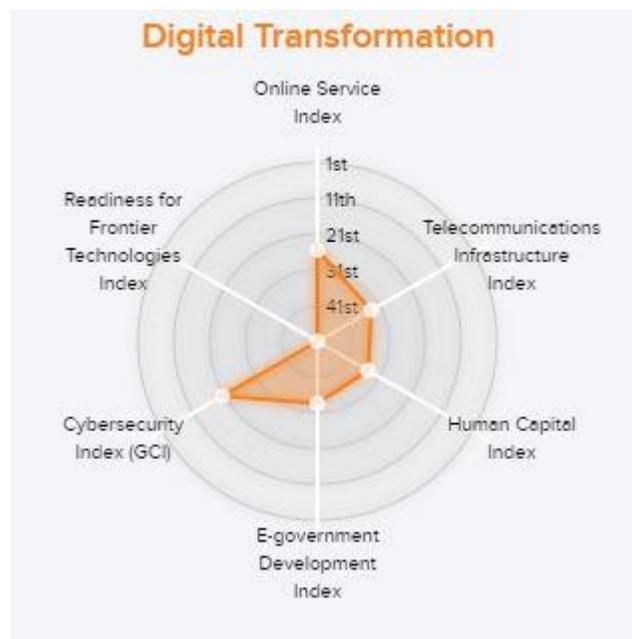
Source: [Development Indicators - UNDP SIDS Data Platform](#)

# Digital Transformation DI - SAM



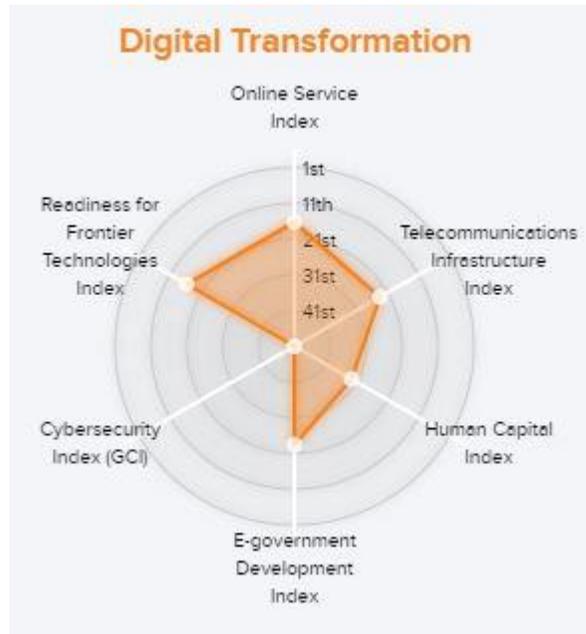
Source: [Development Indicators - UNDP SIDS Data Platform](#)

# Digital Transformation DI - SOL



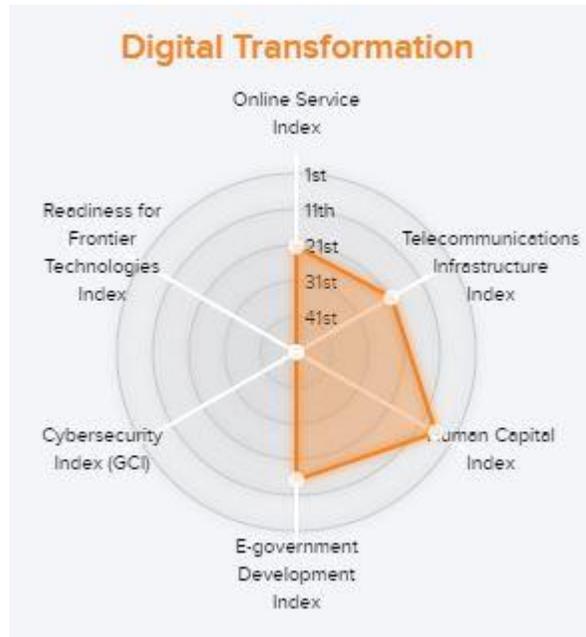
Source: [Development Indicators - UNDP SIDS Data Platform](#)

# Digital Transformation DI - TLE



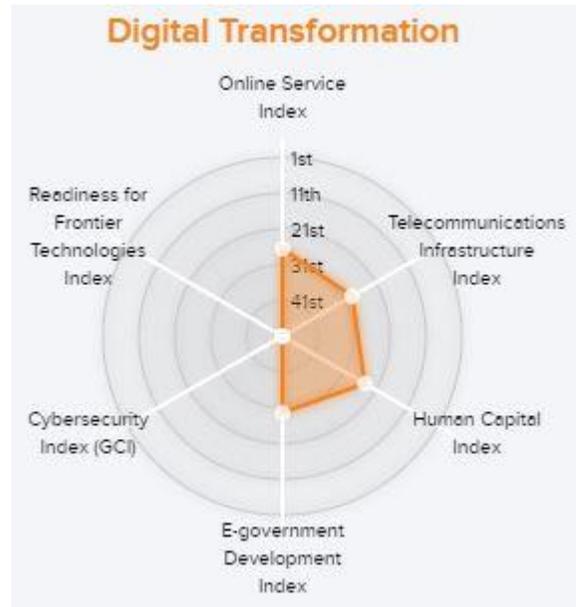
Source: [Development Indicators - UNDP SIDS Data Platform](#)

# Digital Transformation DI - TON



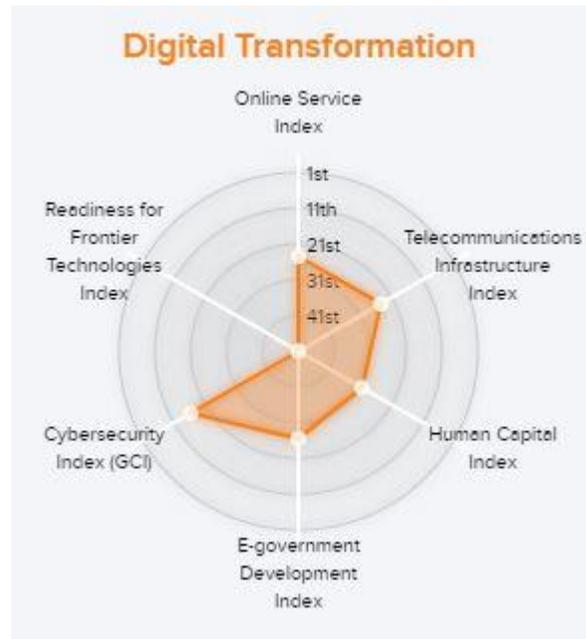
Source: [Development Indicators - UNDP SIDS Data Platform](#)

# Digital Transformation DI - TUV



Source: [Development Indicators - UNDP SIDS Data Platform](#)

# Digital Transformation DI - VAN



Source: [Development Indicators - UNDP SIDS Data Platform](#)

# Appendix:

## ADB & Private Sector Investment

# Private Sector Operations Department (PSOD)

- **PSOD** is responsible for all private sector (or nonsovereign) financing and investments - structuring and funding investments across the capital structure in privately held and state-sponsored enterprises across various industry sectors throughout developing Asia and the Pacific.
- Emphasis is on **commercially viable transactions** that generate acceptable financial returns while also delivering development outcomes on ADB's mandate to promote environmentally sustainable, socially responsible and inclusive economic growth.
- A key objective for PSOD is the **mobilization of official and commercial cofinancing** through ADB-managed trust funds, B-loans, credit enhancement products, and risk transfers.



# Eligible Transactions

- ✓ Located in and/or directly benefits ADB's developing member countries
- ✓ ADB's target sectors (infrastructure, financial sector, agribusiness, etc.) and themes (climate change, inclusive business, etc.)
- ✓ Developmentally and commercially sound, with a clear business plan
- ✓ Financing not directly guaranteed by the government
- ✓ Clear financing or other need (safeguard support, risk coverage, etc.) from ADB
- ✓ Willing to employ professional advisors (legal, technical, environment and social, etc.)
- ✓ For equity investments, a board seat for ADB and clear exit strategy



High demonstrational value and replicability



Innovative (new technologies or ways of doing business)



Highest integrity and ethical standards



Crowding in commercial financing

## ***ADB Additionalities***

- ✓ Financial, including (i) various products from debt to equity, credit enhancement and risk mitigation, (ii) local currencies, and (iii) longer tenors and patient investor
- ✓ Non-financial, including (i) stamp of approval, (ii) country risk mitigation, neutral broker role with governments, (iii) safeguard and corporate governance expertise, and (iv) extensive knowledge of markets, sectors, and clients

# Products

Instrument	Typical Size	Typical terms	When is it relevant?
Debt	\$20M - \$500M	<ul style="list-style-type: none"> <li>• 7 years (corporate) to 15+ years (project)</li> <li>• LIBOR / ADB cost of funds in local currency + credit spread</li> <li>• Secured or unsecured</li> </ul>	<ul style="list-style-type: none"> <li>• Established company with large balance sheet, strong cash flow</li> <li>• Possibility to mobilize co-financing under B-loan or risk participation</li> </ul>
Equity	\$2M - \$100M	<ul style="list-style-type: none"> <li>• 25% ownership maximum</li> <li>• Board seat, Advisory Committee seat</li> <li>• Minority protection rights</li> <li>• Put on the parent company</li> </ul>	<ul style="list-style-type: none"> <li>• Direct: growth companies at any stage through IPO (cornerstone or anchor investment)</li> <li>• PEF: single, multi-sector, country and regional funds</li> <li>• ADB Ventures: early-stage companies focused on new technologies</li> </ul>
Guarantees	\$20M - \$500M	<ul style="list-style-type: none"> <li>• Partial credit guarantees (PCG): market-based, fees based off lenders' margin</li> <li>• Political risk guarantees (PRG): market-based, fees based off reinsurance market</li> </ul>	<ul style="list-style-type: none"> <li>• Where other lenders are more efficient than ADB in mobilizing local currency, or reaching target customers (PCG)</li> <li>• In frontier markets (PRG)</li> </ul>
Blended Finance (BF)	\$5M - \$20M	<ul style="list-style-type: none"> <li>• Lower pricing, longer grace periods and/or tenors, subordination, sculpted repayment profiles, reduced security and/or collateral, and/or capped or collared returns</li> </ul>	<ul style="list-style-type: none"> <li>• When transactions demonstrate strong rationale for BF and adherence to DFI-agreed principles – additionality, crowding-in, commercial sustainability, reinforcing markets, promoting high standards</li> </ul>
Technical Assistance	\$0.5M - \$1M	<ul style="list-style-type: none"> <li>• For project preparation TA, reimbursable at closing</li> <li>• For capacity development TA, non-reimbursable grant</li> </ul>	<ul style="list-style-type: none"> <li>• Enhance corporate governance, environmental and social standards, risk management, gender mainstreaming, etc.</li> <li>• Develop new products for underserved segments</li> </ul>

# ADB Ventures

ADB VENTURES

Portfolio

Team

Impact

News & Insights

ADB

WE INVEST TO SCALE UP CLIMATE SOLUTIONS  
IN EMERGING ASIA

We back bold technology startups with solutions that transform lives and impact society. And we remain their long-term partners.



VC FUND



SEED



# Private Sector Financing: Products & Services; and The ADB Frontier Facility

**Private Sector Financing**

ADB focuses on projects that help promote private investments in the region that will have significant development impact and will lead to accelerated, sustainable, and inclusive growth.

Home Products and Services Focus Areas Partner with Us Projects Knowledge

Home > What We Do > Private Sector Financing > Partner with Us > ADB Frontier

Jump to: [Investment Thesis](#) [Our Team](#) [Knowledge Library](#)

- Financial Products
- Loan Syndications and Commercial Cofinancing
- Guarantees
- Microfinance Program
- Trade and Supply Chain Finance Program
- LIBOR Transition



## The ADB Frontier Facility

Frontier-market gazelle companies<sup>1</sup> are starved for risk capital. ADB Frontier is a next-generation ADB facility designed to:

- Invest in fast-growing gazelle SMEs operating in small frontier markets, including SMEs in the agrifood, light manufacturing, and tourism industries.<sup>2</sup>
- Crowd-in private capital, multinational companies, and business expertise to help gazelle companies grow and integrate into regional supply chains.
- Invest with a gender and climate lens.
- Catalyze new industries, digital transformation, employment, and economic growth.

Contact us

# Appendix:

## ADB, Partnerships & Working for Us

## Financing Partnerships

ADB and its financing partners pool financial resources, share the risks involved, and combine knowledge and technical expertise in planning and implementing development programs or projects.

Home

In-Depth ▾

Knowledge ▾



- ADB partners with international development agencies, nongovernment or civil society organizations, philanthropies, multilateral and bilateral institutions, the private sector, and other emerging development partners. These financing partners provide cofinancing through contributions to projects and trust funds.
- **Bilateral Donors**
  - ✓ ADB works with a wide range of bilateral donors—government organizations that give direct assistance to a recipient country for development purposes—within and outside the Asia and Pacific region.
- **Multilateral Organizations**
  - ✓ ADB partners with organizations or institutions established or chartered by more than one country to provide financial support and professional advice for economic and social development activities in developing countries.
- **Other Partners**
  - ✓ ADB works with other partners through concessional or commercial cofinancing, including partners from the private sector, with corporate social responsibility and philanthropic trusts.

## Contacts

[📧 General Inquiries: Financing Partnerships](#)

### Financing Partners Relationship Managers

The **Strategic Partnerships Division** manages partnerships and establishes cofinancing relationships with partners.

[📧 Send an inquiry](#)

The **Partner Funds Division** administers single-donor trust funds, project-specific cofinancing, and global funding initiatives.

[📧 Send an inquiry](#)

### Funds Administered by ADB

[See the list](#)



### Partnership Reports

[See the list](#)



# Operational Procurement

ADB procures goods, works, and services from external suppliers for its development projects and programs, and engages consultants to help prepare studies, appraisals, and reports.

Home

Goods, Works, and Non-Consulting Services ▾

Consulting Services ▾

Procurement Statistics



- The Procurement, Portfolio and Financial Management Department (PPFD) provides fiduciary oversight of procurement of goods, works, non-consulting and consulting services. PPFD supports ADB staff and borrowers on procurement planning and implementation, contract management, and related risk assessment and mitigation throughout the project life cycle. It also leads procurement and consulting services innovation and capacity building initiatives



## Goods, Works, and Non-Consulting Services

ADB extends loans and provides technical assistance to its developing member countries for a broad range of development projects and programs involving the procurement of goods, works, and services.



## Consulting Services

ADB engages individual consultants and consulting entities to provide expert advice such as in contract preparation and project supervision, and to help ADB to prepare studies, appraisals, and reports.



## Projects and Tenders

See the list of ongoing and future procurement of goods, works, non-consulting, and consulting services.



## Consultant Management System (CMS)

Get detailed information on consulting services requirements and send expression of interests for ADB-financed or administered projects.



## Complaints

Submit a complaint on a procurement or consulting process.



## ADB Business Center

Guidance for individuals and companies seeking consulting, project procurement and other business opportunities with ADB.

## Careers at ADB

With employees from more than 60 countries, ADB is a place of real diversity. Join us to find fulfillment in sharing your knowledge and skills, and be a part of our vision in achieving a prosperous, inclusive, resilient, and sustainable Asia and the Pacific.

Main

Opportunities ▾

What We Look For

What We Offer ▾

Other Programs ▾

FAQs

Contacts

- At ADB, our professionals from various areas of expertise embark on a quest for opportunities for inclusive economic growth, environmentally sustainable growth, and regional integration. Join us to find fulfillment in sharing your knowledge and skills, and be a part of our vision of achieving a prosperous, inclusive, resilient, and sustainable Asia and the Pacific.
- With employees from more than 60 countries, ADB is a place of real diversity. At ADB we want to create an inclusive work environment where all forms of diversity are respected and valued. We embrace diversity and inclusion, regardless of gender, age, nationality, ethnic origin and race, religion, sexual orientation and gender identity, physical ability, and thinking style. Every staff member is unique and counts. You can help us make the region a better place. Women are encouraged to apply.



### ADB Career and Employment System

Applications for vacancies are received through the ADB Career and Employment System (ACES). ACES facilitates the submission of applications, and enables applicants to check the status of their applications on ADB's website. You will need to create an account before making any submissions.

# Appendix:

## ADB

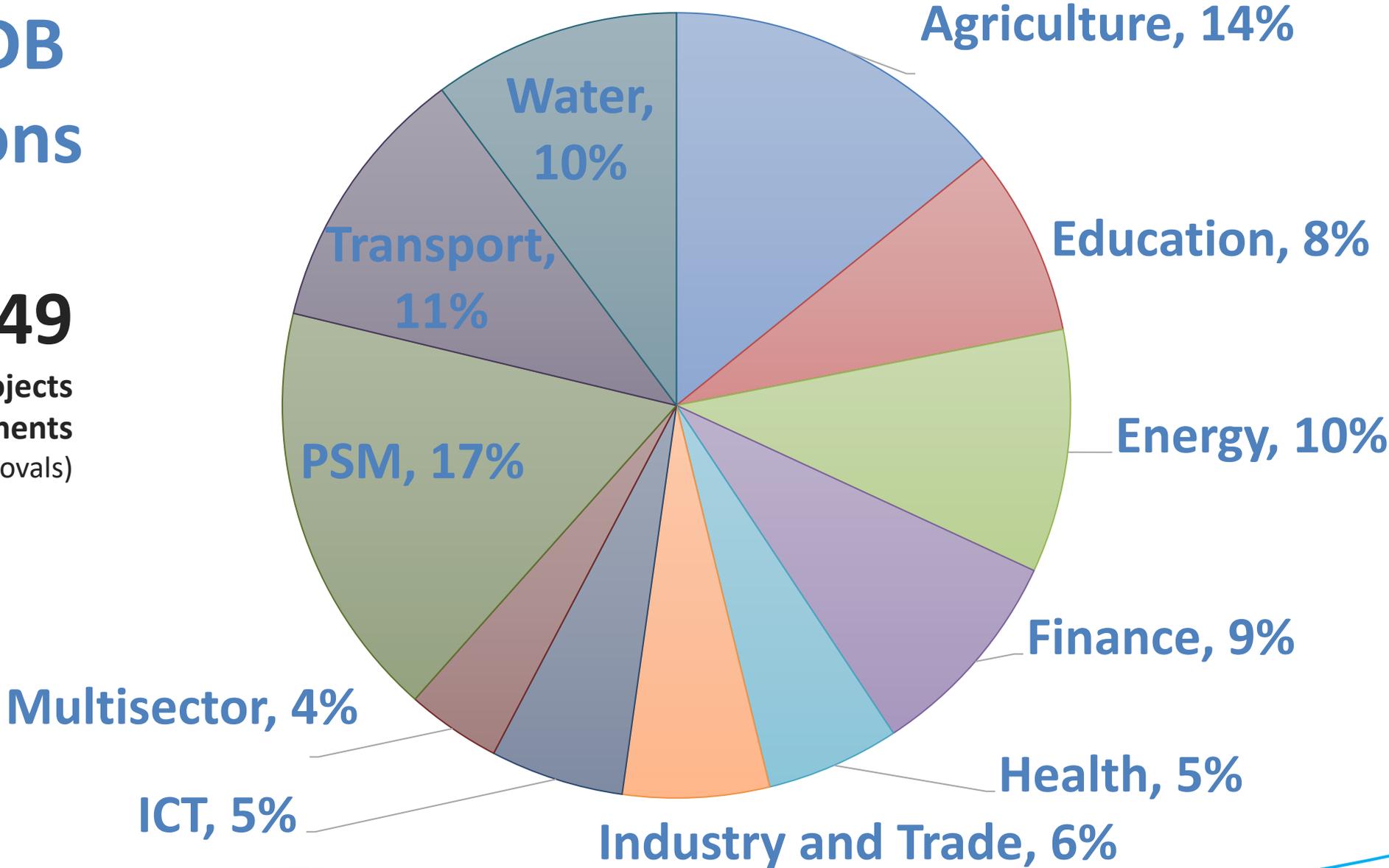
# Completed, Ongoing & Pipeline Pacific Technical Assistance & Projects

# with Digital Technology components

# DT in ADB Operations

**749**

Total Projects  
with DT Components  
(2010-2022 Approvals)



## Pacific DT: Completed (circa 2017 onwards)

- COO
  - ✓ Submarine Cable Project ([50110-001](#))
  - ✓ e-Government assessment ([50409-002](#))
  - ✓ National ICT Policy ([50409-003](#))
- FIJ
  - ✓ iTaukei Land Trust Board Digital Platform ([49049-001](#))
- KIR
- FSM
  - ✓ Strengthening Social Protection ([53371-001](#))
    - Social Registry High-Level Design
- NAU
- NIU
- PAL
  - ✓ e-Gov assessment ([50409-002](#))
- PNG
  - ✓ Regional: Strengthening Financial Sector Operations in Asia and the Pacific (SDCC-DT) ([50374-001](#) TA 9364)
    - PNG Digital Access Tool pilot ([Digizen](#))
- RMI
- SAM
  - ✓ Submarine Cable Project ([47320-001](#))
  - ✓ Supporting Finance Sector and Private Sector Development in the Pacific (eKYC pilot) ([50396-001](#))
  - ✓ Cybersecurity Actionable Risk Management Framework Toolkit (ARMF) ([50409-002](#))
- SOL
- TON
  - ✓ Submarine Cable Project ([44172-022](#))
  - ✓ e-Gov HealthIS ([50409-002](#))
- TUV
- VAN
  - ✓ Supporting Finance Sector and Private Sector Development in the Pacific (eKYC pilot) ([50396-001](#))
- REG
  - ✓ Regional Pacific eKYC Project ([South Pacific Central Bank Governors Committed to Cost Effective Remittances | Media Releases | RBA](#)) (June 2023)
  - ✓ Workshop on Effective Legal Frameworks for Building the Digital Economy (ADB, CommSec/PIF/UNCTAD) ([52357-001](#))

## Pacific DT: Ongoing

- COO
- FIJ
  - ✓ Supporting Public Financial Management Reform([50378-001](#))
    - Application Software for Budget Preparation & Reporting
  - ✓ ITU [Smart Islands](#) Pacific Program ([50409-002](#))
  - ✓ Pacific Micro, small and Medium-sized Enterprises Finance Project ([54257-001](#))
  - ✓ Digital Development Facility for APAC ([53116-001](#))
    - Scoping support for Fiji Titles Deeds Information System
- KIR
  - ✓ Submarine Cable (Kiritimati Island) ([50348-001](#))
- FSM
- NAU
  - ✓ Social Protection ID ([52012-001](#))

## Pacific DT: Ongoing

- NIU
- PAL
  - ✓ Submarine Cable Project ([46382-001](#))
- PNG
  - ✓ ITU [Smart Islands](#) Pacific Program ([50409-002](#))
  - ✓ Regional : Strengthening the Asia Pacific Public Electronic Procurement Network (Phase 2) ([52109-002](#))
- RMI
- SAM
  - ✓ Pacific Micro, Small and Medium-sized Enterprises Finance Project ([54257-001](#))

## Pacific DT: Ongoing

- **SOL**
  - ✓ Pacific Micro, Small and Medium-sized Enterprises Finance Project ([54257-001](#))
- **TON**
  - ✓ Introducing eGovernment through Digital Health ([50281-001](#))
  - ✓ Pacific Micro, Small and Medium-sized Enterprises Finance Project ([54257-001](#))
  - ✓ Empowering Developing Member Countries to Use Multispectral Satellite Images and Artificial Intelligence for Land Use and Coastal Planning ([54321-001](#))
    - Supporting Regional: Pacific Disaster Resilience Program ([50028-001](#))
- **TUV**
- **VAN**
  - ✓ Supporting Finance Sector and Private Sector Development in the Pacific (eKYC pilot) ([50396-001](#) TA-9340)
  - ✓ Pacific Micro, Small and Medium-sized Enterprises Finance Project ([54257-001](#))
- **Regional**
  - ✓ Strengthening Education in the Pacific Region ([52183-001](#))
    - Regional repository and learning management platform for open, distance, and flexible learning
  - ✓ Expanding Connectivity & Affordability to Address the Digital Divide (SDCC-DT) ([55355-001](#))

# Pacific DT: Pipeline & Potential

- **COO**
  - ✓ E-Commerce (anticipated)
- **FIJ**
  - ✓ Application Software for Budget Preparation and Reporting ([50378-001](#))
  - ✓ ITU [Smart Islands](#) Pacific Program ([50409-002](#))
  - ✓ Supporting Recovery by Micro, Small, and Medium-Sized Enterprises in the Pacific from the Effects of the COVID-19 Pandemic ([54257-001](#))
    - a pilot dashboard of information relevant to MSMEs
- **KIR**
- **FSM**
  - ✓ Social Registry Implementation (TBD)
- **NAU**
  - ✓ Digital Finance Nauru (ID, e-Government, Public Digital Infrastructure, etc.) (2027)
  - ✓ Social Protection Program (57002-001) (2025)
    - Includes proposed Social Protection platform

## Pacific DT: Pipeline & Potential

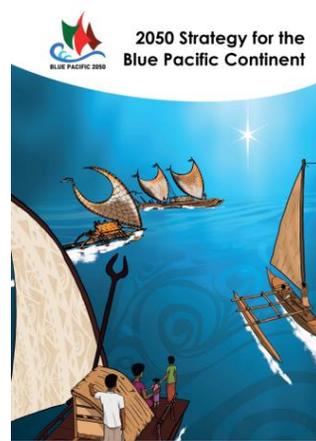
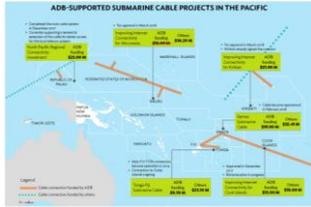
- NIU
- PAL
  - ✓ E-Government project(s) (TBD)
- PNG
  - ✓ Improving Financial Access and Entrepreneurship Development Project (IFAED) ([53097-001](#))
- RMI
- SAM
  - ✓ Digital Health (TBD)

## Pacific DT: Pipeline & Potential

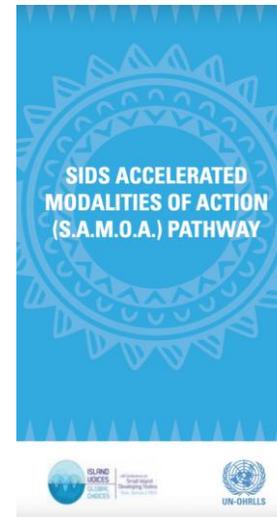
- **SOL**
  - ✓ Preparing the Strengthening Urban Health Services Project ([53085-002](#))
- **TON**
- **TUV**
- **VAN**
- **Regional**
  - ✓ Improving Finance Sector Know Your Customer Capacity in the Pacific ([56037-001](#))
  - ✓ Digital Development Facility for APAC Phase 2 (58026-001)
  - ✓ Support to Capacity Building and Implementation for Cybersecurity in DMCs (58029-001)
  - ✓ Workshop on Managing Customary Lands using Blockchain Technology
  - ✓ Global Commonwealth Conference on Addressing Cybercrime (Pacific Host, 2024) (CommSec, ADB?) (TBD)

# 2024 & Beyond– DT in the Pacific Region

- Connectivity
  - Regional
    - Post Submarine cable
  - National
    - Middle/last, remote
    - Regulators vs. Starlink
- Cybersecurity
  - Internet Governance & Impact on eCommerce
  - Finance Sector (ADB)
- Digital Public Infrastructure
  - Digital ID
  - e-Government ([GovStack](#))
  - Data Center v. Cloud
- Legislation
- Capacity Issues (Government)
- Digital Citizen (Social Media / Phishing/AI...)



Boe Declaration on Regional Security



## Project Preparation

- Digital Finance (2027)

## Digital Public Infrastructure

- FIJ (ADB FIN), NAU, SAM/COO

## Cybersecurity (Finance Sector)

- SAM, PNG, FIJ (ADB FIN)

## e-Education

- Regional ODFL platform

## Ongoing & new "Partnerships"

- ITU Smart Islands
- UNDP, ITU, CommSec, CTO

Fiji (24-28) & PNG (25-29) CPS, PIC-12 ('25) other PARD CMTs

## PRIF ICT Working Group

- Blue Pacific "DataX" event
- Concept Notes for Regional projects

One ADB CCSD Opportunities: Blue Pacific, ICT for DRM, Resilience Assessments, RPACA, etc.

# Operations Support – Peter Nicholls

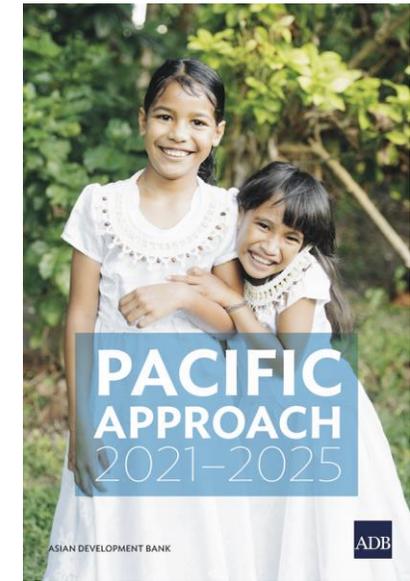
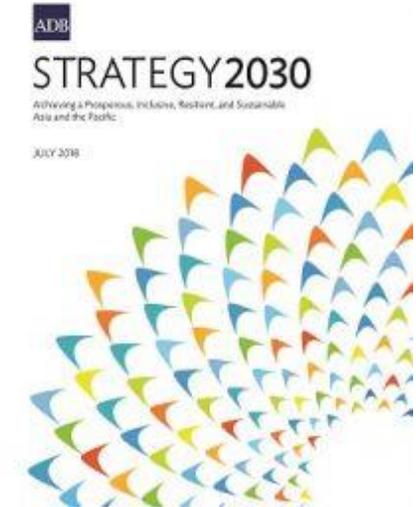
Title	DMC / REG	Sector	Role
Digital Finance Nauru	NAU ( <i>pipeline 2027</i> )	TBD / ICT	Co-Lead
Pacific Information and Communication Technology Investment Planning and Capacity Development Facility- Phase 2	<a href="#">REG TA 50409</a> (PARD) (Closes Dec 2024)	ICT	Lead
Pacific Region Infrastructure Facility Coordination Office—For Quality, Climate, and Socioeconomic Resilient Infrastructure	<a href="#">REG TA 57124</a> (PRIF)	Various / ICT	Member, Impl. support
Strengthening Education in the Pacific Region	<a href="#">REG 52183</a>	EDU	Member
Improved Technical and Vocational Education and Training for Employment Project	<a href="#">PNG 53083</a>	EDU	Member
Supporting Finance Sector and Private Sector Development in the Pacific	<a href="#">REG 50396</a> (PARD) (Closed June 24)	FIN	Member, Impl. Support
Expanding Development Bank Financing of Micro, Small, and Medium-Sized Enterprises in the Pacific	<a href="#">REG 51142</a>	FIN	Member
Enhancing ADB's Support for Social Protection to Achieve the Sustainable Development Goals	<a href="#">REG 52012</a>	PSM	Impl. support
Digital Development Facility for Asia and the Pacific ( <i>and Phase 2, processing</i> )	<a href="#">REG TA 53116</a> <a href="#">REG TA 58026</a> ( <i>new</i> )	PSM	Member
Improved Skills and Employment for Vulnerable Groups	NAU 57022 ( <i>pipeline 2025</i> )	PSM	Member
Regional : Strengthening the Asia Pacific Public Electronic Procurement Network (Phase 2)	<a href="#">REG 52109-002</a> (PNG)	Multi	Advice

# Appendix:

## ADB Additional Resources & Contact Us

# Additional ADB & ADB Pacific Resources

- [ADB Homepage](#)
  - ✓ [ADB Strategy 2030](#)
  - ✓ [Pacific Approach, 2021-2025](#)
  - ✓ [Fiji CPS \(2019-2023\)](#)
  - ✓ [PNG CPS \(2021-2025\)](#)
- [Pacific Liaison and Coordination Office \(PLCO\)](#)
  - [Nauru, Solomon Islands & Vanuatu](#)
- [Pacific Subregional Office \(SPSO\)](#)
  - [Cook Islands, Fiji, Kiribati, Niue, Samoa, Tonga, Tuvalu](#)
  - [Federated States of Micronesia, Marshall Islands, Palau, Papua New Guinea](#)
  - ✓ [Country Strategies & Business Plans](#)
  - ✓ [Eleven \(11\) Small Pacific Island Countries \(PIC-11\): Country Operations Business Plan \(2021–2023\)](#)
  - ✓ [ADB Generally Endorses New Strategy for Pacific Small Island Developing States](#)
- [ADB Focus on Social Development & Poverty](#)
- [Digital Technology in Asia and the Pacific](#)
- [ADB Knowledge Base](#)
- [ADB Data Library](#)
- [ADB Social Media Hub](#)

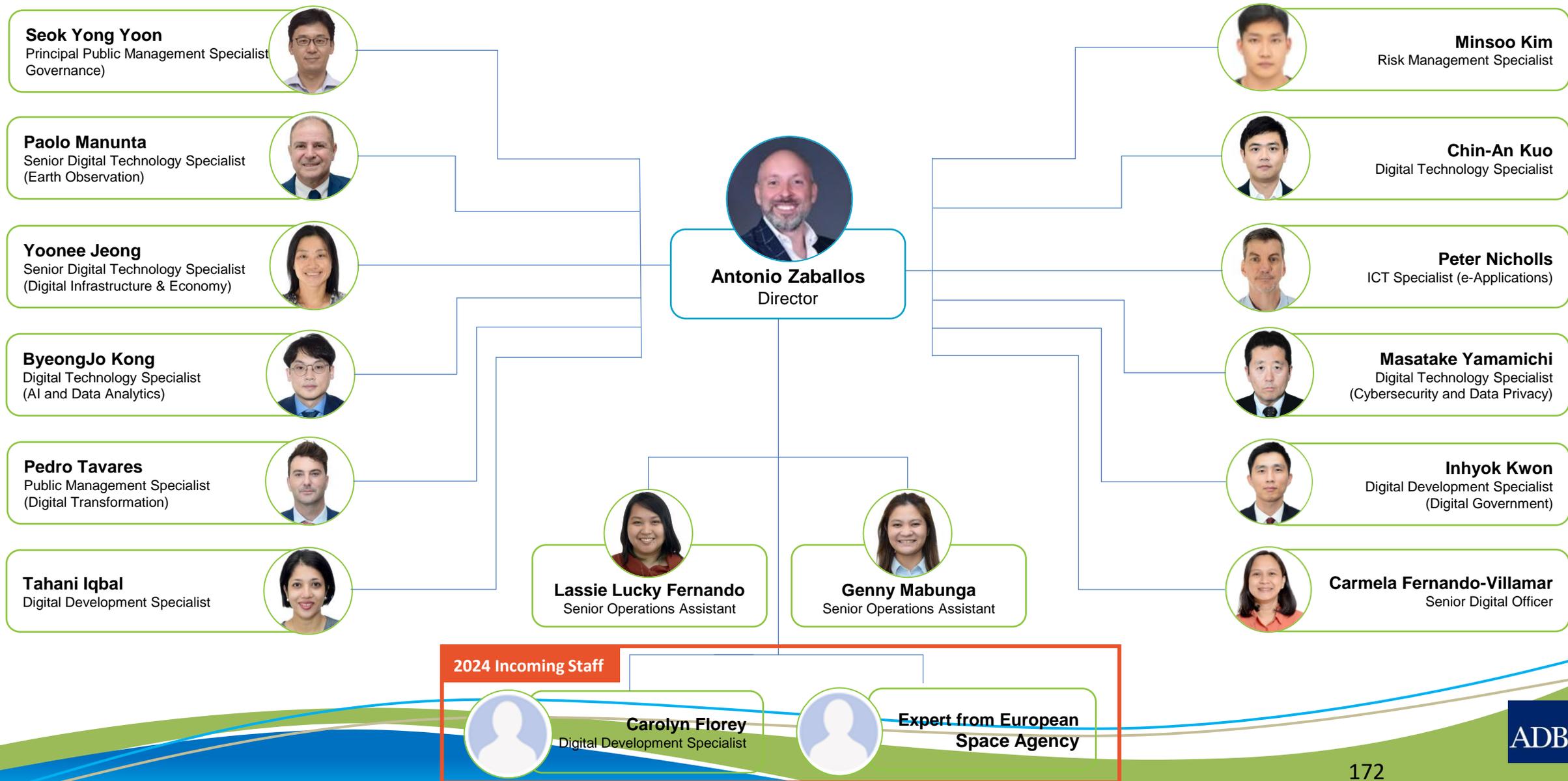


# Requests for Information

- Requests for information may be sent to ADB through (i) the [online request form](#), (ii) [e-mail contact forms of staff](#), (iii) staff e-mail addresses, and (iv) mail or fax. Requests may be directed to ADB headquarters, a resident mission, a representative office, or any ADB department or office.
- ADB acknowledges requests within 7 calendar days of receipt and responds within 30 calendar days of receipt. It either provides the requested information or the reason(s) why the request has been denied, indicating the exception(s) to disclosure in the [Access to Information Policy \(AIP\)](#). The requester has the right to appeal denied requests in accordance with the appeals process.
- ADB will inform the requester if it uses the prerogative under paragraph 6 (positive override) or paragraph 7 (negative override) of the AIP. It will also notify the requester of any extension, if needed.
- For complex requests—which include seeking information from multiple sources and/or large numbers of documents, collecting information over multiple years, collating and correlating raw data, and providing findings—ADB may ask the requester for an extension to the deadline for responding.
- ADB is not required to comply with or respond to generic requests or any request that would require ADB to create, develop, or collate information or data that do not already exist or are not available in its records management system.
- It is also not required to respond to requests for information on the same subject from the same person, organization, or group if ADB has already provided such information after a previous request or has given reasons why it cannot provide the information.

Source: [Requests for Information | Asian Development Bank \(adb.org\)](#)

# Digital Technology for Development Division – Team Composition



# About Peter



- Mr. **Peter Nicholls** has worked for the Asian Development Bank ([ADB](#)) since 2020 as an ICT Specialist (e-Applications) for the Digital Technology for Development Division with a focus on the [Pacific](#), supporting [Digital Technology](#) initiatives in regional and country-specific initiatives, including ICT policy development, FinTech, e-Education, e-Health, and social protection.
- He worked for a decade with the United Nations Economic Commissions, including seven years as Chief of the [Caribbean Knowledge Management Centre](#), responsible for delivering the [ICT for Development and Knowledge Management work program](#) for Caribbean Small Island Developing States (SIDS), with a focus on e-Government, ICT for Disaster Risk Management; and [Digital Financial Services](#).
- Before joining the UN, Peter worked for seven years with [Queensland Health](#) in various ICT Operations and Project roles.
- Peter has a Bachelor of Science ([Chemistry](#)) (University of Queensland, UQ) and a Masters in [Information Technology](#) (Queensland University of Technology, QUT);
- Numerous project, program, IT Service Management & [Knowledge Services](#) certifications; &
- Is a member of the:
  - Australian Computer Society ([ACS](#));
  - Australian Institute of Project Management ([AIPM](#));
  - Australian Information Industry Association ([AIIA](#));
  - Project Management Institute ([PMI](#)); and
  - [ISACA](#) (formerly Information Systems Audit and Control Association).
- [Nicholls, Peter | Asian Development Bank \(adb.org\)](#)
- <https://www.linkedin.com/in/peter-nicholls-ict>