

A close-up photograph of a young child with dark hair drinking water from a public tap. The child's hands are cupped around the tap, and water is splashing down. The background is blurred, showing green foliage. The image is framed by a blue border at the top and bottom.

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FINANCING WATER, SANITATION & HYGIENE IN THE PACIFIC

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PREFACE

The Pacific Island Countries and Territories (PICTs) have made some strides in expanding access to safe and reliable water, sanitation, and hygiene (WASH) services over the last decade, but it's not enough. The Sustainable Development Goals (SDGs) mandate safe water and sanitation services for all by 2030, and we must act now to make that happen.

This report is a call to action. It outlines the current state of WASH financing in the region and highlights the need for increased investment in the sector. We must bridge the funding gaps and invest in the WASH sector if we want to make significant progress towards achieving the SDGs.

The report provides critical insights into the amount and composition of WASH funding, returns on investment, and funding sources in the PICTs. It reveals that only US\$230–270 million is spent on WASH each year across the 14 PICTs, which is equivalent to around US\$90–110 per person per year. WASH expenditure accounts for only 2.3 per cent of the gross domestic product and is heavily skewed towards water services, leaving the sanitation sector underfunded.

It is evident that achieving the SDGs by 2030 will not be possible unless there is a substantial investment in the WASH sector. If we continue on our current path, it is unlikely that universal access to basic sanitation will be achieved until the next century. Additional funding is therefore crucial to develop the necessary infrastructure and services for those who are currently underserved. It is also important to enhance the existing infrastructure and services, and to maintain high-quality services to prevent regression. Moreover, strengthening the supportive environments that underpin these services is essential.

UNICEF is committed to improving the lives of children and their families in the Pacific region and beyond. We recognise the critical importance of WASH in mitigating and adapting to climate change and dealing with the consequences of damage and loss. Investing in WASH not only improves access to essential services but also generates significant returns on investment for nations, communities, households, and individuals.

We are grateful to everyone involved in the development of this report, and we hope that it will drive positive change in the Pacific region and beyond. It is a valuable resource for all those who work to improve the lives of children and families in the Pacific. Let's come together and work towards a future where every child has access to a clean and healthy living environment.



Jonathan Veitch
Representative,
UNICEF Pacific





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KEY MESSAGES



Amount of WASH funding

- **Approximately US\$230–270m is spent on water, sanitation and hygiene (WASH) each year** across 14 Pacific Island Countries, equivalent to around US\$90–110 per person per year.
- **WASH spending drops to US\$90–120 million per year**, or US\$55–80 per person per year when Fiji is excluded.
- Annual WASH expenditure is between **US\$20 and US\$150 per person** in most countries.
- Overall, WASH expenditure accounts for **2.3% of gross domestic product** (GDP; range 0.4%–4.1%).
- Donor and public funding for WASH peaked in 2018, but there was a **significant drop in donor funding in 2020**.
- **Donor funding for WASH does not always correlate with need.** The two countries with the greatest access to at least basic services in 2011 have since received the highest levels of donor funding for WASH per capita. In contrast, the four countries with the lowest levels of access to basic services were ranked 5th, 10th, 11th, and 13th in terms of donor funding for WASH.
- The WASH sectors in the **Solomon Islands and Vanuatu were the most severely underfunded** relative to need.
- **Expenditure on solid waste management is around US\$8–12 million per year** (US\$3–5 per capita), although donor funding directed to waste management and disposal appears to be increasing, and has trebled since 2017.

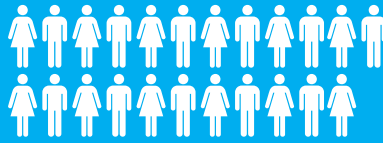


Returns on investment

- For every million dollars spent on WASH by governments and donors in the Pacific in 2016–2020, around **120-130 people have been connected to a piped water or sewerage network** and 320-340 people have gained access to a basic water or sanitation service.

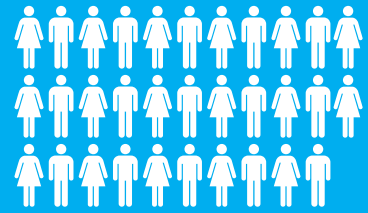
\$850m

Spent on WASH by governments and donors in the Pacific in 2016–2020



120–130 people

Connected to a piped water or sewerage network per million dollars of expenditure by governments and donors



320–340 people

Access to a basic water or sanitation service per million dollars of expenditure by governments and donors



Sources of WASH funding

- **Around 50%-55% of WASH funding in the Pacific comes from domestic governments** and 20%-25% from donors.
- **The majority of donor funding for WASH is in the form of grants (80%),** with 20% in the form of loans.
- **Around a quarter of WASH spending is by end-users,** predominantly as fee-paying customers of urban utilities.
- In all countries, the average household expenditure on water and sanitation services is **less than 5% of the total household expenditure.**
- **When Fiji is excluded, donors and households become the major sources of WASH funding** (45%–55% and 35%–45%, respectively), with 10%–15% coming from domestic governments.
- In 2011–2020, the European Union (27%), the Asian Development Bank (24%), and Japan (17%) were the **largest contributors to WASH in the region,** followed by Australia (11%) and New Zealand (11%).
- **Funding for waste management** largely derives from donors and domestic governments (40%–45% each), with household contributions amounting to only 5%–10%.
- When Fiji is excluded, **donor funds amount to 60%–65% of spending on waste management,** with domestic government contributions dropping to 25%–30%.



Composition of WASH funding

- **WASH funding is skewed towards water services,** even though the number of people lacking basic sanitation is double the number lacking a basic water supply.
- **Donor funding for WASH is evenly spread** across large water and sanitation systems, basic water and sanitation systems, and policy and administration.

1. INTRODUCTION



Cover photo: UNICEFPacific

1. INTRODUCTION continued

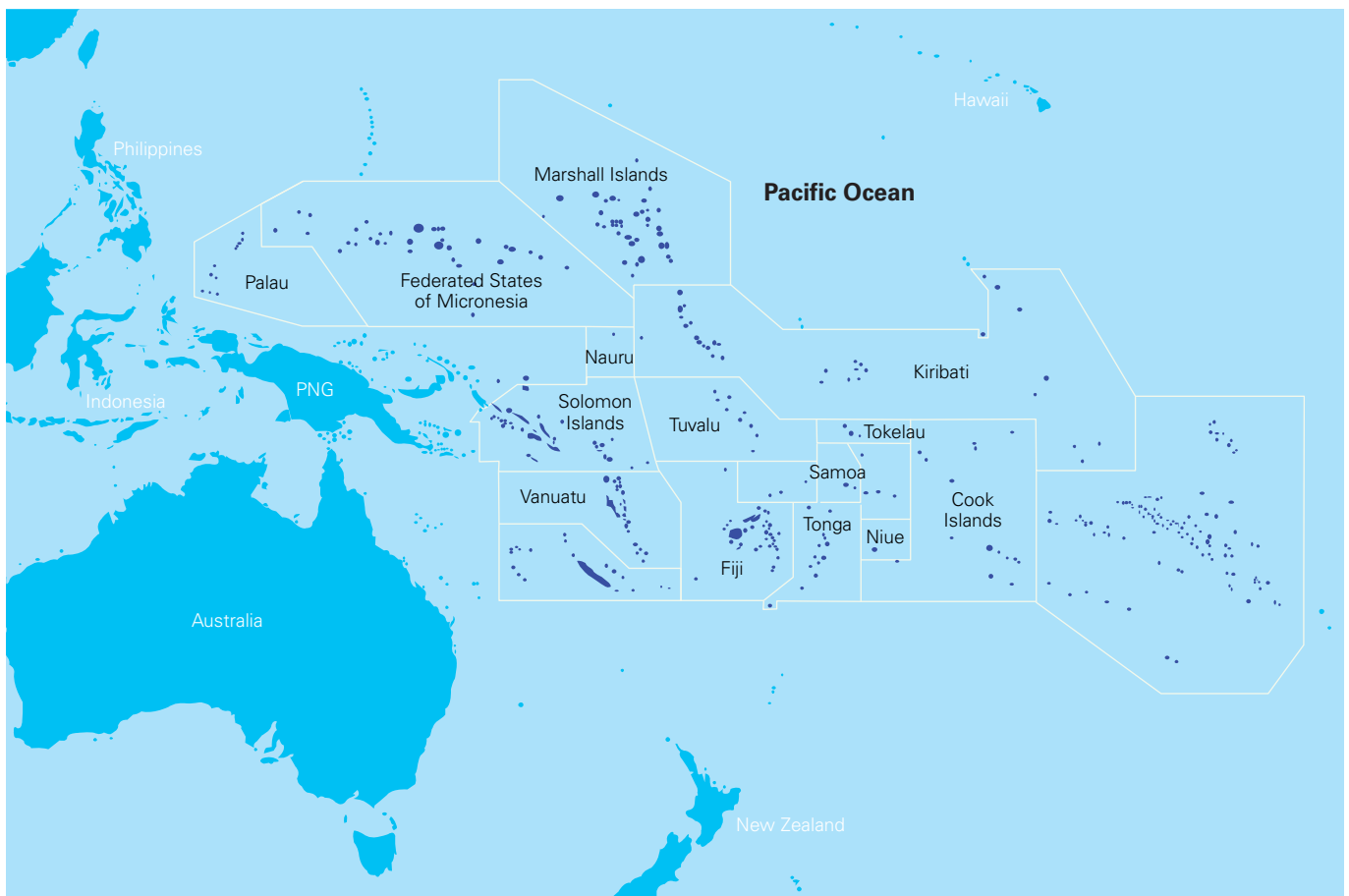
This landscaping study provides an overview of funding for water, sanitation and hygiene (WASH) funding in 14 Pacific Island Countries (excluding Papua New Guinea) (Figure 1).

The report focuses on the 14 Pacific Island Countries and Territories in which the UNICEF Pacific Region Office carries out programming: Cook Islands, Fiji, Kiribati, the Marshall Islands, the Federated States of Micronesia, Nauru, Niue, Palau, Samoa, the Solomon Islands, Tokelau, Tonga, Tuvalu, and Vanuatu.

The report presents an analysis of a range of datasets to estimate the expenditure by governments, donors, and households on WASH infrastructure and services. The data sources and documents reviewed include government budget statements, the Organisation for Economic Co-operation and Development (OECD) database for Official Development Assistance (Creditor

Reporting System), the AidData database, water utility reports, Household Income and Expenditure Surveys (HIES), the UN-Water Global Analysis and Assessment of Sanitation and Drinking-Water (GLAAS), the International Monetary Fund (IMF) Expenditure by Function of Government (COFOG), and the WHO/UNICEF Joint Monitoring Programme. The aim of the report is to characterise the funding landscape for WASH in the Pacific, including how much funding is spent on WASH, how funding levels have changed over time, what sources of financing are most prominent, in what ways is WASH funding spent, and what gains in WASH access have been achieved as a result.

Figure 1. Pacific Island Countries included in this report

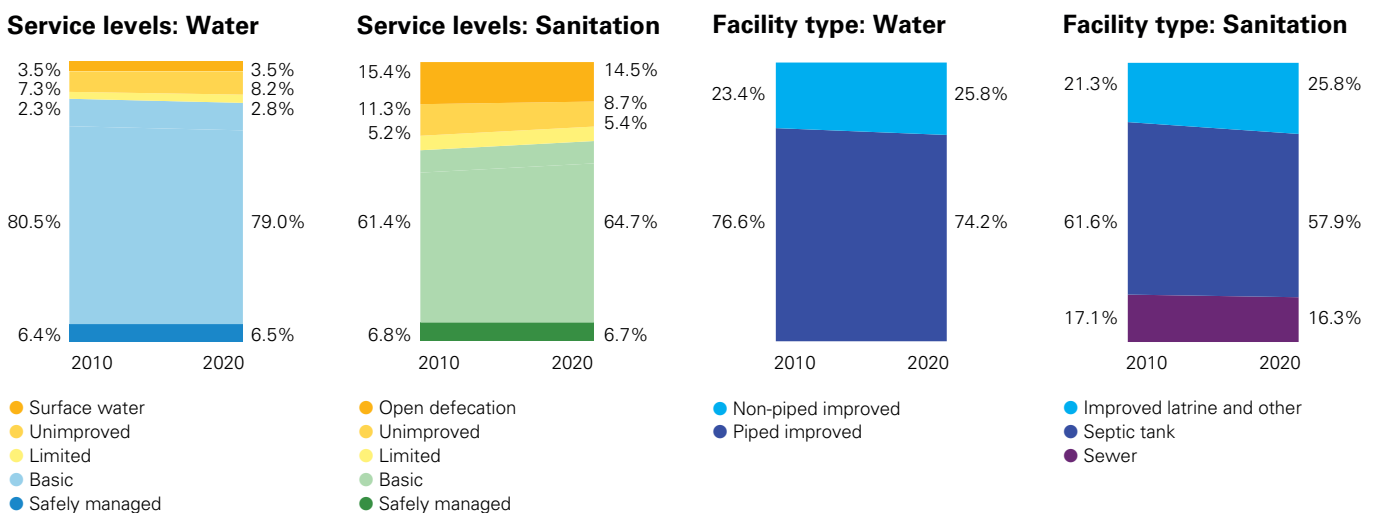


Background: Status of WASH in the Pacific and progress towards Sustainable Development Goal 6 (SDG6)

Since 2010, Pacific Island Countries have made marginal progress in expanding access to safe and reliable WASH services, and the region is unlikely to meet the Sustainable Development Goal (SDG) targets of safe water and sanitation services for all by 2030. Although the proportion of the population with at least basic sanitation increased slightly (from 68.1% to 71.4%) in 2010–2020, the proportion with at least basic water services declined over this time (from 86.9% to 85.5%) (Figure 2). Access to piped water and sewerage connections has also worsened. Information on service levels remains insufficient to estimate region-wide access to safely managed water and sanitation services, but emerging data on the safety and reliability of WASH services predict significant shortfalls in service delivery.

Despite the modest pace of WASH improvements in the Pacific, positive outcomes can be drawn from the statistics. In the majority of countries, more than 90% of the population now has access to at least a basic water supply (Table 1), and all but one country has seen an improvement in this indicator since 2010 (Figure 3). Similarly, in 12 of the 14 countries, the proportion of the population with at least basic sanitation has increased. However, a number of countries lag behind regional averages. A third of the population in the Solomon Islands lacks basic water services, and this proportion is increasing with time. Only 15% of the population in Kiribati use a safely managed water service. The sanitation situations in the Solomon Islands and Vanuatu are also cause for concern, with 65% and 47% of their respective populations lacking a basic sanitation service. The true extent of the challenge ahead will only be known once data on safely managed services are available for a broader set of countries.

Figure 2. WASH service levels in 14 Pacific Island Countries in 2010–2020 (Source: WHO/UNICEF 2022)



Note: See Appendix for definitions of water and sanitation service levels. For countries with no data on safely managed services, the category 'basic' includes both 'basic' and 'at least basic' services.

1. INTRODUCTION continued

Table 1. Coverage of water and sanitation in 14 Pacific Island Countries in 2020 (WHO/UNICEF 2022)

Country	Population (2020)	At least basic water (%)	Safely managed water (%)	Piped water (%)	At least basic sanitation (%)	Safely managed sanitation (%)	Connected to sewer (%)
Cook Islands	13,260	100	-	89	99	-	-
Fiji	896,444	94	31 ^g	83	99	-	21
Kiribati	119,446	78	15	39	46	27	11
Marshall Islands	59,194	89	-	31	84	-	38
Micronesia (Fed. States)	115,021	88 ^c	-	44 ^d	88 ^c	-	13 ^c
Nauru	10,834	100	-	53 ^c	66 ^e	-	23 ^e
Niue	748	97	94	97	96	-	-
Palau	18,092	100	91	86	100	-	71
Samoa	198,410	92	46	84	97	48	0
Solomon Islands	686,878	67	-	46	35	-	7
Tokelau	1,350	100	-	95	97	-	-
Tonga	105,697	99	30	100	93	34	3
Tuvalu	11,792	100	-	100 ^f	84 ^f	6 ^f	74 ^f
Vanuatu	307,150	91	-	48	53	-	3
Category A countries (population < 50,000)	56,076	100		84	90		43
Category B countries (population 50,000–150,000)	399,358	63		55	76		13
Category C countries (population > 150,000)	2,088,882	84		66	71		12
Total	2,544,315	86	32^a	77	71	37^b	21

a Based on data from six countries.

b Based on data from four countries.

c Data from 2019.

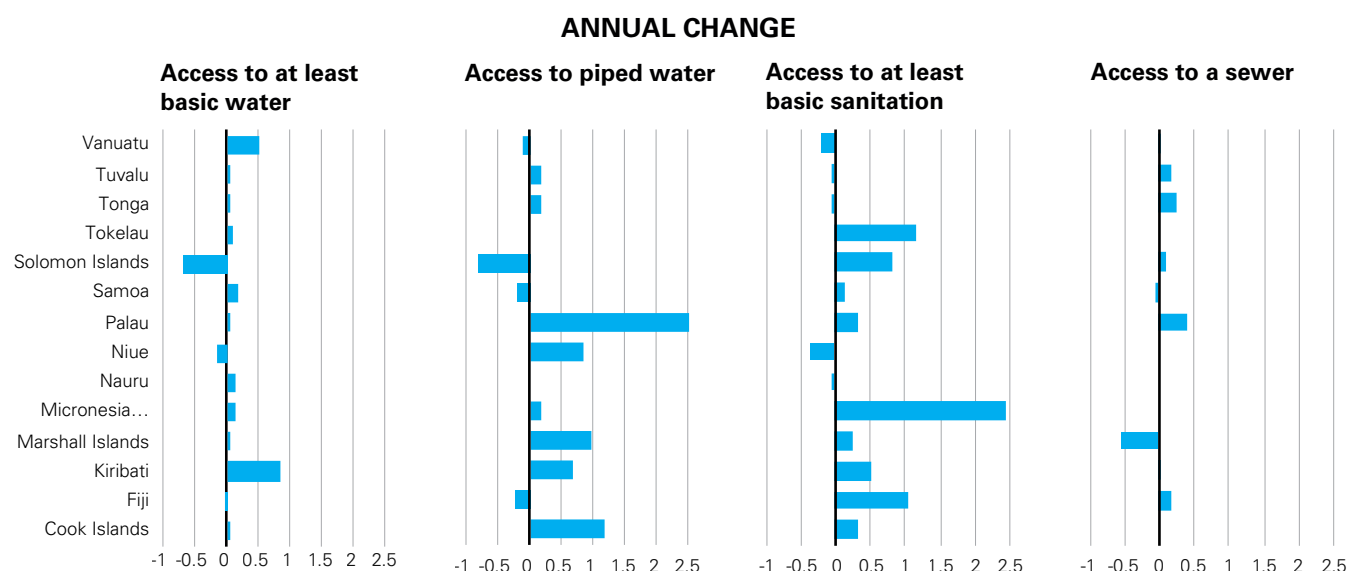
d Data from 2016.

e Data from 2017.

f Data from 2018.

g Data from 2021 Multiple Indicator Cluster Survey (MICS) in Fiji are not yet included in the WHO JMP database (FBS, 2022).

Figure 3. Annual rate of change (percentage points) in water and sanitation service levels, 2010–2020



Achieving safely managed water and sanitation services for all in the Pacific will require a significant increase in investment. Universal access to even basic WASH services by 2030 will remain out of reach if a business-as-usual approach is maintained. Based on current trajectories, universal access to at least basic sanitation will not be achieved until the next century, whereas universal access to at least basic water services will never be achieved if coverage levels continue to regress. Increased funding is necessary to create the infrastructure and services required by those who are currently not served; to improve the existing infrastructure and services that are currently inadequate; to support and maintain the services that are already at a high standard to avoid regression; and to strengthen the enabling environments upon which these services are founded.

The WASH financing challenge in the Pacific is further complicated by the high costs associated with reaching those unserved in remote areas, and ensuring climate-resilient models of service delivery. Climate change poses a considerable threat to water and sanitation services in the Pacific. At the same time, it presents opportunities, with new sources of financing available to support adaptation to climate change and its mitigation ('climate finance'). Recent estimates suggest that the flows of

global climate finance have increased to US\$632 billion each year (Climate Policy Initiative, 2021). Around US\$22 billion is directed towards the water sector each year, US\$17 billion of which is for adaptation projects. Given the clear and present threat posed to WASH by climate change in the Pacific, climate finance could play a major role in addressing the financial gap currently faced by the sector.

In the face of these challenges, it remains unclear how much funding will be required to achieve safe water and sanitation for all in the Pacific. Moreover, it is unclear where that funding will come from and how and where it should be directed. To answer these questions, a robust understanding of the current financing situation is required.

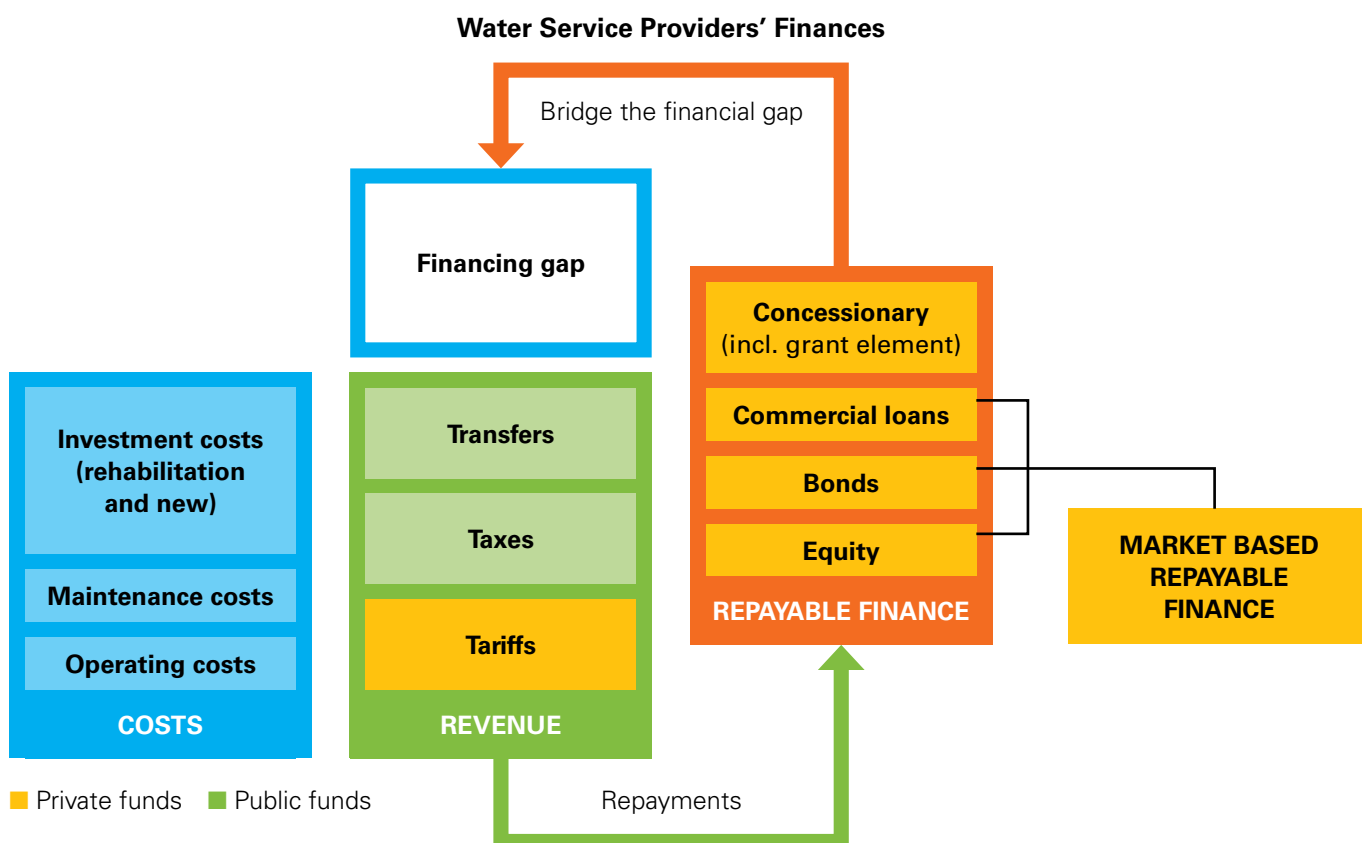
2. METHODOLOGY

Photo: University of Technology Sydney, Tim Foster

This landscape study sought to characterise the WASH funding in 14 Pacific Island Countries. This included quantifying funding levels, describing the major sources of funding, understanding the changes in funding over time, describing the composition of spending, and estimating the gains achieved in terms of the coverage of water and sanitation services.

Data on WASH spending and service delivery were extracted from a range of data sources to gain a comprehensive picture of the funding derived from domestic governments (public funding), donor funding (official development assistance and repayable loans), and households. These three sources are broadly consistent with the so-called ‘3Ts’: taxes, transfers, and tariffs (Figure 4). ‘Tariffs’ refers to funds paid by users in return for receiving water and sanitation services. ‘Taxes’ refers to funds collected domestically in a general sense, which are subsequently directed to the water and sanitation sector by the government. ‘Transfers’ refers to funds provided by external donors in the form of grants and guarantees of concessionary loans (WHO, 2017).

Figure 4. Sources of WASH financing



Source: OECD (2010).

2. METHODOLOGY continued

The analysis in this report considers data from 2011 onwards. The documents and databases reviewed included:

- Government budget statements
- IMF Expenditure by Function of Government (COFOG)
- OECD database for Official Development Assistance
- AidData
- Lowy Institute Pacific Aid Map
- Utility annual reports
- Household Income and Expenditure Surveys (HIES)
- UN-Water Global Analysis and Assessment of Sanitation and Drinking-Water (GLAAS)
- WHO/UNICEF Joint Monitoring Programme

Table 2. Data sources used in the landscape study

	HOUSEHOLD EXPENDITURE			DONOR FUNDING		GOVERNMENT EXPENDITURE		
	Household Income & Expenditure Survey	GLAAS ^a 2018	IBNET ^b and/or utility annual reports	OECD Creditor Reporting System	GLAAS ^a 2018	Budget estimates	GLAAS ^a 2018	IMF COFOG ^c
Cook Islands	Yes	No	Yes	Yes	No	Yes	No	Yes
Fiji	Yes ^d	No	Yes	Yes	No	Yes	No	No
Kiribati	Yes	No	Yes	Yes	No	Yes	No	Yes
Marshall Islands	No	No	Yes	Yes	No	Yes	No	No
Micronesia (Fed. States)	Yes	No	Yes	Yes	No	No	No	No
Nauru	Yes	No	Yes	Yes	No	Yes	No	Yes
Niue	Yes	No	Yes	Yes	No	Yes	No	No
Palau	Yes	No	Yes	Yes	No	Yes	No	No
Samoa	Yes	No	Yes	Yes	No	Yes	No	No
Solomon Islands	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Tokelau	Yes	No	No	Yes	No	Yes	No	No
Tonga	Yes	No	Yes	Yes	No	Yes	No	No
Tuvalu	Yes	No	Yes	Yes	No	Yes	No	No
Vanuatu	Yes	No	Yes	Yes	No	Yes	No	No

a UN-Water Global Analysis and Assessment of Sanitation and Drinking-Water.

b International Benchmarking Network.

c Expenditure by Functions of Government.

d Although a recent household income and expenditure survey was conducted in Fiji, the final report does not present the expenditure on water and sanitation services. Data on household expenditure on water and sanitation services for Fiji was obtained from a recent Multiple Indicator Cluster Survey rather than a Household Income & Expenditure Survey.

2. METHODOLOGY *continued*

To compare funding levels across different countries and different years, all monetary values were converted to US dollars (US\$) in 2019 terms. This was typically done by applying a local deflator factor to convert the local currency values to the 2019 local currency values, and then applying the period exchange rate for 2019. The reference year of 2019 and the US currency were selected because it is the reference currency used by the OECD Official Development Assistance database. The funding and expenditure for each country was divided by its population to report the results on a per capita basis, which also allowed easier comparisons across countries. Data on populations, exchange rates, and deflators were obtained from the World Bank Development Indicators database (World Bank, 2022).

Donor funding, including official development assistance (ODA) and other official flows (OOF), was estimated and characterised with the Query Wizard from the OECD International Development Statistics database. A subset of data on donor funding classified in the 'Water and Sanitation' sector was downloaded for the period 2011–2020.

Donor funding for water and sanitation was further categorised in the following sub-sectors:

- Water supply and sanitation—large systems
- Water supply—large systems
- Sanitation—large systems
- Basic drinking water supply and basic sanitation
- Basic drinking water supply
- Basic sanitation
- Waste management and disposal
- Water resources conservation (including data collection)
- Water sector policy and administrative management
- Education and training in water supply and sanitation
- River basin development

Full definitions of these sub-sectors are given in the Appendix to this report. For the purposes of the analysis, 'River basin development' was excluded as a category, because its scope is broader than water and sanitation services, which are the focus of this report. The 'Waste management and disposal' category was retained, but analysed separately. Stand-alone hygiene promotion activities did not fall within the 'Water and Sanitation' category, and instead may have been reported under the 'Health Education' sub-category. To capture hygiene promotion activities and other WASH funding that may have been assigned to another sector, a keyword search was run against all donor-funded projects (titles and descriptions) allocated to other sectors to identify those consisting wholly or partly of water, sanitation, or hygiene activities. Project titles or descriptions containing any keyword related to water, sanitation, or hygiene were reviewed and included in the analysis when relevant.

Government budget documents were reviewed to ascertain water and sanitation expenditure, whether in the form of a consolidated category or individual line items relating to WASH projects or divisions/units within ministries. For countries with separate 'recurrent' and 'development' budgets, both budgets were reviewed. Data for both budget estimates and actual expenditure were extracted where available. Donor funding was often reported in government budgets, so there was overlap between the funding data from budget statements and the OECD data on donor funding. To avoid double counting, the sources of funding reported in budget statements (funded through government appropriations vs funded by donors) were determined where possible.

An extensive process of stakeholder consultation was carried out during the development of this report. Preliminary analysis and a draft report were shared with both government stakeholders and development partners across the Pacific region. Face-to-face and online consultations were also held with selected countries. This process of consultation resulted in feedback that was incorporated into the final analysis and report.



Cover photo: UNICEFPacific

Household expenditure on WASH was calculated by summing the estimates for expenditure on utility-provided water and sanitation services, the installation of on-site sanitation, and the installation of household water tanks. Household expenditure and income surveys (HIES) and the annual reports for water and sanitation service providers were used to estimate the amounts spent on water and sanitation services. Household financing of on-site sanitation was estimated by identifying country-specific unit costs from previous SDG costing initiatives (Hutton and Varughese, 2016) and applying them to estimates of the number of people gaining access each year to septic tanks and improved pit latrines (determined from JMP data). Household financing of water tanks was estimated by assuming a per capita cost of US\$100¹ and applying this to the number of people gaining access to household water tanks each year. This latter figure was derived from the line of best fit applied to the data from each country, typically based on recent censuses and surveys. A 50% reduction was applied to household water tanks based on data from Samoa, which showed

that around half of all household rainwater tanks are paid for by households themselves, whereas the other half of household tanks are paid for by government, donors, or NGOs (see Figure A1 in Appendix). This also reflects the wider evidence from several countries in which governments or donors either fully fund the rollout of household tanks (e.g., Tonga, Nauru), or provide a partial subsidy (e.g., Fiji).²

The total funding for WASH was calculated in two ways. First, for countries with budget statements that clearly distinguished domestic expenditure and donor expenditure, the total expenditure was calculated as the sum of household expenditure (tariffs, installation costs), domestic government funding, and donor funding. Second, for countries in which budgets did not clearly distinguish domestic and donor funding, the total budget and household expenditure were summed (based on the assumption that donor funding was included in the total budget).

1 This unit cost was drawn from a recent survey of household rainwater tanks in rural Vanuatu.

2 Fiji Budget documents suggest that \$16.5 million (FJD) was allocated to a rainwater tank subsidy scheme in 2016–2020.

Limitations

The analysis has a number of caveats and limitations, including:

- The approaches to budget reporting differ across countries, and whereas most countries presented budget estimates, not all reported their actual expenditure in previous years.
- Although budget statements and audits were reviewed for all countries, these documents were not available for all years since 2011, so there were gaps in the data in certain years for some countries.
- In budget statements, it was not always clear whether water and sanitation expenditure items were financed domestically by government (e.g., through taxes) or by donors (transfers).
- Where utilities supply both water services and electricity, it was not always possible to accurately apportion the operating subsidies from government or donors specifically for water and sanitation.
- Fiji constitutes more than a third of the region's population, and therefore heavily influenced the results. An additional analysis was therefore conducted on a sub-set of 13 countries (excluding Fiji).
- Financial years differ across countries and data sources, so the time periods for data aggregation did not always align. Data were aggregated based on the year of the final date of each reporting period.
- A lack of data on recurrent hygiene costs prevented the estimation of the cost of maintaining hand-washing practices.
- Expenditure on water and sanitation by certain organisations, such as small civil society organisations (CSOs), faith-based organisations, and private sector organisations, might not have been captured by the key datasets used for the analysis.
- Infrastructure costs can vary substantially across Pacific Island countries, and this must be taken into account when evaluating the adequacy of funding levels and when interpreting the aggregated results.

3. PUBLIC FUNDING



Data on government expenditure was obtained from budget statements for 13 of the 14 countries (a full list of the documents reviewed can be found in the Appendix). WASH funding has been reported inconsistently across countries and across years.

Some countries present aggregated water and sanitation budget lines (e.g., Vanuatu), often aligned to specific ministries, departments or agencies; whereas other countries present an itemised list of individual projects or initiatives (e.g., Kiribati). There is also great variation in the way expenditure is presented (e.g., development budgets vs recurrent budgets; budget estimates vs actual expenditure; cash grants vs government appropriation, etc.).

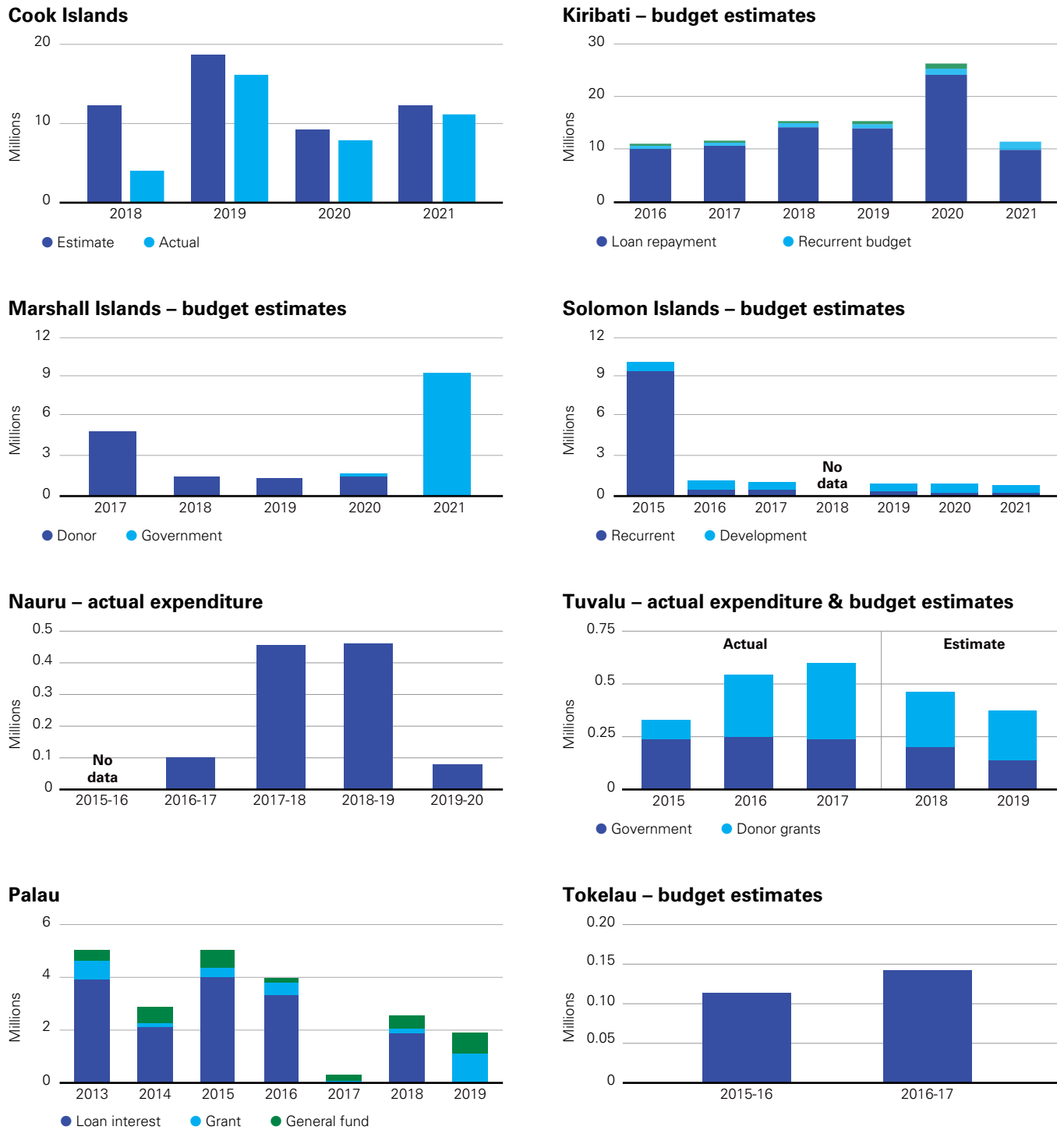
Between 2016 and 2020, the budgeted WASH expenditure for the 13 countries with data available summed to US\$175 million per year, with Fiji accounting for almost two-thirds of this figure (Figure 5). This funding is equivalent to around US\$74 per person per year, or around US\$42 per person per year when Fiji is excluded. The expenditure per person varied greatly across the 14 countries, from US\$715 in the Cook Islands to US\$1.60 in the Solomon Islands.

The distinction between government appropriations and donor support is not always clear in budget statements. In the data analysed, domestic funding appeared to account for 67% of the budgeted expenditure, but this dropped to around 13% when Fiji was excluded. The donor funding that appears in government budgets is in some instances lower than the donor funding reported through the OECD. This may reflect that donors do not always engage with the domestic financial systems or may be an artefact of financial year mismatches or gaps in budget data for certain years.

Since 2016, WASH budgets appear to have increased in real terms in some countries (e.g., Vanuatu, Kiribati), declined in some countries (e.g., the Solomon Islands, Tuvalu, Fiji), and remained steady in others (e.g., Samoa). Budget execution varies: actual WASH expenditure typically corresponded to the budgeted expenditure in Samoa and Vanuatu, whereas in Fiji, the actual expenditure since 2015 appears to have been 25% lower than was originally budgeted.

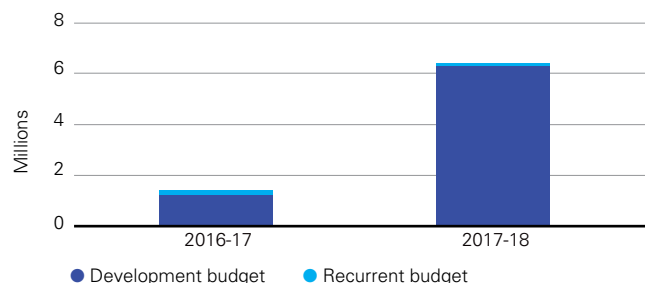
3. PUBLIC FUNDING continued

Figure 5. Budgeted WASH expenditure in selected Pacific Island countries (USD)

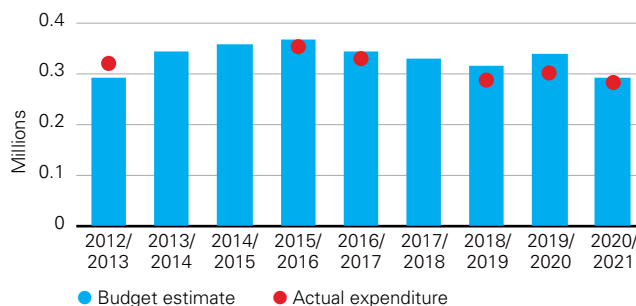


3. PUBLIC FUNDING continued

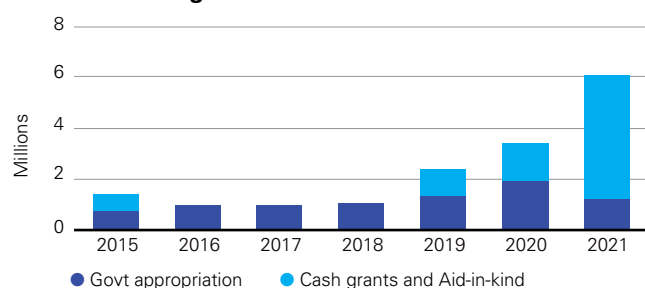
Tonga – budget estimates



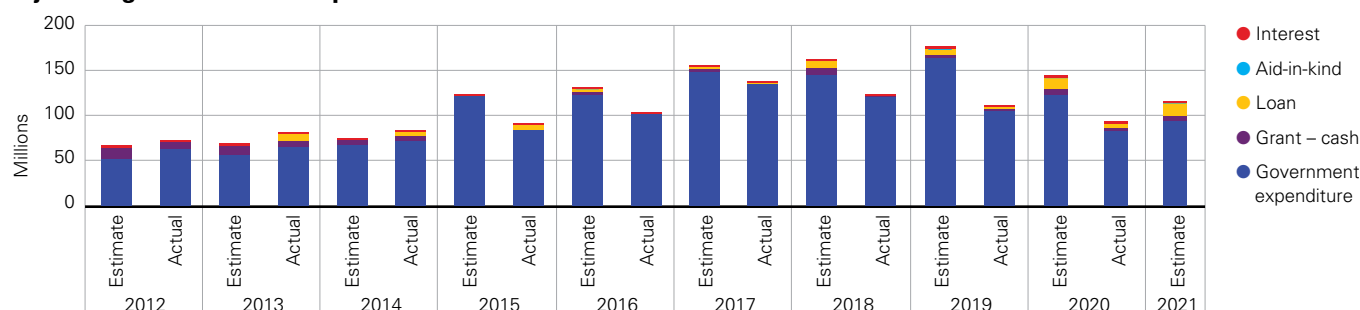
Niue



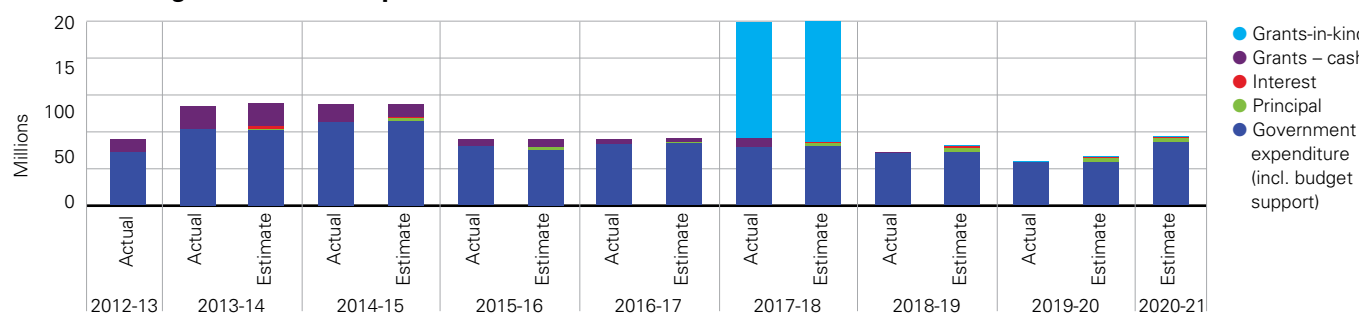
Vanuatu – budget estimates



Fiji – budgeted & actual expenditure



Samoa – budgeted & actual expenditure



Notes: a Recurrent budget for 2015 in the Solomon Islands uses 'actual' expenditure; 2019 expenditure figures are actual expenditures.

b In-kind support in 2017–2018 in Samoa relates to the "Project for Improvement of Urban Untreated Water Supply Schemes"; valued at US\$84.5 million.

3. PUBLIC FUNDING continued

Figure 6. Budgeted WASH expenditure per person: 2014–2021 (USD)

Budgeted expenditure (US\$ per capita)

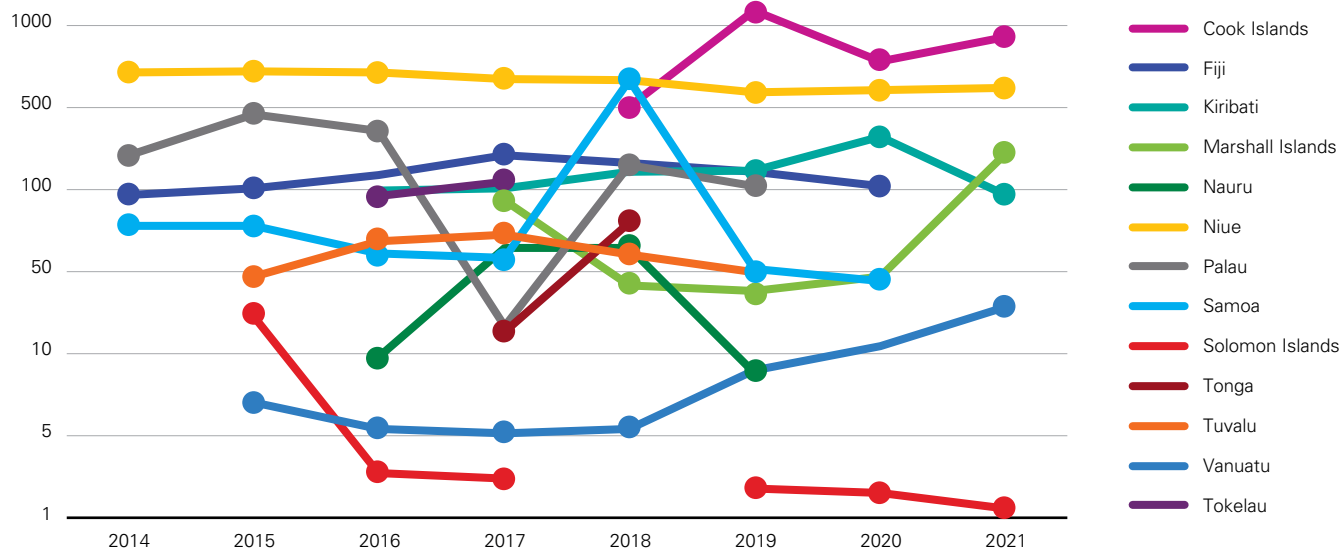
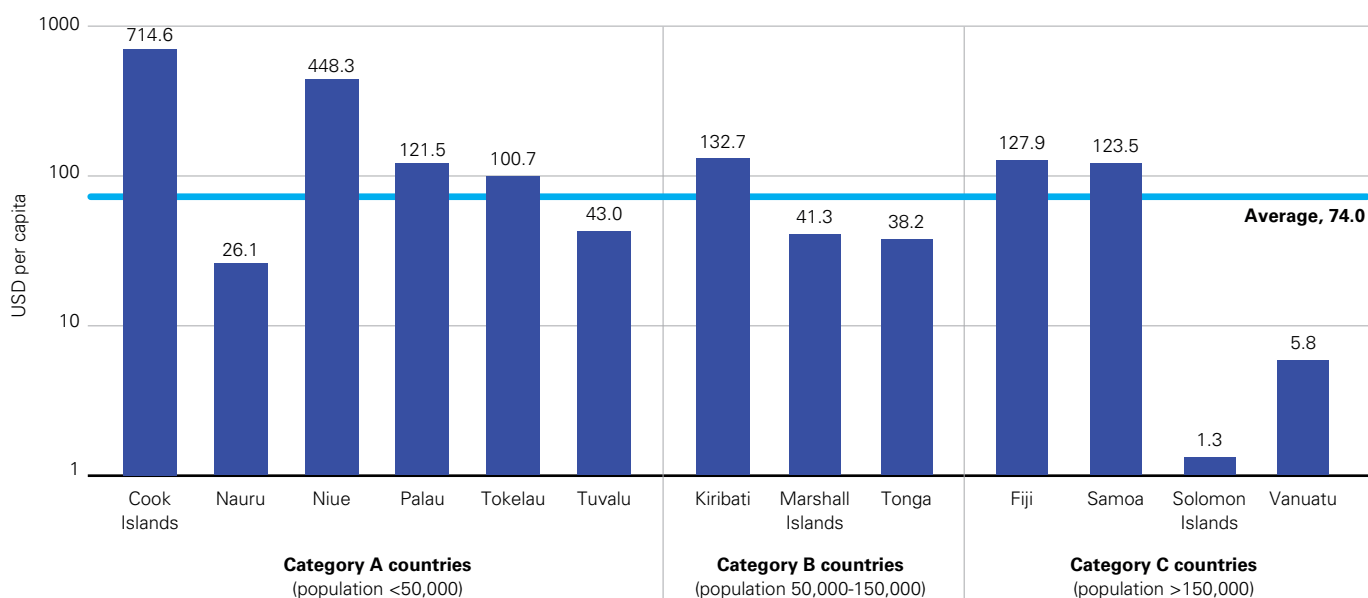


Figure 7. Average annual budget allocation for WASH: 2016-2020 (USD per capita)



3. PUBLIC FUNDING *continued*

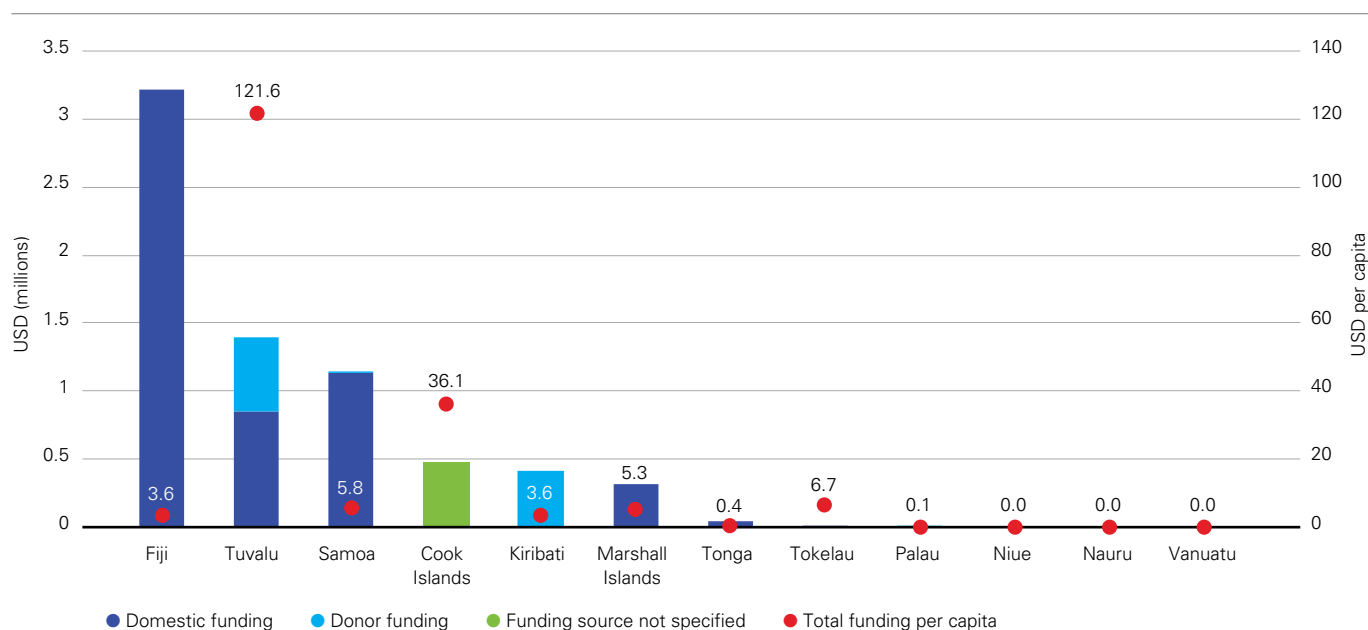
The UN-Water Global Analysis and Assessment of Sanitation and Drinking Water (GLAAS) 2019 also reported data on government expenditure for three Pacific Island Countries (Fiji, Vanuatu, Solomon Islands).³ Two of three data points align with data extracted from budget statements, with a notable discrepancy for Vanuatu:

- **Fiji:** GLAAS reported that the government expenditure on WASH was US\$121 million in 2018; the data from budget estimates in this report indicate that it was US\$122 million.
- **Solomon Islands:** GLAAS reported that the government expenditure on WASH was US\$690,000 in 2016; data from estimates in the country's Recurrent Budget indicate that it was US\$724,000.

- **Vanuatu:** GLAAS reported that the government expenditure on WASH was US\$134,000 in 2016, whereas data from budget estimates in 2016 indicated that it was US\$957,000.

Expenditure on waste management appears to vary widely across the Pacific (Figure 8). Between 2016 and 2020, around US\$7 million per year was budgeted for waste management, an average of US\$4 per person. Fiji, Samoa, and Tuvalu accounted for US\$5.8 million (82%) of this expenditure. Tuvalu and the Cook Islands were positive outliers in terms of the per capita amount spent on waste management, whereas waste management was not recorded in the budget statements of several countries.

Figure 8. Budgeted expenditure on waste management (USD per year): 2016–2020



Note: Data for Fiji, the Marshall Islands, Samoa, the Solomon Islands, Tonga, Tuvalu, and Tokelau are based on budget estimates. Data for Niue, the Cook Islands, Vanuatu, and Palau are based on actual expenditure. Data for Kiribati are based on a mix of budget estimates and actual expenditure.

3 Another round of GLAAS was underway at the time of developing this report, but the results were not available at the time of writing.

4. DONOR FUNDING

Between 2011 and 2020, donor funding (ODA and OOF) directed to the water and sanitation sector in the Pacific averaged US\$43.5 million per year, or US\$18.3 per person per year (Figures 9 & 10).

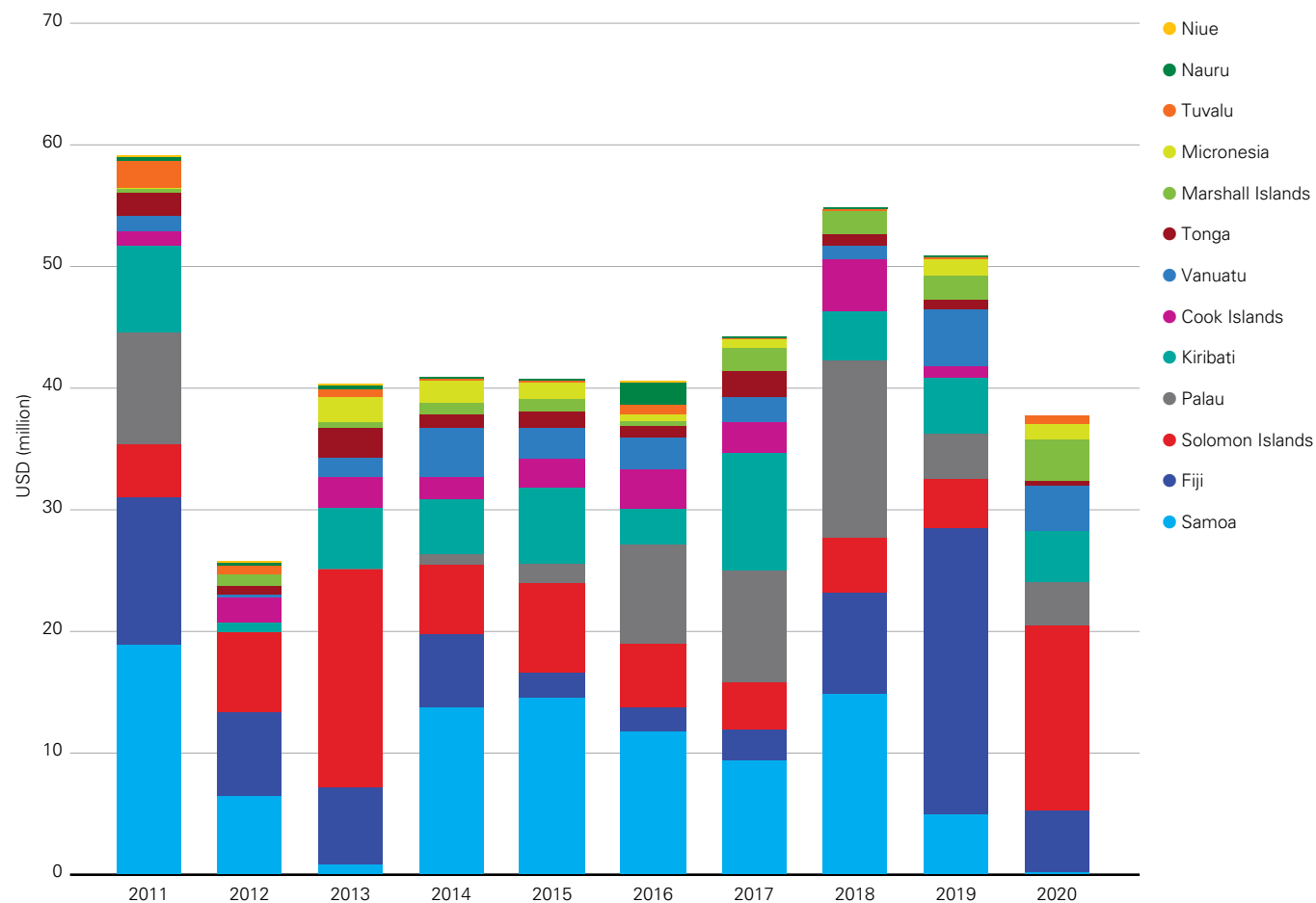
There was a steady increase in donor funding for water and sanitation in real terms between 2016 (total US\$40.5 million, US\$16.9 per capita) and 2019 (total US\$50.8 million, US\$20.3 per capita), but funding levels dropped by more than a quarter from 2019 to 2020. Of the 14 recipient countries analysed, Samoa received 22% of all donor funding for WASH in 2011–2020, followed by Fiji (17%), the Solomon Islands (17%), Palau (12%), and Kiribati (11%). On a per capita basis, Palau and the Cook Islands received the highest levels of donor funding, with disbursements 1–2 orders of magnitude higher than countries such as Vanuatu and the Federated States of Micronesia (FSM). In 2011–2019, donor funding for water and sanitation accounted for 4% of the donor funding across all sectors. Six countries spent less than 2% of donor funding on WASH: Vanuatu (1.9%), Tonga (1.9%), FSM (1%), Nauru (1%), the Marshall Islands (0.9%), and Niue (0.3%).

Donor funding for water and sanitation in 2018 and 2019 was US\$10–15 million higher in real terms than in the 5 preceding years, signalling an overall increase in donor funding. This increase can be largely attributed to an urban water and sanitation initiative in Fiji funded by the Green Climate Fund. Donor funding dropped sharply in 2020, when the amount directed towards WASH (US\$37.8 million) was at its lowest level in real terms since 2012. In 2020, around 40% of donor funding for water and sanitation was directed to the Solomon Islands based on significant funding provided by the European Union and the Asian Development Bank.

In 2011–2020, 4% of donor funding was directed to water and sanitation, although there was significant variation across countries (Figure 11). The levels of donor funding for water and sanitation ranged between 2.5% and 5% of all donor funding, although the fraction of donor funding directed towards water and sanitation in 2020 (2.5%) was the lowest in more than a decade.

Figure 9. Donor funding for water and sanitation by year and recipient country (USD, constant prices 2019)

Donor funding (ODA and OOF) for Water Supply & Sanitation in 14 Pacific Island countries

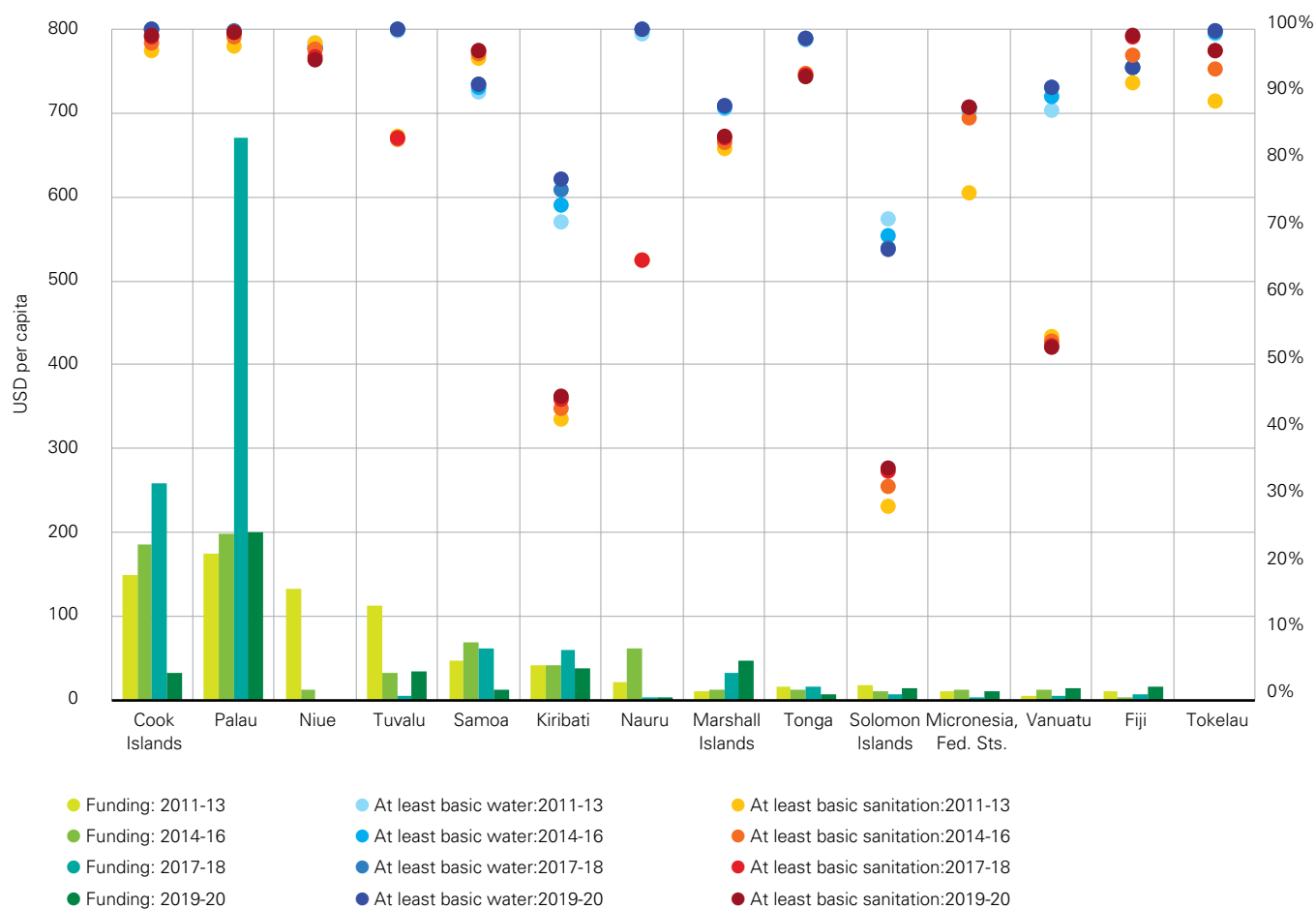


Note: Excludes “river basin development” and “waste management/disposal”. Data are presented in ‘constant price’ (USD adjusted to 2019 values).

4. DONOR FUNDING continued

Figure 10. Donor funding for WASH by recipient country, 2011–2020 (USD per capita)

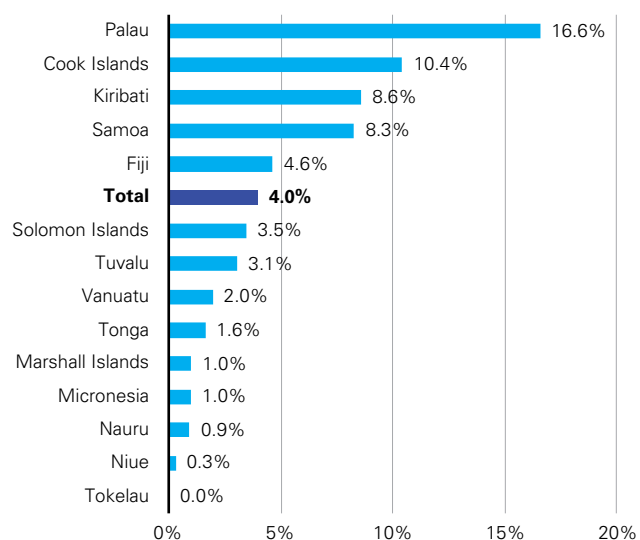
Donor funding for WASH (USD) vs access to basic services



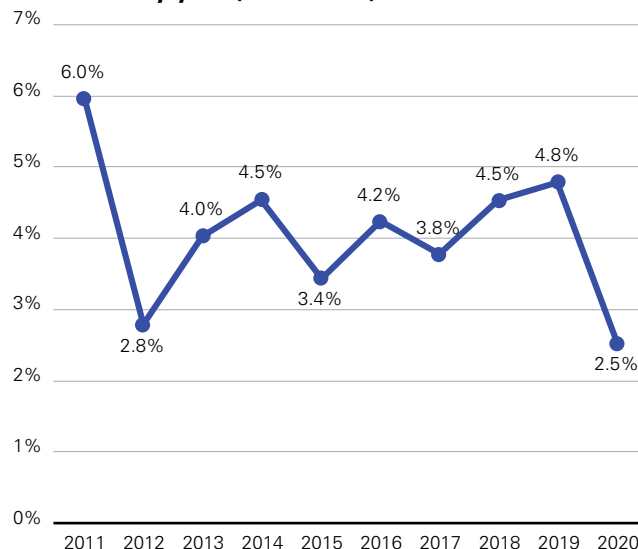
Note: Excludes “river basin development” and “waste management/disposal.” Data are presented in ‘constant price’ (USD adjusted to 2019 values).

Figure 11. Donor funding for water and sanitation as a percentage of all donor funding (2011–2020)

% of donor funding directed towards water and sanitation by country (2011–2020)



% of donor funding directed towards water and sanitation by year (2011–2020)

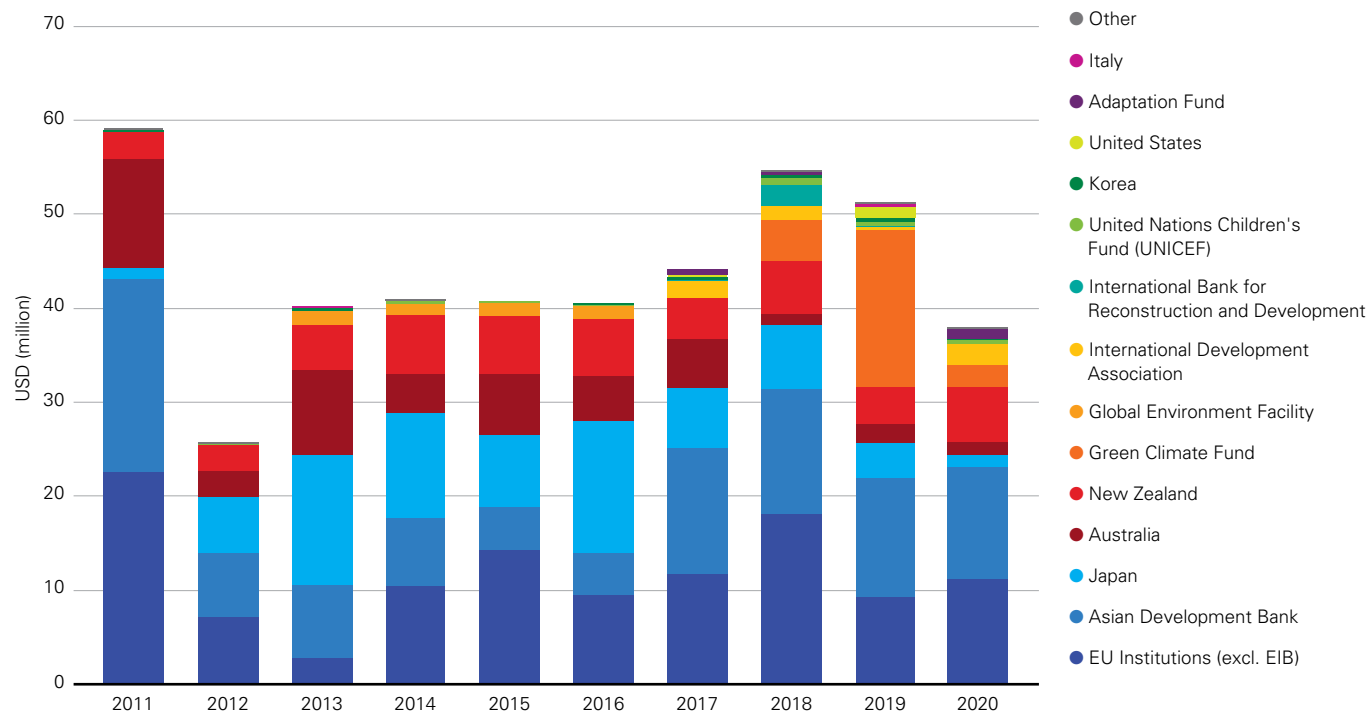


In 2011–2020, the European Union (27%), the Asian Development Bank (24%), and Japan (17%) were the largest contributors to WASH in the Pacific, followed by Australia (11%) and New Zealand (11%) (Figure 12). However, in 2019, the Green Climate Fund was the most significant contributor (33%). Forty-four countries have contributed to the Green Climate Fund, with three-quarters of its confirmed funding derived from six countries (Japan, USA, United Kingdom, France, Germany, and Sweden) (Green Climate Fund, 2022). The total contribution of multilateral climate funds (Green Climate Fund, Global Environment Facility, Climate Investment Funds, Adaptation Fund) between 2011 and 2020 amounted to 7% of donor funding.

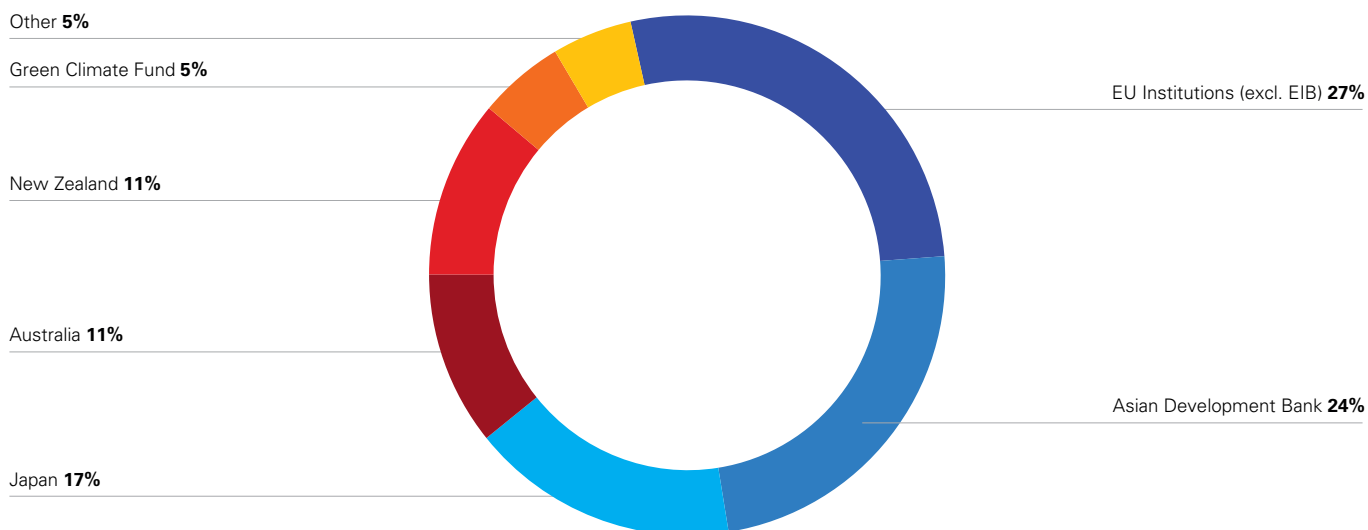
Specific donor investment in WASH varies by the recipient country (Figure 13). New Zealand has focused their support on the Cook Islands, Vanuatu, and Kiribati; the Asian Development Bank has directed support towards Fiji, Palau, Kiribati, FSM, the Solomon Islands, and the Marshall Islands; the EU has largely supported Samoa, Kiribati, the Solomon Islands, and Tuvalu; Japan has prioritised Samoa, the Solomon Islands, and Palau; and Australia has directed most of its support to Tonga, Kiribati, and the Solomon Islands. All of the US\$21 million from the Green Climate Fund in 2018–2019 was directed towards an urban water and sanitation project in Fiji, with a small tranche of funding directed towards the WASH sector in the Marshall Islands in 2020.

Figure 12. Water and sanitation funding by donor (USD, 2011–2020)

Donor Funding for Water Supply and Sanitation in 14 Pacific Island Countries



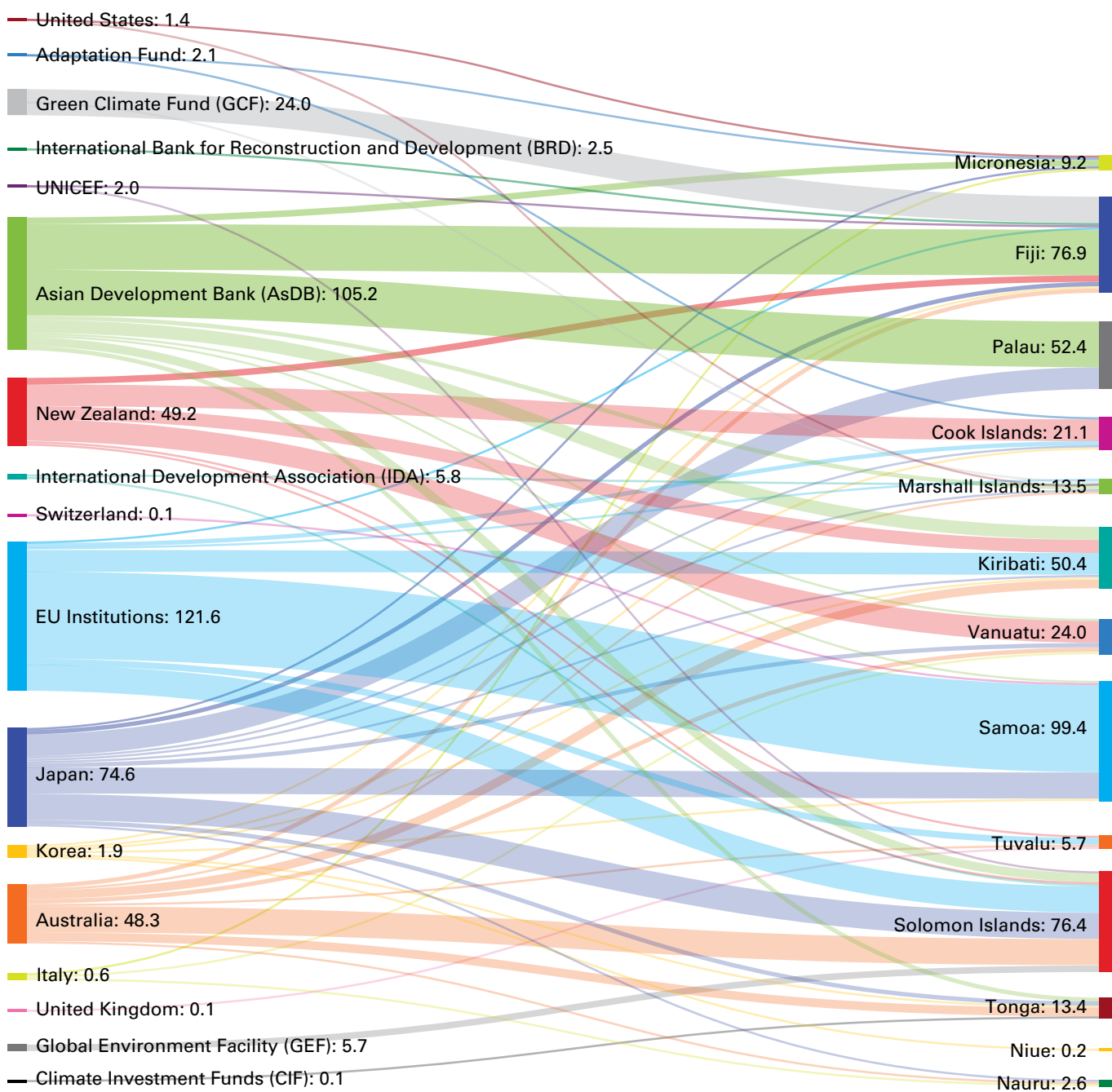
Major sources of donor funding for Water Supply and Sanitation in 14 Pacific Island Countries



Note: EIB = European Investment Bank.

4. DONOR FUNDING continued

Figure 13. WASH funding (USD) by donor and recipient country (2011–2020)



Note: Values are in USD in 2020 terms.

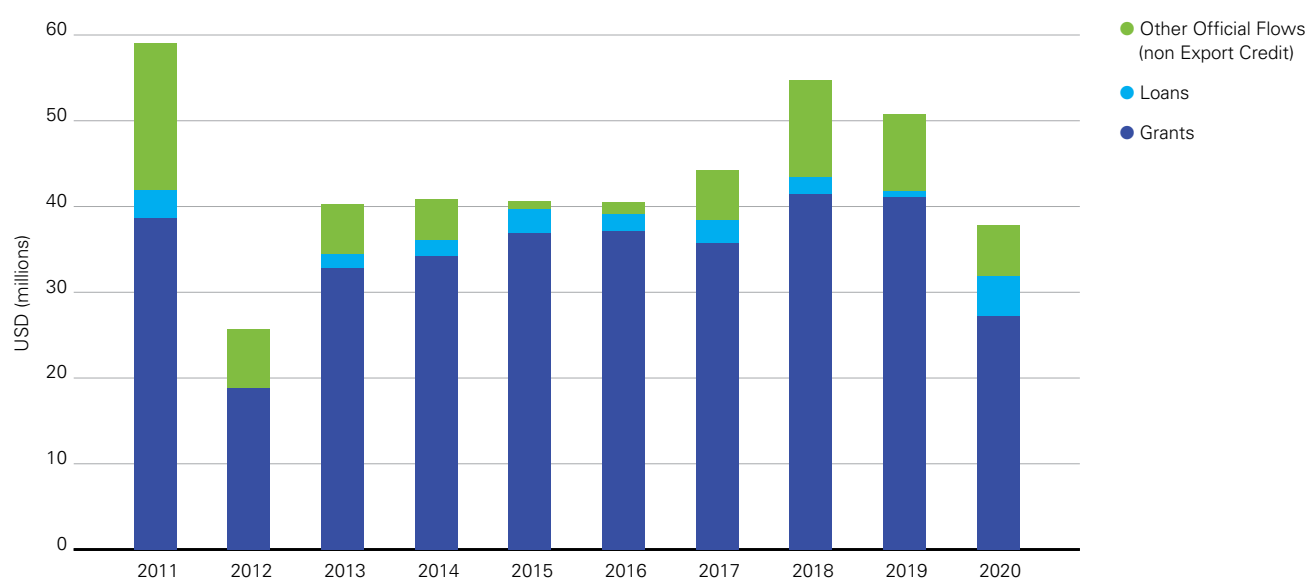
4. DONOR FUNDING *continued*

Donor funding for water and sanitation in the Pacific has been dominated by grants (79%), with 5% of financial support in the form of ODA loans and 16% OOFs (Figure 14). Around 95% of OOFs from the Asian Development Bank were described as LIBOR-based loans.⁴ Loan repayments (principal and interest) also constitute a modest fraction of the budgeted WASH expenditure in government statements. In Kiribati, 2.8% of WASH

spending is directed towards loan principal and interest (2.0% and 0.8%, respectively). In Samoa, it is 5.6%⁵ (3.9% principal, 1.8% interest), and in Fiji it is 4.2% (3.2% principal, 1.0% interest), whereas in Vanuatu, no WASH-related loans were reported in the annual budget statements. The countries with the highest proportion of donor funding in the form of loans (ODA loans and OOFs) were Fiji (53%), FSM (57%), and Palau (63%).

Figure 14. Donor funding for water and sanitation by type of financial flow (2011–2020)

Type of WASH donor funding for 14 Pacific Island Countries



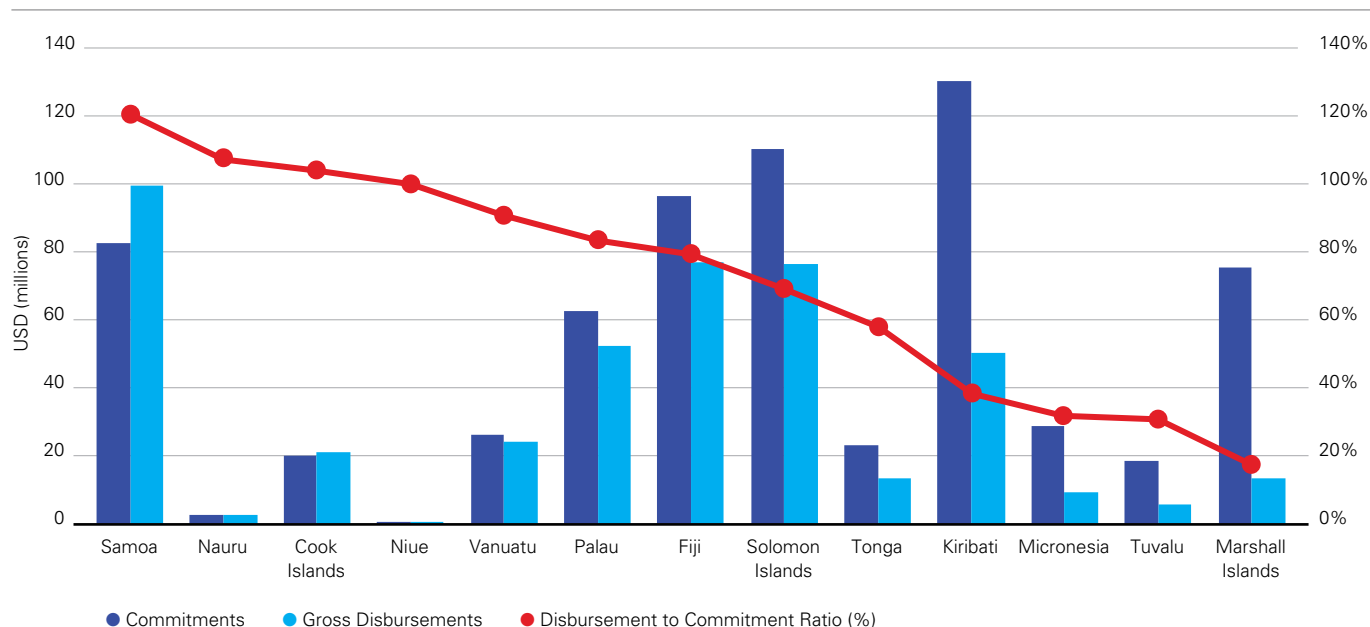
Between 2011 and 2020, donor disbursements for water and sanitation summed to 66% of the amount committed (Figure 15). The recipient countries that received substantially less than was committed included Kiribati (39%), the Marshall Islands (18%), FSM (32%), and Tuvalu (31%). The donors with the lowest disbursed-

to-committed ratio included the Asian Development Bank (54%), the Green Climate Fund (30%), and the World Bank (12%). Caution is needed when interpreting these data given the time required to implement water and sanitation projects. Even after the funding is committed, it may take several years for the funds to be fully spent.

4 LIBOR stands for London Interbank Offered Rate (LIBOR) and refers to the benchmark interest rate at which global banks lend to one another.

5 This decreases to 2.5% when aid in-kind is included (1.7% principal, 0.8% interest).

Figure 15. Donor funding disbursements vs commitments by recipient country (2011–2020)



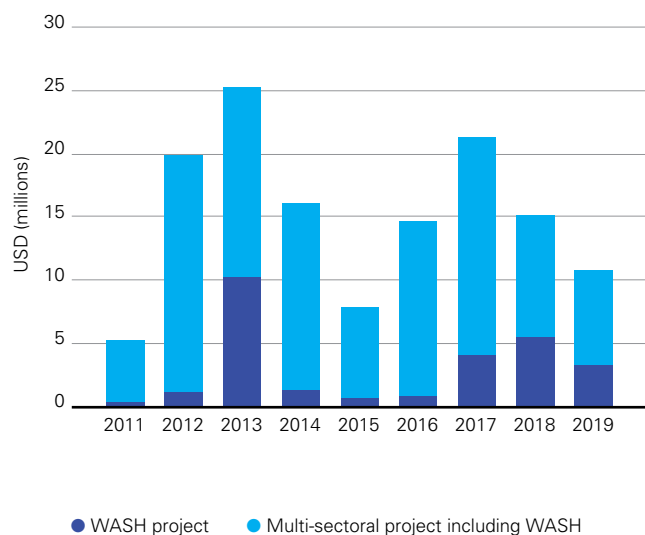
Note: USD in 2020 terms

The OECD data on donor funding tagged as ‘Water and Sanitation’ do not give a complete picture of the donor funding for WASH, and at least US\$5.5 million per year in other WASH expenditure was identified. WASH projects totalling US\$3.1 million per year with other OECD sector codes were identified, which were not captured in the above analysis (Figure 16). Furthermore, multi-sectoral projects with a WASH component in the

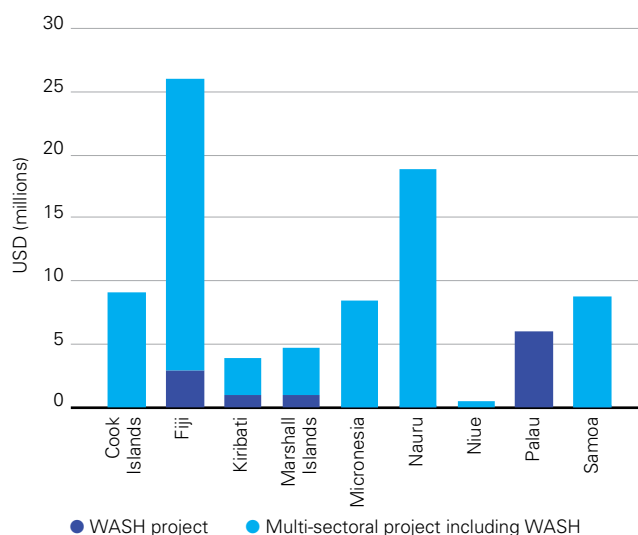
project description tallied to an additional US\$12.1 million per year. Non-Development Assistance Committee (DAC) countries also contributed US\$21.4 million to the WASH sector in 2011–2019 (Figure 17). Around 90% of this amount was in the form a US\$19 million loan from a Chinese Bank to the Cook Islands to support the Rarotonga Water Ring Main Upgrade Project.

Figure 16. Additional donor funding for WASH projects in the Pacific not assigned the 'Water Supply & Sanitation' sector code in the OECD data⁶.

Donor funding for WASH not assigned to 'Water & Sanitation' sector by year

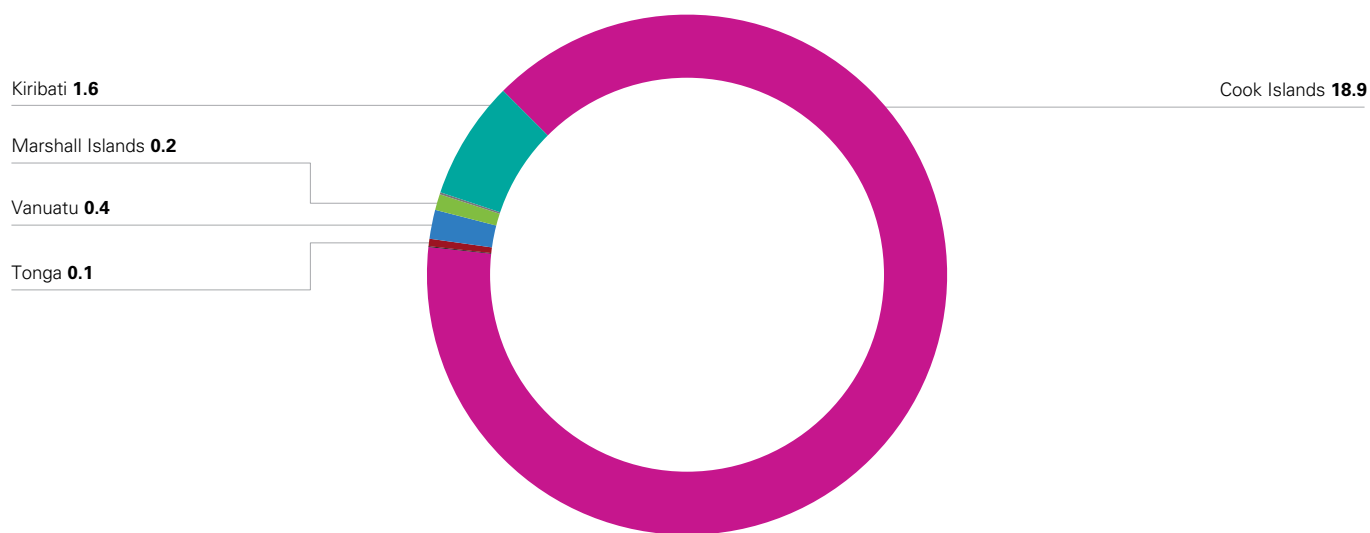


Donor funding for WASH not assigned to 'Water & Sanitation' sector by country (2011–2019)



⁶ The most common categories to which these projects were assigned were transport and storage, emergency response, government and civil society, other social infrastructure and services, energy, and education.

Figure 17. WASH funding from non-DAC countries by recipient country (US\$ million, 2011–2019)

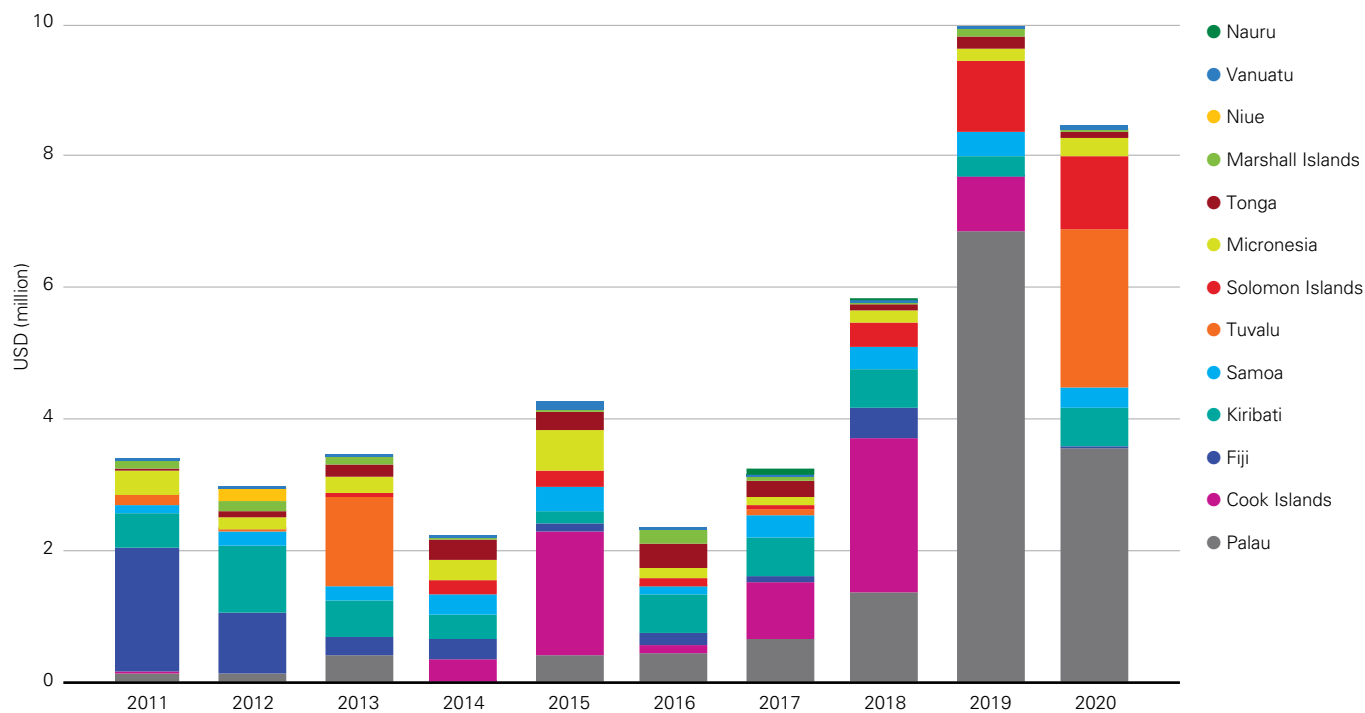


Donor funding for waste management and disposal has increased markedly since 2017 (Figure 18). The funding levels in 2019–2020 were more than three times higher than in 2016–2017. This increase can be attributed to significant investments in waste management and disposal in Palau, Tuvalu, and the Solomon Islands.

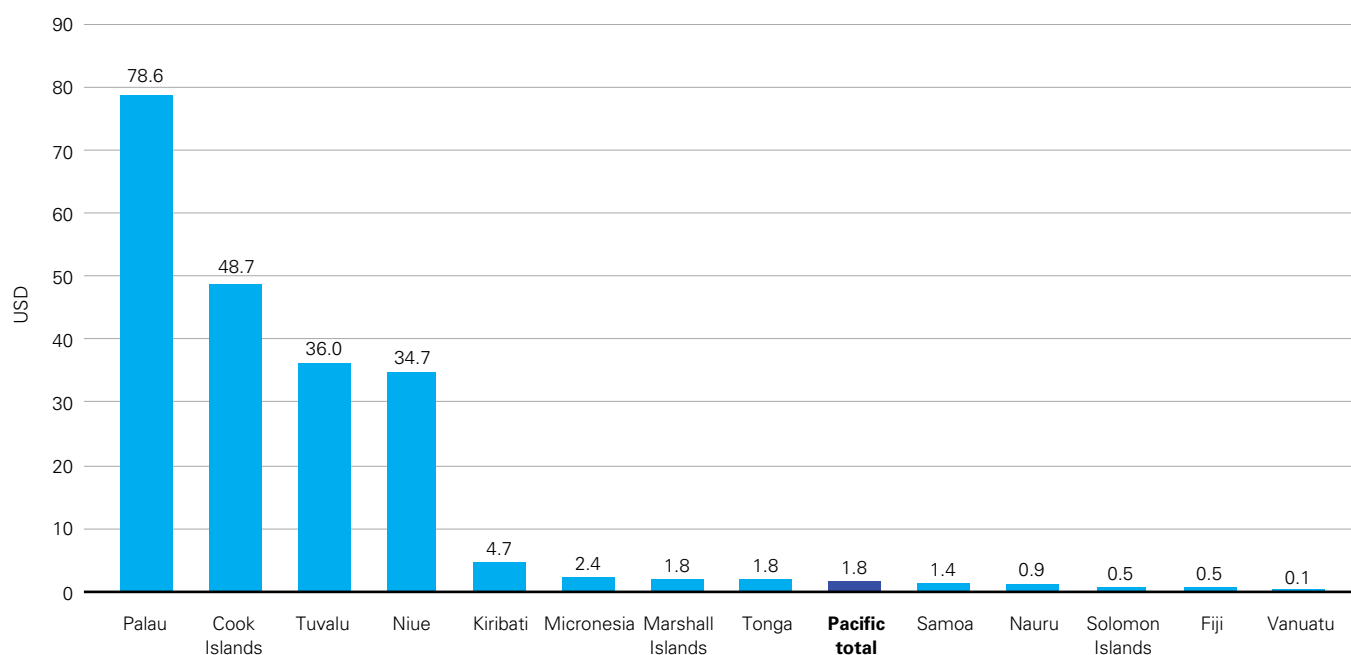
4. DONOR FUNDING continued

Figure 18. Donor funding for waste management and disposal (2011–2020)

Donor funding for Waste Management & Disposal in 14 Pacific Island Countries



Donor funding per capita per year for Waste Management & Disposal by country (2011–2020)



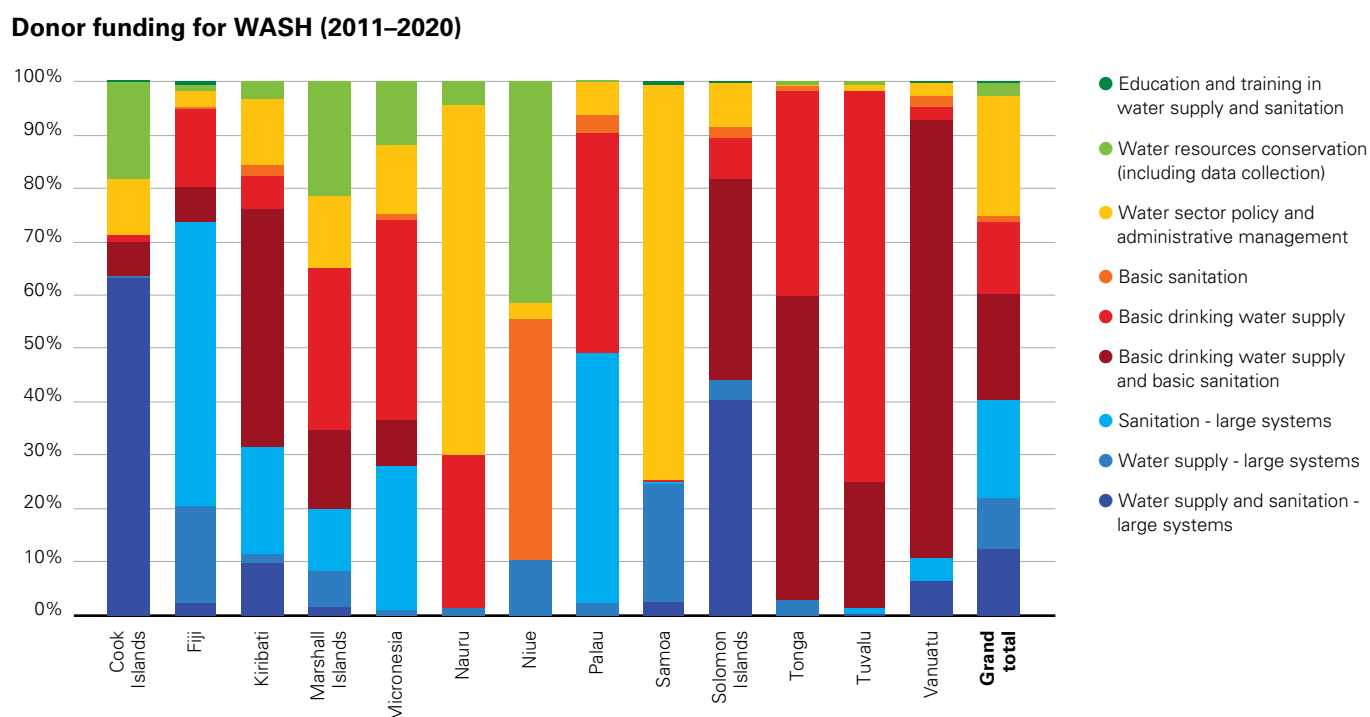
5. COMPOSITION OF WASH SPENDING

5. COMPOSITION OF WASH SPENDING continued

The data from the OECD suggest a relatively even split between water and sanitation expenditure, whereas the data from government budget statements indicate that funding is skewed more towards water.

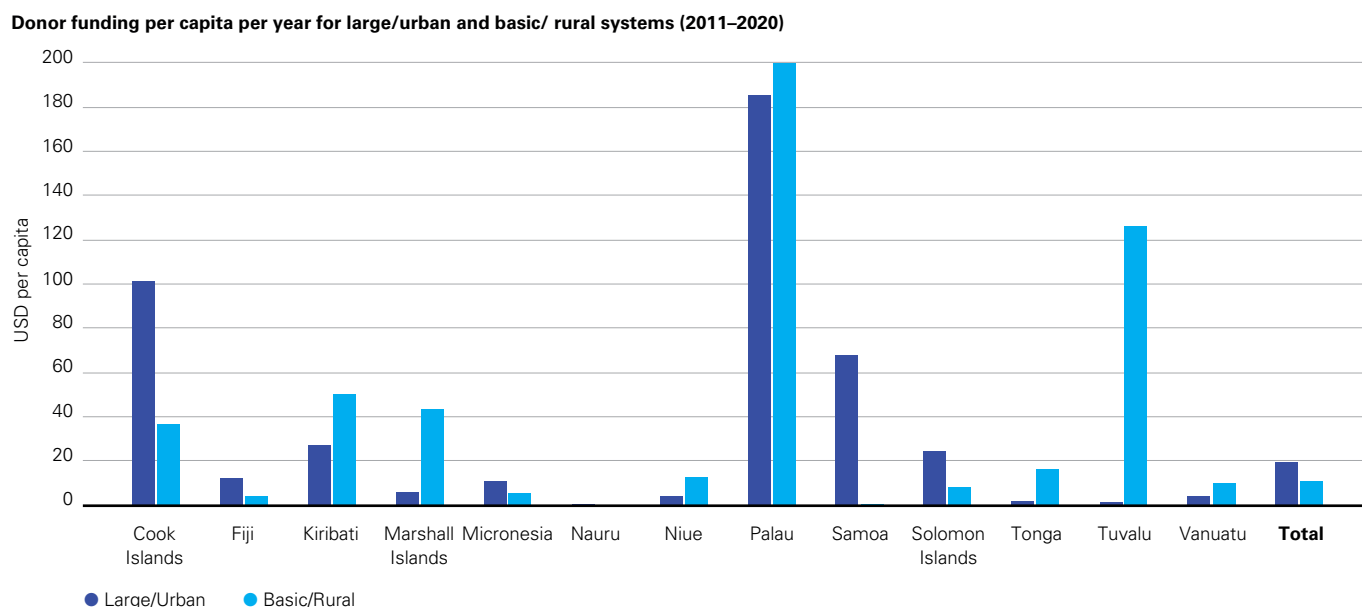
Between 2011 and 2020, around 24% of donor funding was directed to water supply systems and 19% for sanitation systems (Figure 19). A further 32% of donor funding was directed to combined water and sanitation systems. Large water and sanitation systems have tended to receive more donor funding than basic systems, with 40% of donor funding directed to large systems and 35% to basic systems. The remaining donor funding for water and sanitation has been targeted to policy and administrative management.

Figure 19. Donor funding for WASH by sub-sector



If it is assumed that large water and sanitation systems are implemented in urban areas and that basic systems are implemented in rural areas, the donor funding per capita for urban and rural areas can be estimated. Across the 14 countries examined, the donor funding per capita in urban areas was almost double that in rural areas in 2011–2020 (US\$19.4 vs US\$10.5, respectively; Figure 20). The recipient countries in which donor funding heavily favoured large systems on a per capita basis included the Cook Islands, Fiji, FSM, Samoa, and the Solomon Islands. Conversely, donor funding was higher for basic systems (on a per capita basis) for Vanuatu, Tuvalu, Tonga, Palau, Niue, the Marshall Islands, and Kiribati.

Figure 20. Donor funding per capita per year for large and basic systems



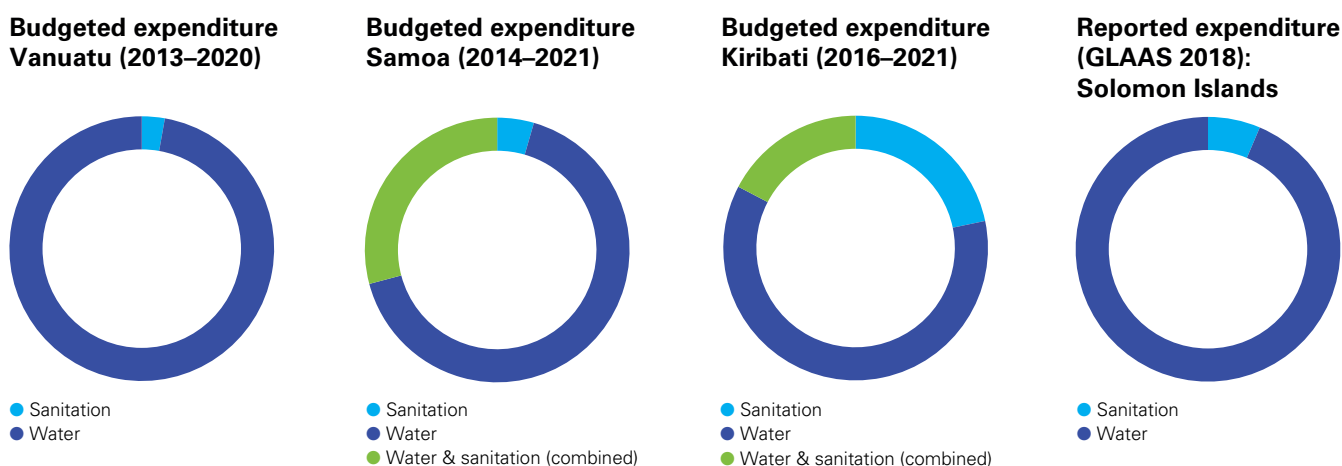
Note: The analysis assumes that large systems are implemented in urban areas and basic systems are implemented in rural areas.

The countries in which donor funding was more skewed towards water included Tuvalu (73% for water systems vs 1% sanitation systems), Samoa (22% vs 0%, respectively), the Marshall Islands (37% vs 17%, respectively), and Nauru (30% vs 0%, respectively). Conversely, the donor funding in Niue (10% water systems, 45% sanitation systems) and Fiji (33% and 53%, respectively) tended to favour sanitation systems.

Government budget statements indicate only 3% of the budgeted expenditure in Vanuatu was directed to sanitation, whereas the budget statements from Samoa and Kiribati suggest that water supply systems received more than twice the amount received by sanitation systems (Figure 21). GLAAS data for the Solomon Islands also revealed a preference for water supply, with only 6.4% of funding was directed to sanitation.

5. COMPOSITION OF WASH SPENDING continued

Figure 21. Breakdown of WASH expenditure by water and sanitation sub-sectors (budget statements, GLAAS)



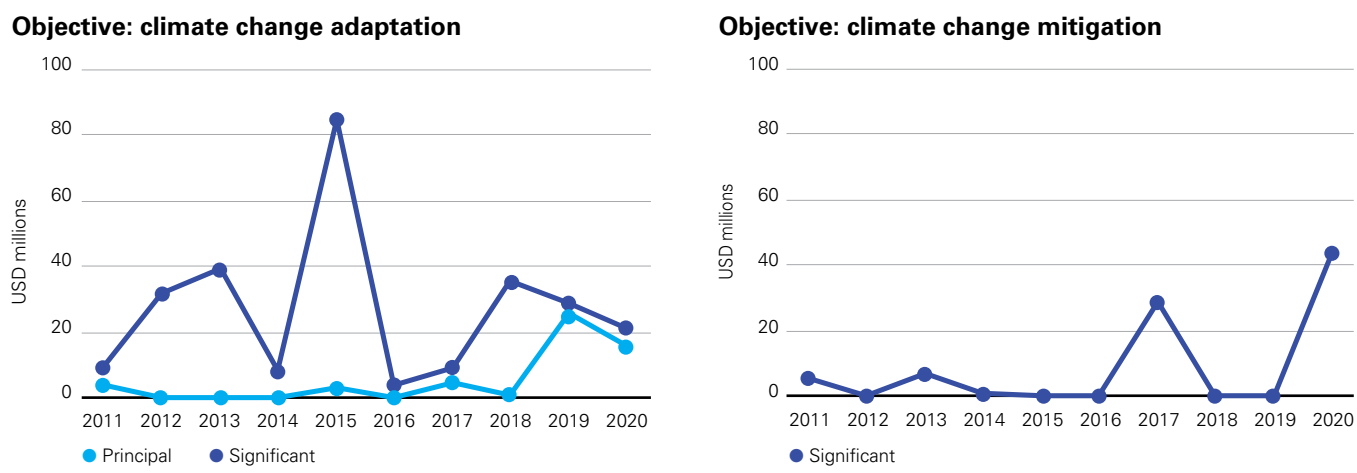
Note: 'Water and sanitation (combined)' refers to the expenditure on initiatives that include both water and sanitation components, the costs of which cannot be disaggregated.

Between 2011 and 2019, around US\$255 million of donor commitments for water and sanitation were marked as having climate as the principal or a significant objective (US\$214 million as a significant objective and US\$41 million as a principal objective) (Figure 22). Most of these commitments were directed towards adaptation rather than mitigation.

In 2019, there was a notable increase in water and sanitation commitments with climate change adaptation as the principal objective. Water and sanitation constituted 11% of all commitments with climate change adaptation as the principal objective in 2011–2019, but that increased to 36% in 2019. In contrast, water and sanitation attracted only 0.1% of the committed funding with mitigation as the principal objective.

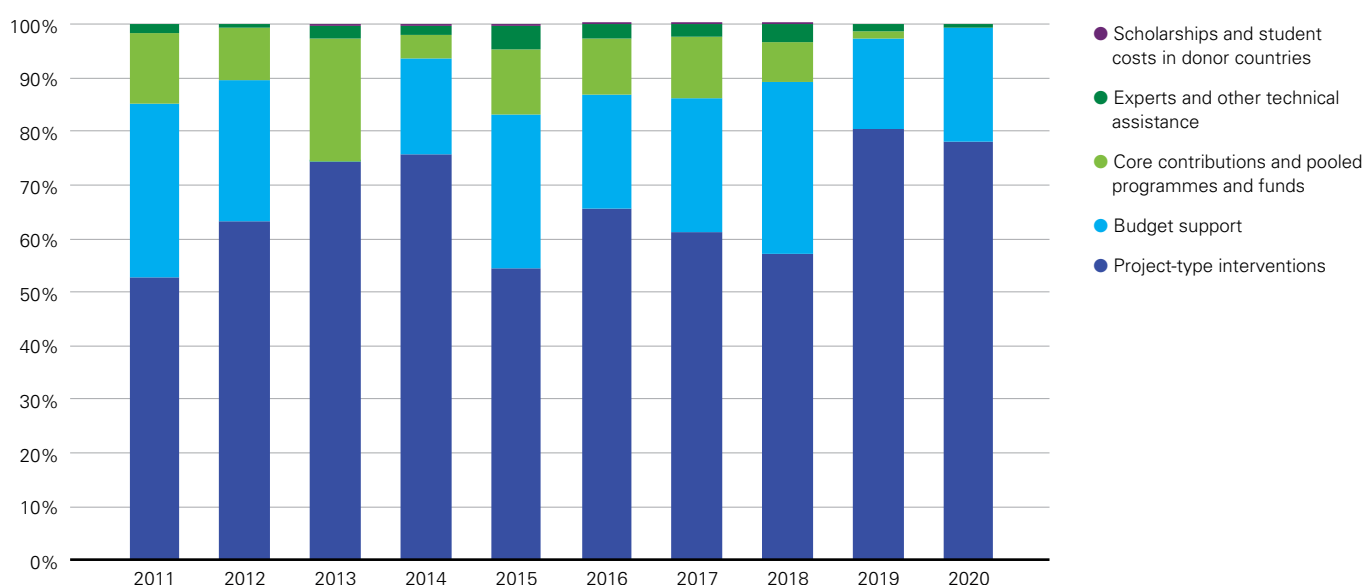
5. COMPOSITION OF WASH SPENDING continued

Figure 22. Donor funding for water and sanitation in the Pacific that had climate as the principal or a significant objective



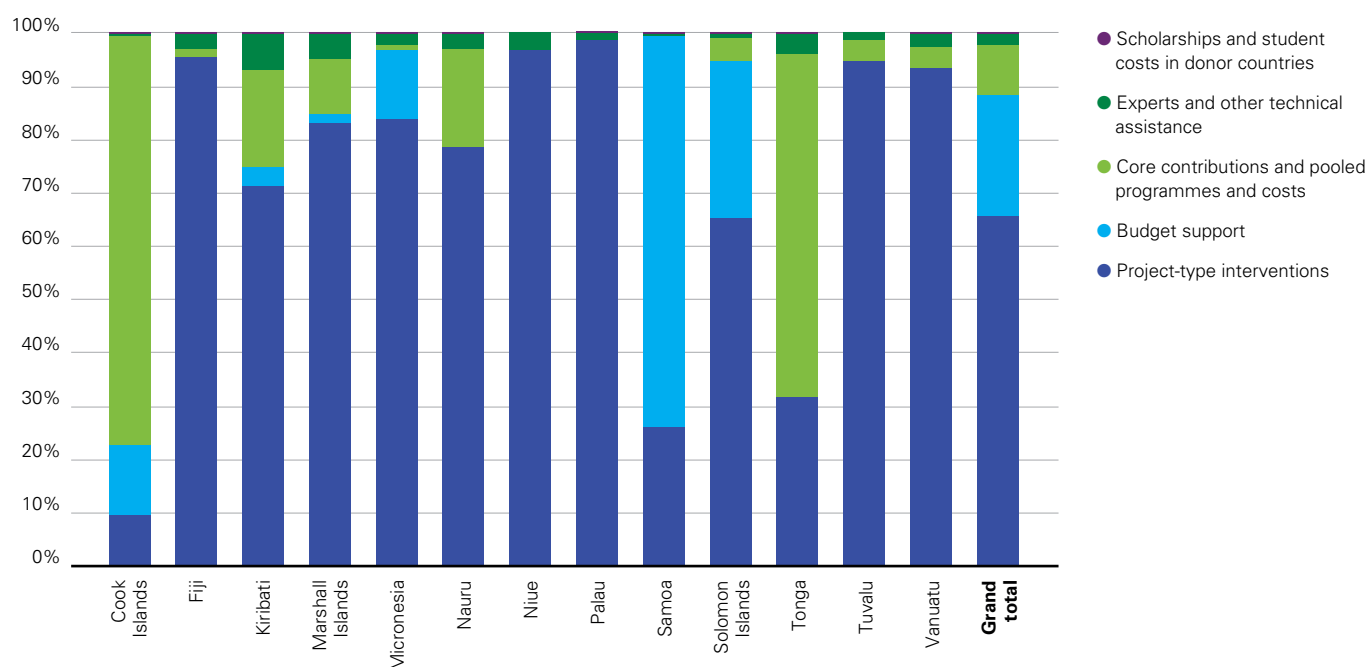
WASH spending by donors appears to have been weighted towards capital ‘project-type’ interventions, particularly in recent years. Between 2011 and 2020, two thirds of donor funding for WASH was directed towards project-type interventions, increasing to 80% in 2019–2020. In comparison, funds for budget support constituted 23% of donor funding between 2011 and 2020 (Figure 23). However, there are outliers. Samoa’s budget statement described donor-funded budget from the EU, and the OECD data indicates this budget support amounts to 73% of donor funding for WASH in Samoa. Other countries that have received a relatively high proportion of donor funding in the form of budget support include FSM (13%) and the Solomon Islands (30%).

Figure 23. Donor funding for WASH in the Pacific by type of aid and year (2011–2020)



5. COMPOSITION OF WASH SPENDING continued

Figure 24. Donor funding for WASH in the Pacific by type of aid and recipient country (2011–2020)



6. HOUSEHOLD FUNDING

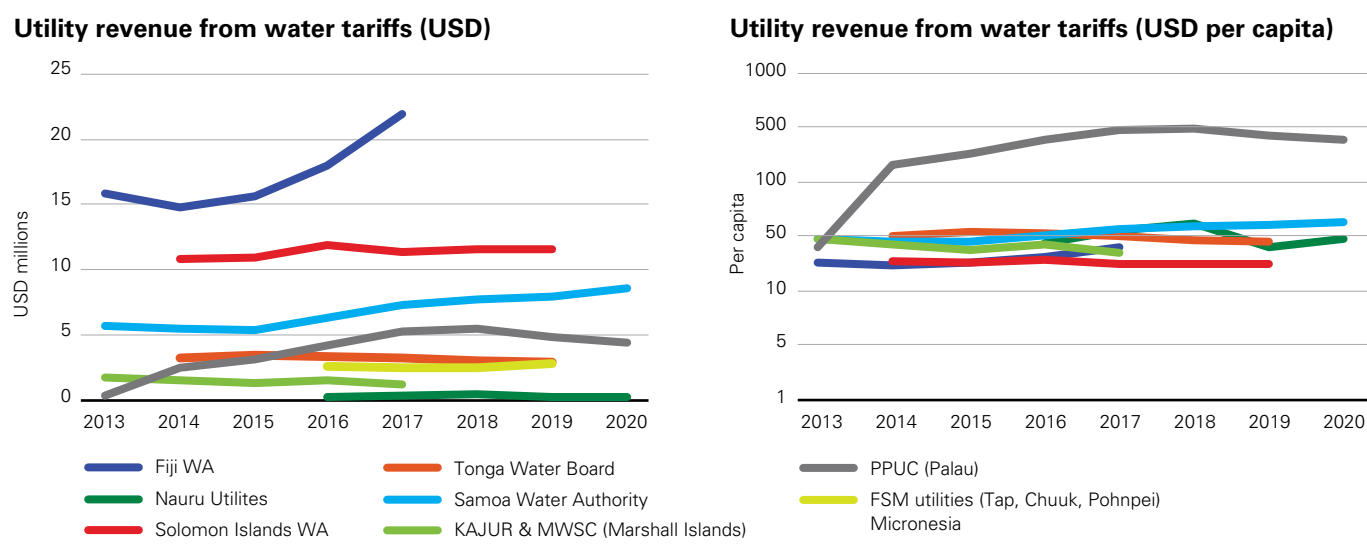


When estimating household expenditure on WASH, four components were considered: (i) payments to utilities for water and sanitation services; (ii) payment for the construction of on-site sanitation facilities; (iii) payment for household water tanks; and (iv) payment for the installation of hand-washing facilities.

Payments to utilities for water and sanitation services

Financial data were extracted for utilities operating in eight countries. The total payments by utility customers were typically equivalent to US\$20–40 per capita per year when spread across the entire population, with the exception of Palau (Figure 25). These calculations were only based on the revenue from end-users, and did not include the government subsidies that are often transferred to these utilities (which would already be captured in the budget analysis). However, the end-users included commercial and institutional water users in addition to regular households.

Figure 25. Utility revenue from water and wastewater tariffs in eight Pacific Island countries



6. HOUSEHOLD FUNDING continued

Data on household expenditure on water and sanitation services were also extracted from 11 Household Income and Expenditure Surveys (HIES). These surveys are national in scope and should therefore capture households paying for water and sanitation services even if not provided by a regulated utility (e.g., a rural piped scheme). The average household expenditure in these surveys varied widely from US\$1.4 per capita in Niue to US\$60.1 per capita in Palau (Figure 26). On average, the household expenditure on water and sanitation services ranged between 0.0% and 1.9% of total household expenditure. For countries with available data from both HIES and utility revenue, the estimates from the two data sources were in most cases reasonably aligned:

- **Samoa:** utility revenue suggested an expenditure of US\$30 per person in 2013 vs US\$44 in the HIES.
- **Tonga:** utility revenue suggested an expenditure of US\$34 per person in 2015 vs US\$33 in the HIES.

- **Solomon Islands:** utility revenue suggested an expenditure of US\$18 per person in 2015 vs US\$8 in the HIES.
- **Palau:** utility revenue suggested an expenditure of US\$141 per person in 2014 vs US\$60 in the HIES. This discrepancy can be explained by the fact that residential water users accounted for less than half of all water and wastewater, and the per capita revenue from household water use in 2014 was around US\$56 per person, consistent with the HIES.
- **Fiji:** utility revenue suggested an expenditure of US\$25 per person in 2017 vs US\$16 in the MICS in 2021.

Of the six countries that distinguished household expenditure on water and sanitation according to place of residence (urban vs rural), the majority of spending occurred in urban areas for five countries (Figure 27). On a per capita basis, the average household expenditure on water and sanitation services was far higher in urban than in rural areas in all countries with available data.

Figure 26. Annual household expenditure on water supply and sanitation (USD per capita) calculated from Household Income and Expenditure Surveys (HIES) and Multiple Indicator Cluster Surveys (MICS)

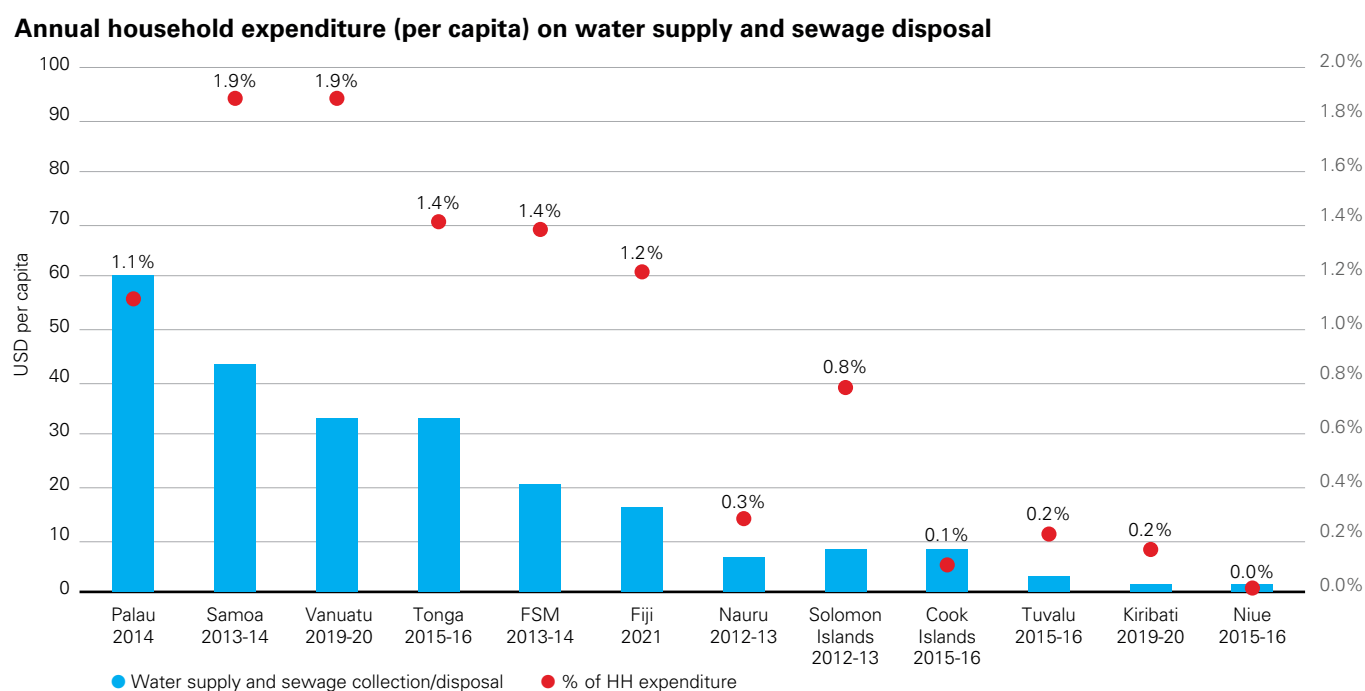
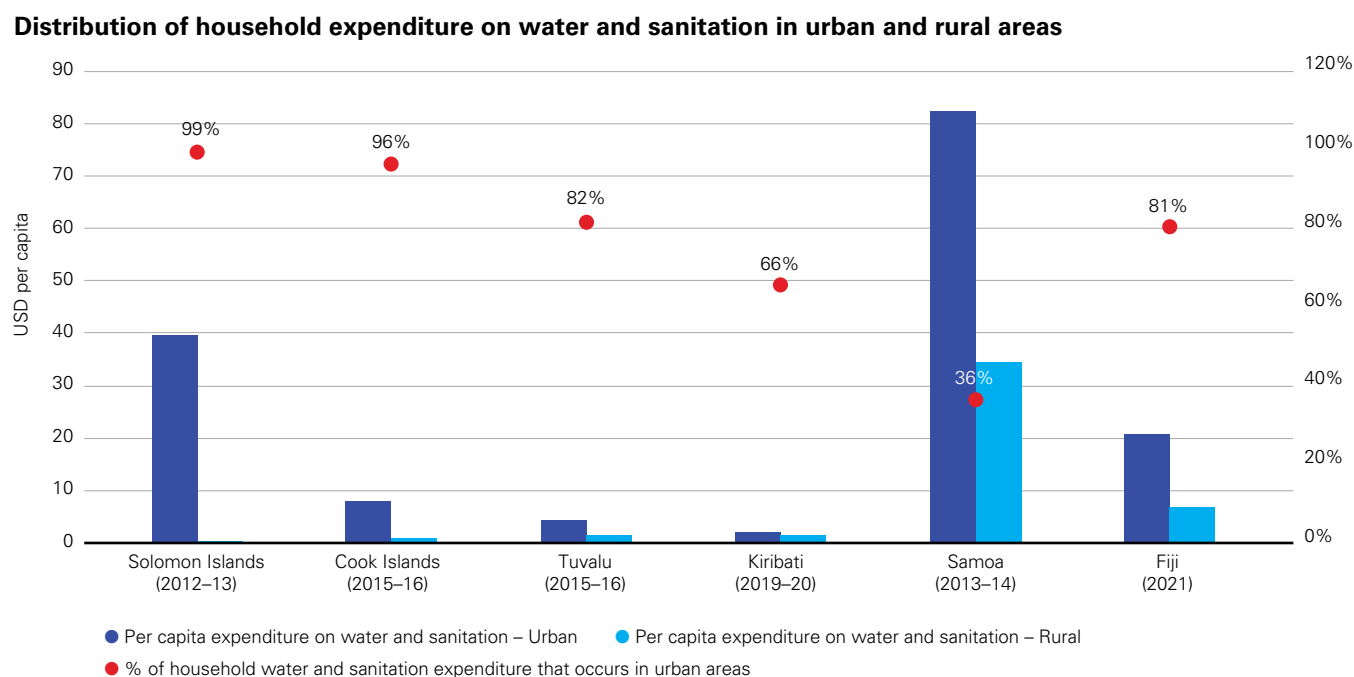


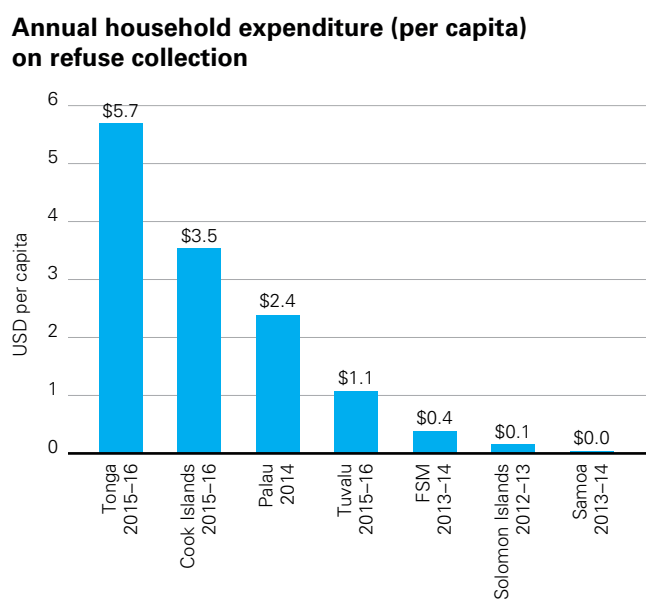
Figure 27. Household expenditure on water and sanitation in urban vs rural areas (USD per capita) from HIES and MICS



Note: The surveys for Kiribati, Vanuatu, FSM, Samoa, and Fiji did not specifically capture data on sewage collection and disposal.

Household expenditure on solid waste collection was substantially lower in the seven countries with available data from HIES (Figure 28). On average, Tongan households spent most on solid waste collection (US\$5.7 per person per year), whereas Samoan households spent almost nothing.

Figure 28. Annual household expenditure on refuse collection (USD per capita) from Household Income and Expenditure Surveys

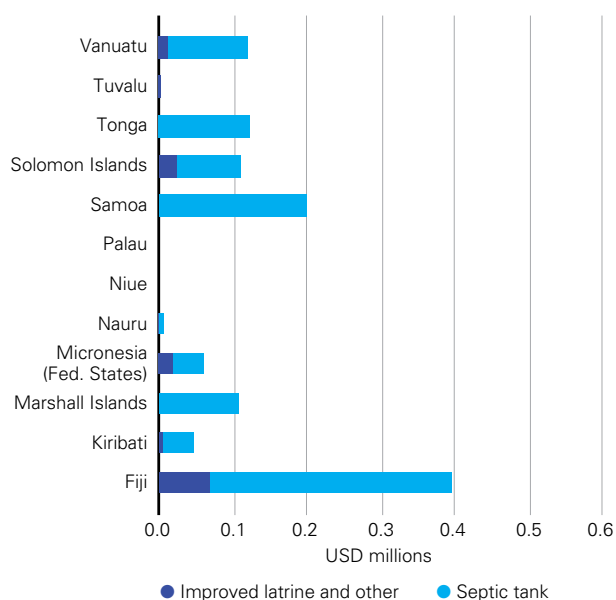


Household expenditure on on-premises WASH facilities

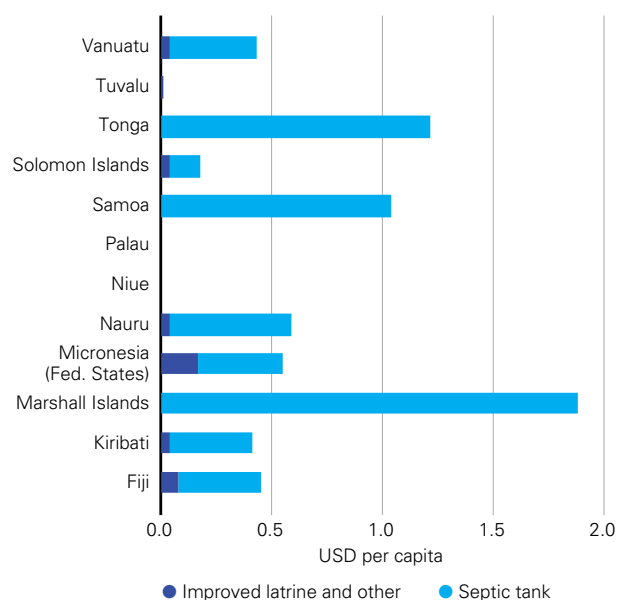
When the number of people gaining access to on-site sanitation is combined with the unit cost assumptions from a previous SDG costing study (Hutton and Varughese, 2016), the estimated household expenditure on on-site sanitation in 2011–2020 summed to US\$1.17 million per year. This was equivalent to around US\$0.49 per person per year (Figure 29). The majority of this total (89%) pertained to septic tanks. The countries with the highest per capita expenditure were the Marshall Islands, Samoa, and Tonga (all above US\$1 per person per year). It is noteworthy that the estimate for septic tank expenditure in Vanuatu (US\$0.39 per person per year) was slightly higher than the estimated expenditure on septic tanks based on the 2010 HIES (US\$0.25 per person per year).

Figure 29. Estimated total annual expenditure on on-site sanitation

Average annual expenditure on on-site sanitation 2010–2020



Average annual expenditure on on-site sanitation (per capita): 2010–2020

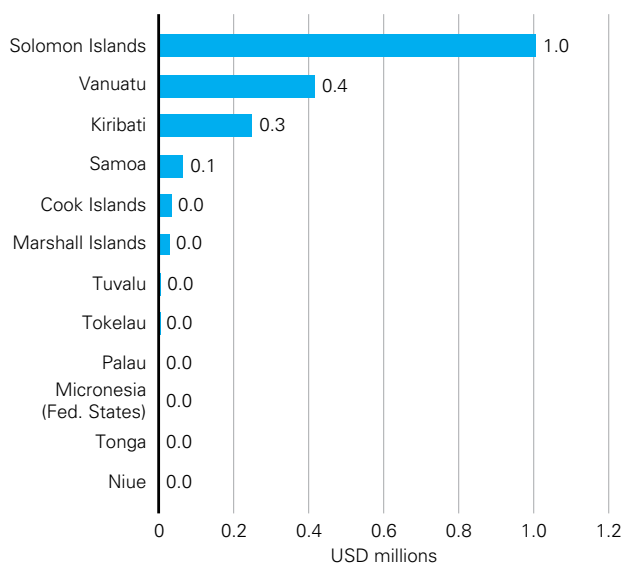


When the number of people gaining access to household water tanks (see Appendix) is combined with the unit cost assumptions, the household expenditure in 2011–2020 summed to US\$1.8 million per year. This is equivalent to around US\$0.74 per person per year (Figure 30). The household expenditure on water tanks was estimated to exceed US\$1 per person per year in four countries: the Cook Islands, Kiribati, the Solomon Islands, and Vanuatu. However, these estimates differed considerably from the HIES data on water tank expenditure:

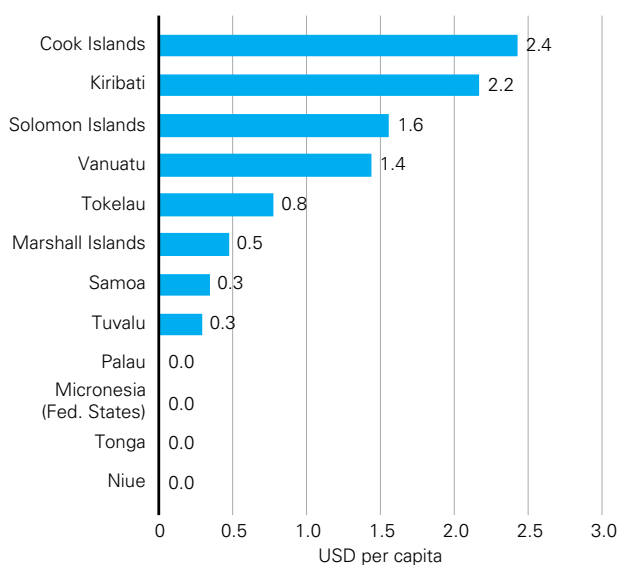
- the water tank estimate for Tokelau (US\$0.77 per person per year) was substantially lower than that suggested by the 2015–2016 HIES (US\$38 per person per year).
- the water tank estimate for Vanuatu (US\$1.4 per person per year) was substantially higher than that suggested by the 2010 HIES (US\$0.17 per person per year).

Figure 30. Estimated total annual expenditure on household water tanks

Average annual expenditure on household water tanks 2010–2020



Average annual expenditure on household water tanks 2010–2020 (per capita): 2010–2020



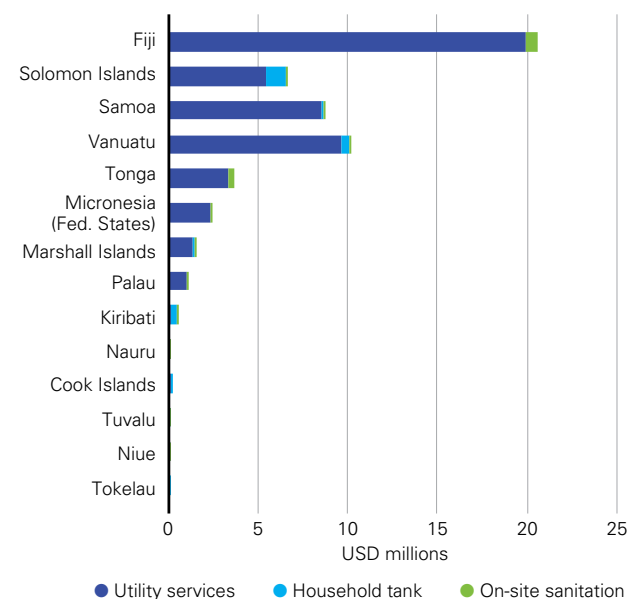
6. HOUSEHOLD FUNDING continued

When all forms of household expenditure for the period 2016–2020 are combined, an estimated US\$56 million was spent by households every year, equivalent to US\$23 per person per year (Figure 31). Around 94% of this expenditure was in the form of tariffs for utility services. When these estimates are compared with those reported in GLAAS, two of three countries show concordance:

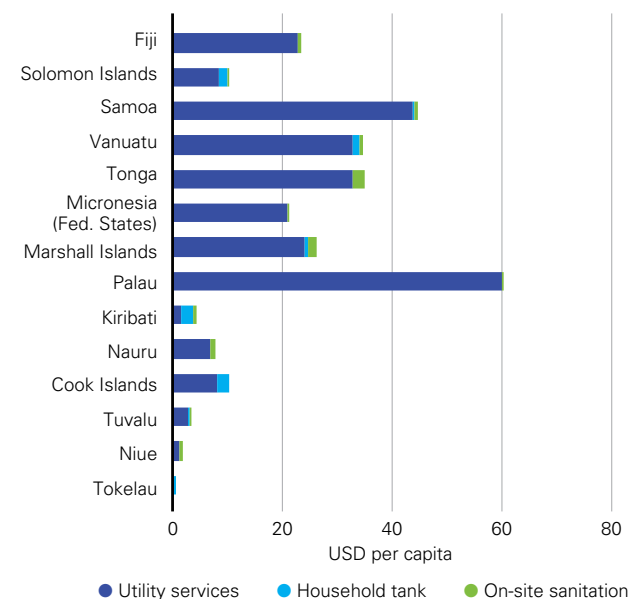
- **Fiji:** in 2016, GLAAS reported a total household expenditure of US\$19.3 million compared with the estimate here of US\$20.6 million
- **Solomon Islands:** in 2016 and 2018, GLAAS reported a total household expenditures of US\$12.9 million and US\$12.3 million, respectively, compared with the estimate here of US\$12.8 million
- **Vanuatu:** in 2016, GLAAS reported a total household expenditure of US\$4,000 compared with the estimate here of US\$10.2 million

Figure 31. Total estimated household expenditure on WASH per year

Estimated annual household expenditure on WASH (USD)



Estimated annual household expenditure on WASH (USD per capita)



7. TOTAL WASH EXPENDITURE



7. TOTAL WASH EXPENDITURE *continued*

The available data suggest that US\$230–270 million is spent on water and sanitation across 14 Pacific Island countries every year, or US\$90–110 per person per year (Tables 3 & 4).⁷ This is equivalent to 2%–2.5% of GDP.

Approximately 20%–25% of this expenditure comes from donors, 20%–25% from users, and 50%–55% from domestic governments. When Fiji is excluded, the per capita expenditure drops to US\$55–80 per person, with donors and households becoming the major sources of funding (45%–55% and 35%–45%, respectively), and government contributions dropping to 10%–15%.

Table 3. Estimated mean annual expenditure on WASH, 2016–2020 (USD, millions)

Country	Government budget [A]	Domestic funding [B]	Donor funding [C]	End users [D]	Total			Other ODA with WASH components	WASH as % of GDP
					Method 1 [A]+[D]	Method 2 [B]+[C]+[D]	Best estimate		
Cook Islands	9.4	–	2.2	0.1	9.6	≥2.3	9.6	1.1	2.5%
Fiji	113.0	109.3	8.6	20.6	133.6	138.5	138.5	1.3	2.5%
Kiribati	15.5	1.4	5.5	0.5	16.0	7.4	7.4	0.5	4.1%
Marshall Islands	2.4	2.3	2.2	1.5	3.9	6.0	6.0	0.6	2.6%
Micronesia	–	–	0.8	2.4	≥2.4	≥3.2	≥3.2	0.1	0.8%
Nauru	0.3	–	0.4	0.1	0.4	≥0.5	0.5	3.2	0.4%
Niue	0.3	–	0.0	0.0	0.3	≥0.0	0.3	0.1	1.1%
Palau	2.2	1.7	7.9	1.1	3.2	10.7	10.7	0.0	3.8%
Samoa	24.2	0.1	8.2	8.8	33.0	17.2	33.0	0.8	3.9%
Solomon Islands	1.1	0.6	8.2	6.7	7.7	15.5	15.5	0.1	1.0%
Tokelau	0.1	–	0.0	0.0	0.1	≥0.0	0.1	0.0	1.3%
Tonga	3.9	0.1	1.1	3.6	7.6	4.9	7.6	0.1	1.5%
Tuvalu	0.5	0.2	0.3	0.0	0.5	0.6	0.6	0.1	1.3%
Vanuatu	1.7	1.2	4.8	10.2	11.9	16.2	16.2	4.1	1.7%
Category A	12.8	1.9	10.8	1.3	14.2	14.1	21.8	4.5	2.5%
Category B	21.8	3.9	9.6	8.1	29.9	21.6	24.2	1.3	1.8%
Category C	140.0	111.3	29.9	46.2	186.2	187.4	203.3	6.3	2.3%
Total	174.7	117.1	50.3	55.6	230.3	230.6	249.3	12.0	2.3%
Total (excl. Fiji)	61.7	7.8	41.6	35.1	96.7	84.5	110.7	10.7	2.0%

Note: Category A refers to countries with a population of < 50,000; Category B refers to countries with a population of 50,000–150,000; Category C refers to countries with a population of > 150,000.

⁷ Estimates exclude waste management and disposal.

7. TOTAL WASH EXPENDITURE *continued*

Table 4. Estimated mean annual expenditure on WASH per capita, 2016–2020 (USD)

Country	Government budget [A]	Domestic funding [B]	Donor funding [C]	End users [D]	Total			Other ODA with WASH components
					Method 1 [A]+[D]	Method 2 [B]+[C]+[D]	Best estimate	
Cook Islands	714.6	-	166.1	10.5	725.2	≥176.7	725.2	85.9
Fiji	127.9	123.8	9.7	23.5	151.4	157.0	157.0	1.4
Kiribati	132.7	12.2	47.2	4.4	137.0	63.8	63.8	4.1
Marshall Islands	41.3	40.1	37.2	26.4	67.7	103.7	103.7	9.5
Micronesia	-	-	7.1	21.4	≥21.4	≥28.5	≥28.5	0.6
Nauru	26.1	-	38.8	7.8	34.0	≥46.6	46.6	295.4
Niue	448.3	-	1.4	2.1	450.4	≥3.5	450.4	174.9
Palau	121.5	95.2	441.8	60.2	181.7	597.2	597.2	0.0
Samoa	123.5	0.5	42.0	44.9	168.4	87.4	168.4	4.0
Solomon Islands	1.6	1.0	12.6	10.2	11.8	23.8	23.8	0.2
Tokelau	100.7	-	0.0	0.8	101.5	≥0.8	101.5	0.0
Tonga	38.2	1.4	11.0	35.2	73.4	47.6	73.4	1.5
Tuvalu	43.0	17.7	29.3	3.4	46.4	50.4	50.4	6.5
Vanuatu	5.8	4.2	16.2	34.7	40.6	55.1	55.1	14.0
Category A	232.1	64.5	196.0	24.3	256.4	382.6	394.1	81.1
Category B	78.6	14.1	24.6	20.7	99.0	66.1	62.1	3.2
Category C	69.1	54.9	14.7	22.8	91.9	92.5	100.3	3.1
Total	74.0	50.2	20.3	22.5	96.6	96.3	100.9	4.9
Total (excl. Fiji)	41.8	5.4	26.2	22.1	63.9	54.2	69.8	6.8

Note: Category A refers to countries with a population of < 50,000; Category B refers to countries with a population of 50,000–150,000; Category C refers to countries with a population of > 150,000.

The annual expenditure on waste management is around US\$8–12 million (US\$3–5 per person per year), equivalent to 3%–5% of water and sanitation expenditure. The funding for waste management largely derives from donors and domestic governments (45%–50% each), with household contributions amounting to only 5%–10%. When Fiji is excluded, donor funds amount to 60%–65% of the spending on waste management, with domestic government contributions dropping to 25%–30%.

7. TOTAL WASH EXPENDITURE *continued*

Table 5. Estimated mean annual expenditure on waste management, 2016–2020 (USD, millions)

Country	Government budget [A]	Domestic funding [B]	Donor funding [C]	End users [D]	Total		
					Method 1 [A]+[D]	Method 2 [B]+[C]+[D]	Best estimate
Cook Islands	0.5	-	0.8	0.04	0.5	0.9	0.9
Fiji	3.2	3.2	0.1	-	3.2	3.4	3.4
Kiribati	0.4	0.0	0.5	-	0.4	0.5	0.5
Marshall Islands	0.3	0.3	0.1	-	0.3	0.4	0.4
Micronesia	-	-	0.2	0.05	-	0.2	0.2
Nauru	0.0	0.0	0.0	-	0.0	0.0	0.0
Niue	0.0	0.0	0.0	-	0.0	0.0	0.0
Palau	0.0	0.0	2.6	0.04	0.0	2.6	2.6
Samoa	1.1	1.1	0.3	0.00	1.1	1.4	1.4
Solomon Islands	-	-	0.5	0.09	-	0.6	0.6
Tokelau	0.0	0.0	0.0	-	0.0	0.0	0.0
Tonga	0.0	-	0.2	0.63	0.7	0.8	0.8
Tuvalu	1.4	0.9	0.4	0.01	1.4	1.3	1.4
Vanuatu	0.0	0.0	0.0	-	0.0	0.0	0.0
Total	7.0	5.5	5.9	0.86	7.7	12.3	12.4
Total (excl. Fiji)	3.8	2.3	5.7	0.86	4.5	8.9	9.0

7. TOTAL WASH EXPENDITURE *continued*

Table 6. Estimated mean annual expenditure on waste management per capita, 2016–2020 (USD)

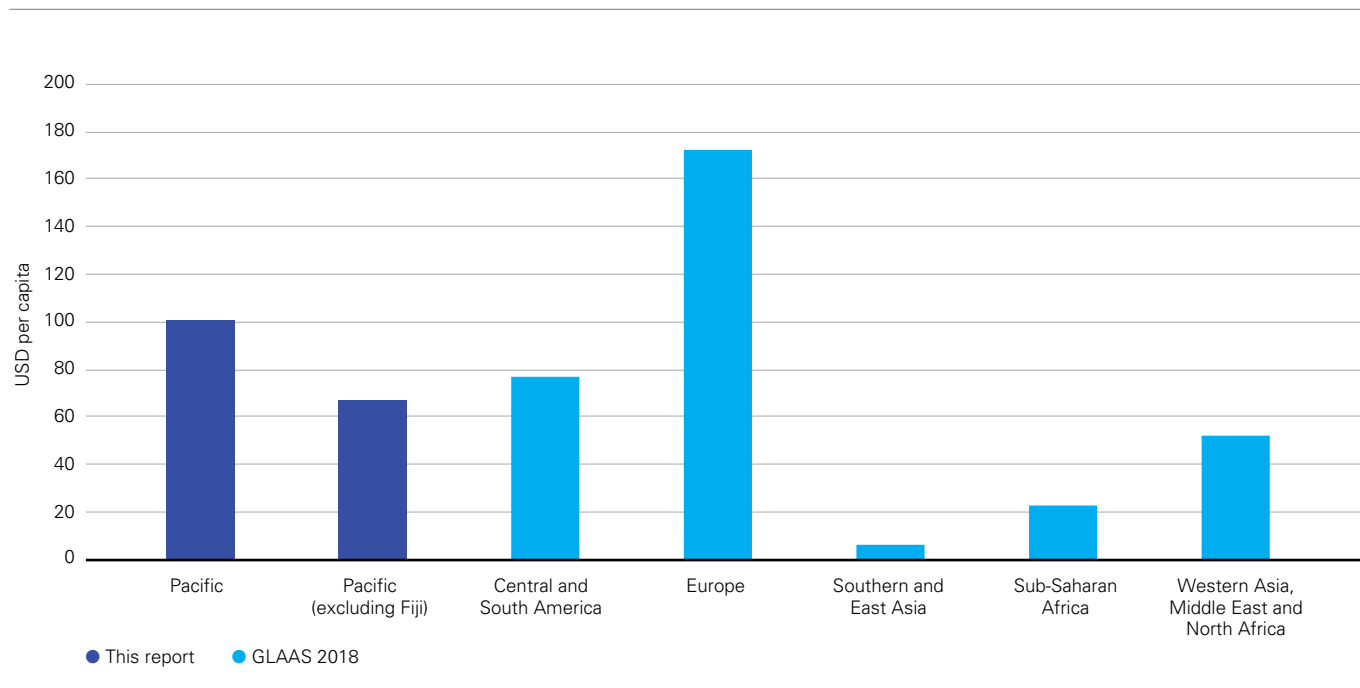
Country	Government budget [A]	Domestic funding [B]	Donor funding [C]	End users [D]	Total		Best estimate
					Method 1 [A]+[D]	Method 2 [B]+[C]+[D]	
Cook Islands	36.1	-	63.1	3.4	39.5	66.4	66.4
Fiji	3.6	3.6	0.2	-	3.6	3.8	3.8
Kiribati	3.6	0.0	4.6	-	3.6	4.6	4.6
Marshall Islands	5.3	5.3	1.7	-	5.3	7.0	7.0
Micronesia	-	-	1.6	0.4	-	2.0	2.0
Nauru	0.0	0.0	2.2	-	0.0	2.2	2.2
Niue	0.0	0.0	10.8	-	0.0	10.8	10.8
Palau	0.1	0.0	143.3	2.5	2.6	145.7	145.7
Samoa	5.8	5.8	1.5	0.0	5.8	7.3	7.3
Solomon Islands	.	.	0.8	0.1	-	0.9	0.9
Tokelau	6.7	6.7	0.0	-	6.7	6.7	6.7
Tonga	0.4	0.4	1.9	6.1	6.4	8.4	8.4
Tuvalu	121.6	74.4	36.9	1.1	122.7	112.4	122.7
Vanuatu	0.0	0.0	0.1	-	0.0	0.1	0.1
Total	4.1	3.3	2.4	0.8	4.5	5.0	5.0
Total (excl. Fiji)	4.6	2.9	3.6	0.8	5.5	5.6	5.7

Compared with other regions represented in the 2018 GLAAS survey, WASH expenditure per capita in the Pacific appears relatively high (Figure 32). The average expenditure per capita for the Pacific is three times the pooled average for 54 other countries that reported their total expenses in the GLAAS survey, and in regional terms, is second only to Europe. However, progress

towards SDG6 in the Pacific has been slower than in other regions that have had lower levels of expenditure. The relatively high unit costs of implementing WASH programmes in the Pacific may explain this paradox, at least in part. In the Pacific, populations are difficult to serve and a range of costs, such as transportation and materials, are substantially higher than in other regions.

7. TOTAL WASH EXPENDITURE continued

Figure 32. Annual WASH expenditure per capita: Pacific countries vs other regions (based on GLAAS 2018 data)





8. RETURNS ON INVESTMENT

Cover photo: UNICEFPacific

8. RETURNS ON INVESTMENT continued

When funding levels are compared with the number of people gaining access to certain water and sanitation service levels, WASH spending was associated with the following returns:



For every million dollars spent on WASH by governments and donors in the Pacific in 2015–2020, there was a net gain of **120–130 people** connected to a piped water or sewerage network and **320–340 people** gained access to a basic water or sanitation service.



For every million dollars of donor funding invested in WASH in 2011–2019, there was a net gain of **1,270 people** accessing a basic service and **394 connected** to a piped water supply or sewerage service.



For every million dollars of donor funding invested specifically in water systems, **639–1,513 people** gained access to a basic water service and **216–512 people** were connected to a piped water supply.

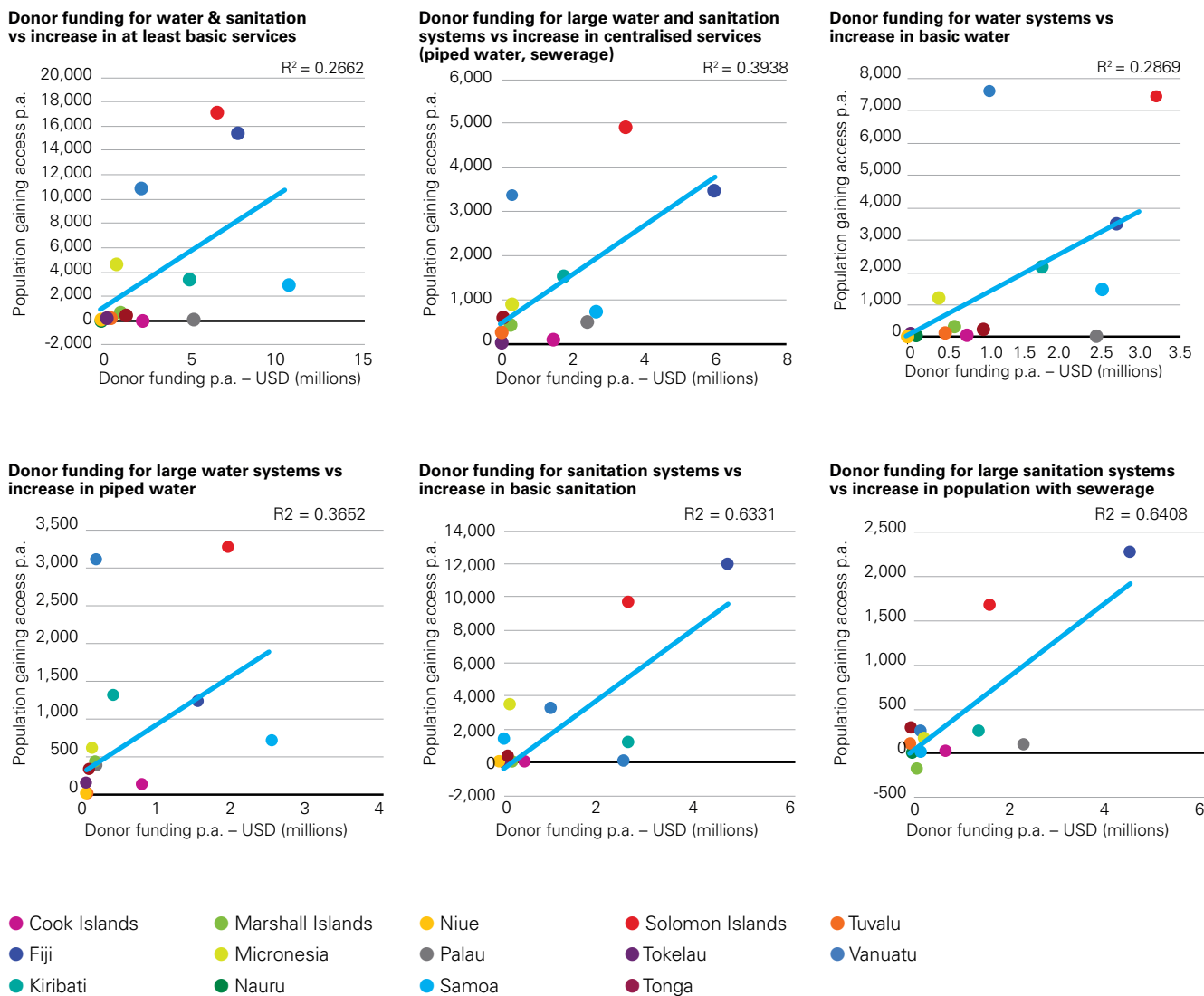


For every million dollars of donor funding invested specifically in sanitation systems, **976–2,530 people** gained access to a basic sanitation service and **97–252 people** were connected to sewerage.

A number of countries appear to have achieved greater progress than may have been expected based on the donor funding received (Figure 33). Between 2010 and 2020, the Solomon Islands and Vanuatu saw the greatest increases in access to basic and centralised services (piped water and sewerage), although they were not the recipients of most-significant donor funding. Both countries appear to have outperformed other countries in terms of water service expansion, and the Solomon Islands outperformed other countries in terms of sanitation. Exactly why this occurred requires further examination. These are two of the largest countries in terms of population, so economies of scale may have played a role. They also came from the lowest baseline

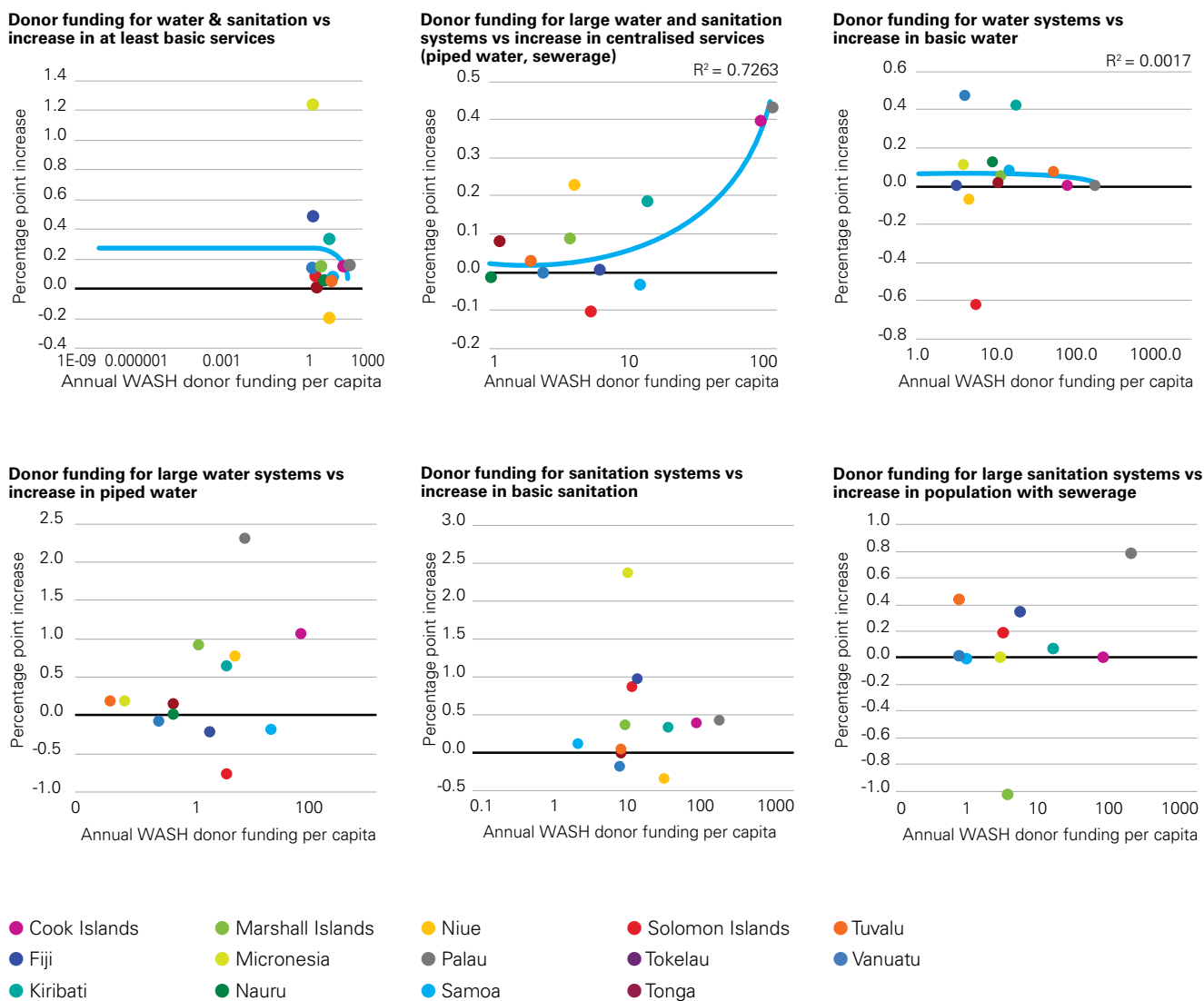
in terms of water and sanitation coverage, potentially making it easier to identify and target interventions to unserved populations. Vanuatu and the Solomon Islands also have the fastest rates of population growth (2.4% and 2.5%, respectively), so gains may partly reflect the use pre-existing services by their growing populations. It must also be noted that Vanuatu has a mechanism that promotes self-sufficiency: the tariff charged by UNELCO (the water service provider in Port Vila) includes a charge of US\$0.04 per cubic meter sold, which then goes into a Water Development Fund to improve the water services on the periphery of its service area. At the same time, the operating cost coverage ratio of UNELCO is consistently the highest in the region.

Figure 33. Donor funding for WASH (2011–2019) vs the increase in the number of people using basic, safely managed, and centralised water and sanitation services (2010–2020)



Note: For funding directed towards combined water and sanitation systems, the analysis assumed that 50% of the funds were for water and 50% for sanitation.

Figure 34. Donor funding for WASH per capita (2011–2019) vs the percentage increase in the proportion of people using basic, safely managed, and centralised water and sanitation services (2010–2020)



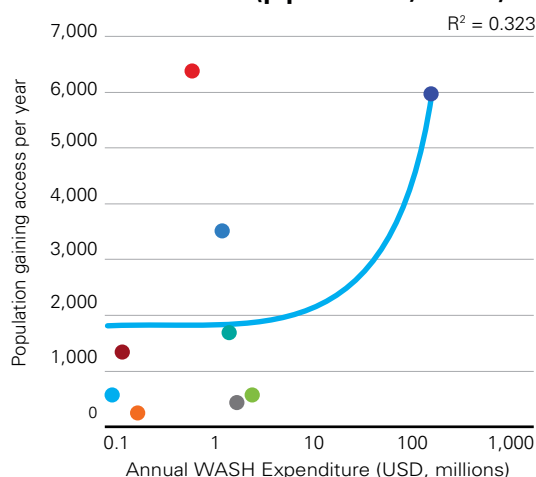
Note: For funding directed towards combined water and sanitation systems, the analysis assumed that 50% of the funds were for water and 50% for sanitation.

8. RETURNS ON INVESTMENT continued

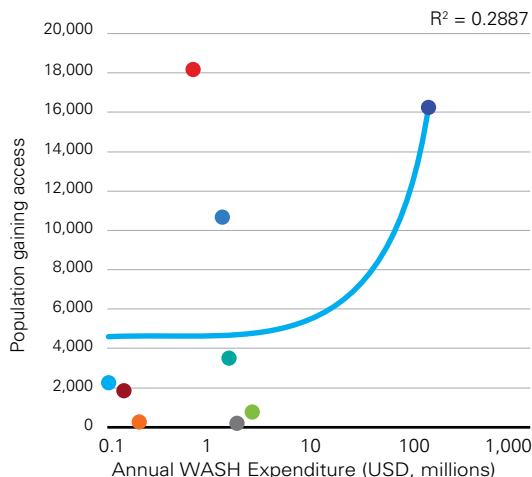
When the gains made are assessed relative to government expenditure (Figure 35) and total WASH expenditure (donors and governments combined; Figure 36), Vanuatu and the Solomon Islands again showed higher-than-expected gains relative to the expenditure levels. When gains are assessed as a percentage of the population and WASH expenditure on a per capita basis, Kiribati had greater than expected increases in WASH access in percentage point terms based on the level of expenditure.

Figure 35. WASH expenditure from domestic funding vs the increase in the use of basic, safely managed, and centralised water and sanitation services (2015–2020)

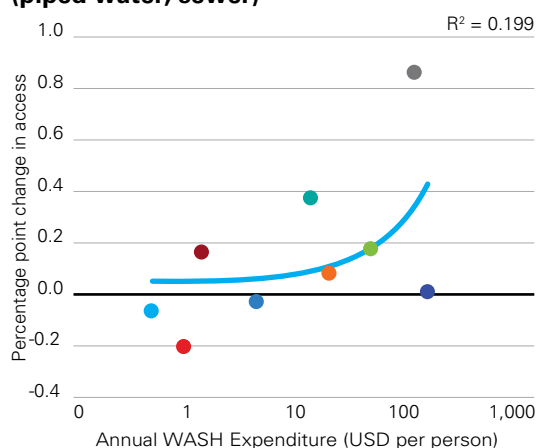
Annual WASH expenditure vs increase in centralised services (piped water, sewer)



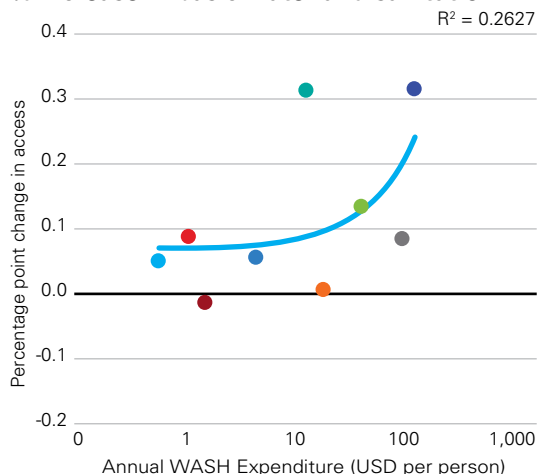
Annual WASH expenditure vs increase in basic water and sanitation



Annual WASH expenditure per capita vs % increase in centralised services (piped water, sewer)



Annual WASH expenditure per capita vs % increase in basic water and sanitation



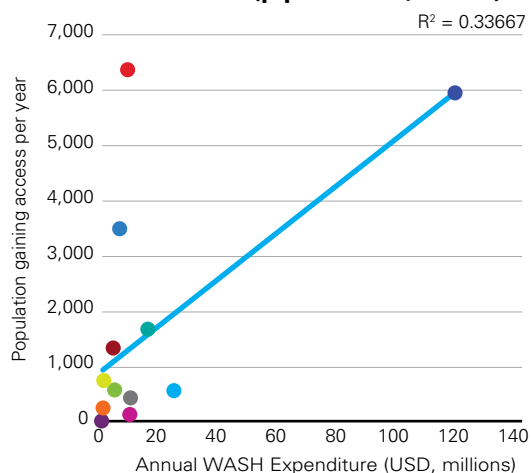
- Cook Islands
- Marshall Islands
- Niue
- Fiji
- Micronesia
- Palau
- Kiribati
- Nauru
- Samoa

- Solomon Islands
- Tuvalu
- Tokelau
- Vanuatu
- Tonga

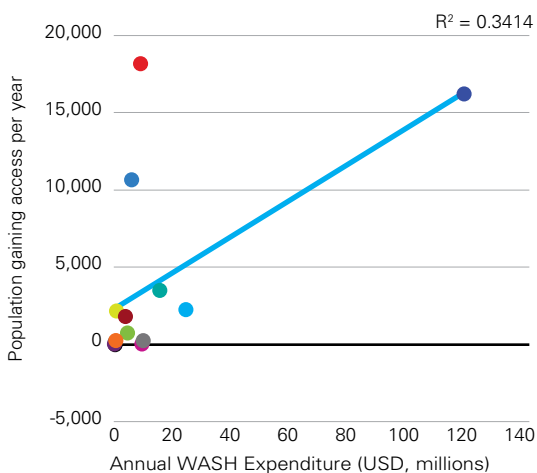
8. RETURNS ON INVESTMENT continued

Figure 36. WASH expenditure by governments and donors vs the increase in the use of basic, safely managed and centralised water and sanitation services (2015–2020)

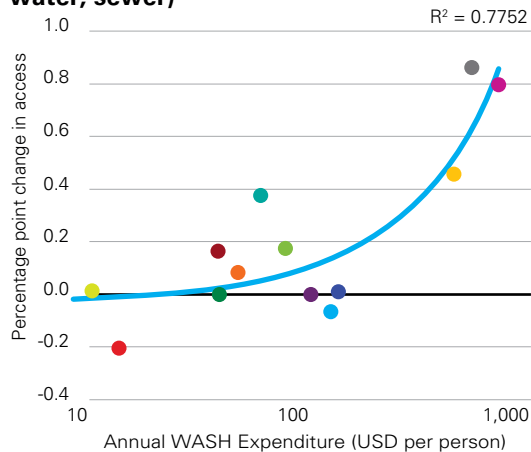
Annual WASH expenditure vs increase in centralised services (piped water, sewer)



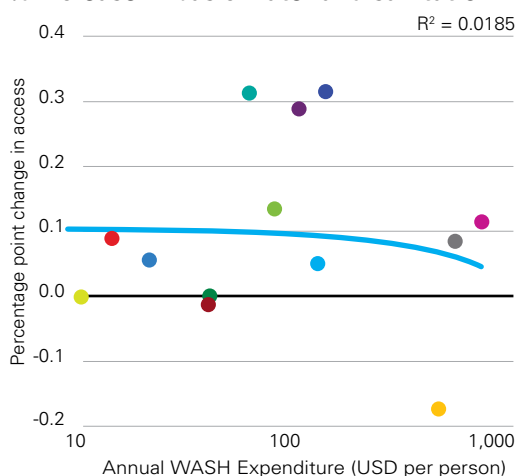
Annual WASH expenditure vs increase in basic water and sanitation



Annual WASH expenditure per capita vs % increase in centralised services (piped water, sewer)



Annual WASH expenditure per capita vs % increase in basic water and sanitation



- Cook Islands
- Marshall Islands
- Niue
- Fiji
- Micronesia
- Palau
- Kiribati
- Nauru
- Samoa

- Solomon Islands
- Tuvalu
- Tokelau
- Vanuatu
- Tonga

9. CONCLUSION



Cover photo: UNICEFPacific

Funding levels for water and sanitation in the Pacific must increase considerably if Sustainable Development Goal 6 is to be achieved by 2030. At current funding levels, basic sanitation services across 14 Pacific Island Countries are expanding at one-eighth the rate required for universal access by 2030, and access to basic water is regressing.

The challenge is even greater when the ambition is elevated to safely managed water for all. Although global-level efforts have estimated the costs involved in achieving basic and safely managed services for all, an updated and tailored estimate is urgently required for the Pacific region.

Whereas overall funding levels appear relatively high by global standards, donor contributions remain less than the household contributions made each year. Moreover, the remote island geographies in the Pacific drive up the unit costs associated with establishing and maintaining high-quality WASH services. These costs will be further exacerbated by the challenge of ensuring that these services are resilient against climate change.

Given the heightened risk that climate change poses to water and sanitation services in Pacific Island Countries, climate finance will be an important source of the additional funding required to achieve SDG6 in the Pacific. Of the funding commitments for which climate change adaptation has been the principal objective since 2011, only 11% have been for water and sanitation activities. The equivalent ratio globally is 37%.

Where WASH funding is directed also requires attention, with the current funding levels not necessarily oriented to where water and sanitation indicators that are lagging most. In particular, Vanuatu, the Solomon Islands, and the Federated States of Micronesia have considerable sub-populations that still lack basic water and sanitation services, but have received below-average levels of donor funding for water and sanitation.



10. APPENDICES

Photo: UNICEF

APPENDIX I

Table A1. Definitions of water and sanitation sub-sectors in OECD International Development Statistics

Code	Sub-sector	Description
14010	Water sector policy and administrative management	Water sector policy and governance, including legislation, regulation, planning, and management, as well as transboundary management of water; institutional capacity development; activities supporting the Integrated Water Resource Management (IWRM) approach (see box below).
14015	Water resources conservation (including data collection)	Collection and use of quantitative and qualitative data on water resources; creation and sharing of water knowledge; conservation and rehabilitation of inland surface waters (rivers, lakes, etc.), ground water, and coastal waters; prevention of water contamination.
14020	Water supply and sanitation—large systems	Programmes in which components according to 14021 and 14022 cannot be identified. When components are known, they should be reported individually under their respective purpose codes: water supply [14021], sanitation [14022], and hygiene [12261].
14021	Water supply—large systems	Potable water treatment plants; intake works; storage; water supply pumping stations; large-scale transmission/conveyance and distribution systems.
14022	Sanitation—large systems	Large-scale sewerage, including trunk sewers and sewage pumping stations; domestic and industrial wastewater treatment plants.
14030	Basic drinking water supply and basic sanitation	Programmes in which components according to 14031 and 14032 cannot be identified. When components are known, they should be reported individually under their respective purpose codes: water supply [14031], sanitation [14032], and hygiene [12261].
14031	Basic drinking water supply	Rural water supply schemes using hand pumps, spring catchments, gravity-fed systems, rainwater collection and fog harvesting, storage tanks, and small distribution systems typically with shared connections/points of use. Urban schemes using hand pumps and local neighbourhood networks, including those with shared connections.
14032	Basic sanitation	Latrines, on-site disposal and alternative sanitation systems, including the promotion of household and community investments in the construction of these facilities. (Use code 12261 for activities promoting improved personal hygiene practices.)
14040	River basins' development	Infrastructure-focused integrated river basin projects and related institutional activities; river flow control; dams and reservoirs (excluding dams primarily for irrigation [31140] and hydropower [23065] and activities related to river transport [21040]).
14050	Waste management/disposal	Municipal and industrial solid waste management, including hazardous and toxic waste; collection, disposal, and treatment; landfill areas; composting and reuse.
14081	Education and training in water supply and sanitation	Education and training for sector professionals and service providers.

10. APPENDICES *continued*

- To assist in distinguishing between “basic” and “large systems” for “water supply” and “sanitation,” consider the number of people to be served and the per capita cost of provision of services.
- Large systems provide water and sanitation to a community through a network to which individual households are connected. Basic systems are generally shared between several households.
- Water supply and sanitation in urban areas usually necessitate a network installation. To classify such projects, consider the per capita cost of services. The per capita cost of water supply and sanitation through large systems is several times higher than that of basic services.
- Integrated Water Resources Management (IWRM) is defined as “a process that promotes the co-ordinated development and management of water, land, and related resources in order to maximise the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems”.
- Recognising that sectoral approaches to water management tend to impose unsustainably high economic, social, and ecological costs, IWRM emphasises decision making across sectors and scales.

Table A2. Budget documents reviewed

Country	Budget documents
Cook Islands	<ul style="list-style-type: none"> ● Budget Estimates 2017–2018 ● Budget Estimates 2018–2019 ● Budget Estimates 2019–2020 ● Budget Estimates 2020–2021 ● Budget Estimates 2021–2022
Fiji	<ul style="list-style-type: none"> ● Budget Estimates 2012 ● Budget Estimates 2013 ● Budget Estimates 2014 ● Budget Estimates 2015 ● Budget Estimates 2016 ● Budget Estimates 2016–2017 ● Budget Estimates 2017–2018 ● Budget Estimates 2018–2019 ● Budget Estimates 2019–2020 ● Budget Estimates 2020–2021 ● Budget Estimates 2021–2022
Kiribati	<ul style="list-style-type: none"> ● 2011 Budget ● 2012 Budget ● 2013 Budget ● 2014 Budget ● 2015 Budget ● 2016 Budget ● 2017 Budget ● 2018 Budget ● 2019 Recurrent Budget ● 2019 Development Budget ● 2020 Recurrent Budget ● 2020 Development Budget ● 2021 Recurrent Budget ● 2021 Development Budget ● 2022 Recurrent Budget ● 2022 Development Budget
Marshall Islands	<ul style="list-style-type: none"> ● Appropriations (Financial Year 2017) Act 2016 ● Appropriations (Financial Year 2018) Act 2017 ● Appropriations (Financial Year 2019) Act 2018 ● Appropriations (Financial Year 2020) Act 2019 ● Appropriations (Financial Year 2021) Act 2020
Nauru	<ul style="list-style-type: none"> ● 2016–2017 Budget ● 2017–2018 Budget ● 2018–2019 Budget ● 2018–2020 Budget ● 2020–2021 Budget ● 2021–2022 Budget ● Development Fund Annual Projects 2021–2022

10. APPENDICES *continued*

Country	Budget documents	
Niue	<ul style="list-style-type: none"> ● Government of Niue 2015–2016 Budget—Appropriation (Annual) Act 2015 ● Government of Niue 2016–2017 Budget—Appropriation (Annual) Act 2016 ● Government of Niue 2017–2018 Budget—Appropriation (Annual) Act 2017 ● Government of Niue 2018–2019 Budget—Appropriation (Annual) Act 2018 	<ul style="list-style-type: none"> ● Government of Niue 2019–20 Budget—Appropriation (Annual) Act 2019 ● Government of Niue 2020–2021 Budget—Appropriation (Annual) Act 2020 ● Government of Niue 2021–2022 Budget—Appropriation (Annual) Act 2021
Palau	<ul style="list-style-type: none"> ● Republic of Palau—Report on the Audit of Financial Statements, Year Ended Sep 30, 2013 ● Republic of Palau—Report on the Audit of Financial Statements, Year Ended Sep 30, 2015 	<ul style="list-style-type: none"> ● Republic of Palau—Report on the Audit of Financial Statements, Year Ended Sep 30, 2018 ● Republic of Palau—Report on the Audit of Financial Statements, Year Ended Sep 30, 2019
Samoa	<ul style="list-style-type: none"> ● Approved Estimates: Financial Year Ended 30 June 2012 ● Approved Estimates: Financial Year Ended 30 June 2013 ● Approved Estimates: Financial Year Ended 30 June 2014 ● Approved Estimates: Financial Year Ended 30 June 2015 	<ul style="list-style-type: none"> ● Approved Estimates: Financial Year Ended 30 June 2016 ● Approved Estimates: Financial Year Ended 30 June 2017 ● Approved Estimates: Financial Year Ended 30 June 2018 ● Approved Estimates: Financial Year Ended 30 June 2020 ● Approved Estimates: Financial Year Ended 30 June 2021 ● Approved Estimates: Financial Year Ended 30 June 2022
Solomon Islands	<ul style="list-style-type: none"> ● Year 2015 Approved Development Estimates ● Year 2016 Approved Development Estimates ● Solomon Islands Budget 2017: Budget Strategy and Outlook 	<ul style="list-style-type: none"> ● Mines, Energy & Rural Electrification Ministry: Development Estimates Appropriated 2018 ● Year 2021 Approved Development Estimates ● Year 2021 Approved Recurrent Estimates
Tokelau	<ul style="list-style-type: none"> ● Tokelau Government Financial Budget 2015–2016 	<ul style="list-style-type: none"> ● Government of Tokelau National Budget 2016–2017
Tonga	<ul style="list-style-type: none"> ● Budget Statement 2011–2012 ● Budget Statement 2012–2013 ● Budget Statement 2013–2014 ● Budget Statement 2014–2015 ● Budget Statement 2015–2016 	<ul style="list-style-type: none"> ● Budget Statement 2017–2018 ● Budget Statement 2019–2020 ● Budget Statement 2020–2021 ● Budget Statement 2021–2022
Tuvalu	<ul style="list-style-type: none"> ● Financial Statements for the Year Ended 31 December 2017 ● Financial Statements for the Year Ended 31 December 2018 	<ul style="list-style-type: none"> ● 2018 National Budget ● Tuvalu Development Fund Estimates
Vanuatu	<ul style="list-style-type: none"> ● 2014 Budget Estimates ● 2015 Budget Estimates ● 2016 Budget Estimates ● 2017 Budget Estimates ● 2018 Budget Estimates 	<ul style="list-style-type: none"> ● 2019 Budget Estimates ● 2020 Budget Estimates ● 2021 Budget Estimates ● 2022 Budget Estimates

10. APPENDICES *continued*

Table A3. Units costs per person for on-site sanitation (USD, 2015) (Hutton and Varughese, 2016)

	Latrine with septic tank	Dry pit latrine
Fiji	175	13.4
Kiribati	40.9	5.6
Marshall Islands	81.7	5.8
Micronesia (Fed. States)	78.4	5.6
Nauru	180.8	10.3
Niue	283.6	16.2
Palau	412.1	23.6
Samoa	111.3	8.5
Solomon Islands	45.5	3.5
Tonga	116.8	8.9
Tuvalu	80.1	6.1
Vanuatu	65.9	5

Table A4. Population by country and year

Country	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Cook Islands	13,473	13,379	13,281	13,191	13,120	13,081	13,074	13,100	13,148	13,208	13,260	13,312
Fiji	859,816	863,451	865,065	865,602	866,447	868,632	872,406	877,460	883,490	889,955	896,444	902,980
Kiribati	102,930	104,735	106,359	107,887	109,387	110,927	112,529	114,153	115,842	117,608	119,446	121,313
Marshall Islands	56,361	56,524	56,712	56,933	57,183	57,444	57,723	58,053	58,412	58,791	59,194	59,600
Micronesia, Fed. Sts	102,916	103,448	104,506	105,922	107,444	108,886	110,215	111,461	112,640	113,811	115,021	116,244
Nauru	10,009	10,069	10,136	10,208	10,289	10,374	10,474	10,577	10,678	10,764	10,834	10,904
Niue	627	639	646	659	672	685	698	710	721	734	748	762
Palau	17,954	17,748	17,635	17,603	17,625	17,665	17,718	17,809	17,911	18,001	18,092	18,183
Samoa	185,944	187,469	189,089	190,712	192,220	193,510	194,540	195,358	196,128	197,093	198,410	199,736
Solomon Islands	527,861	541,522	556,066	571,329	587,079	603,133	619,438	636,030	652,856	669,821	686,878	704,369
Tokelau	1129	1138	1163	1191	1217	1247	1276	1297	1318	1330	1350	1,370
Tonga	103,981	103,558	102,736	101,768	101,023	100,780	101,143	102,002	103,199	104,497	105,697	106,911
Tuvalu	10,521	10,626	10,744	10,849	10,973	11,099	11,232	11,365	11,505	11,655	11,792	11,931
Vanuatu	236,216	242,658	249,505	256,637	263,888	271,128	278,326	285,499	292,675	299,882	307,150	314,594

Table A5. JMP service levels for household drinking water services⁸

Service level	Definition
Safely managed	Drinking water from an improved water source that is located on premises, available when needed and free of faecal and priority contamination
Basic	Drinking water from an improved source, provided collection time is not more than 30 minutes for a round trip, including queuing
Limited	Drinking water from an improved source, where collection time exceeds 30 minutes for a round trip to collect water, including queuing
Unimproved	Drinking water from an unprotected dug well or unprotected spring
No service	Drinking water collected directly from a river, dam, lake, pond, stream, canal, or irrigation channel

Table A6. JMP service levels for sanitation⁹

Service level	Definition
Safely managed	Use of improved facilities that are not shared with other households and where excreta is safely disposed of in situ or removed and treated off-site
Basic	Use of improved facilities which are not shared with other households
Limited	Use of improved facilities shared between two or more households
Unimproved	Use of pit latrines without a slab or platform, hanging latrines, or bucket latrines
No service	Disposal of human faeces in fields, forests, bushes, open bodies of water, beaches, and other open spaces or with solid waste

⁸ <https://washdata.org/monitoring/drinking-water>

⁹ <https://washdata.org/monitoring/drinking-water>

Figure A1. Private households who owned water tanks, by supplier of water tanks, in Samoa, 2016

Household water tank by supplier in Samoa

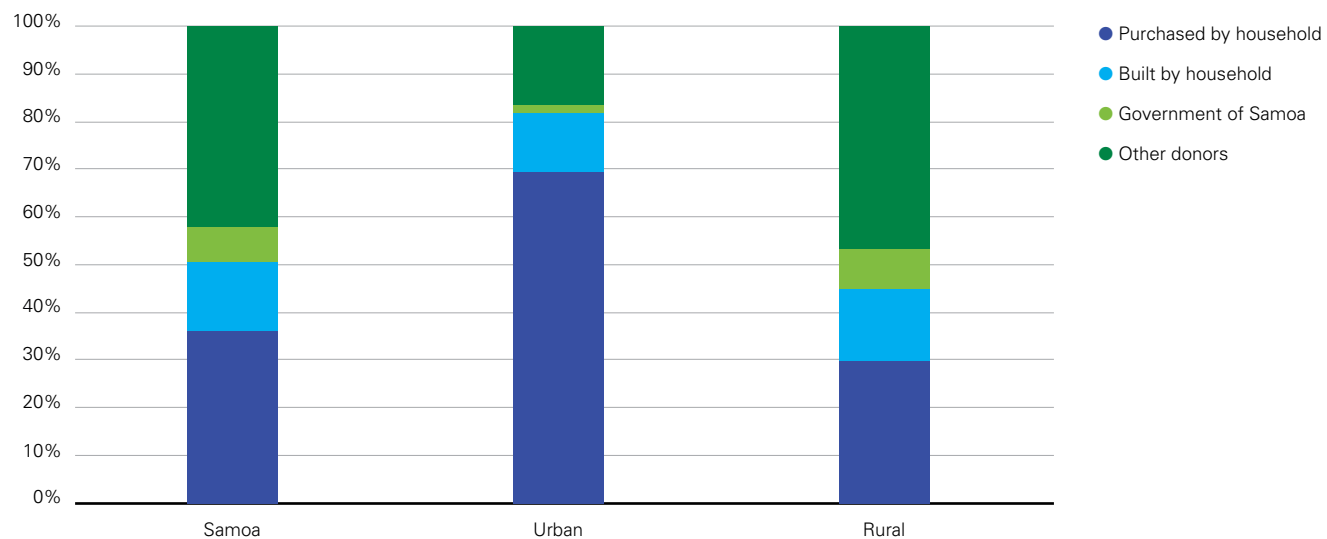


Figure A2. Use of household rainwater tanks since 2000

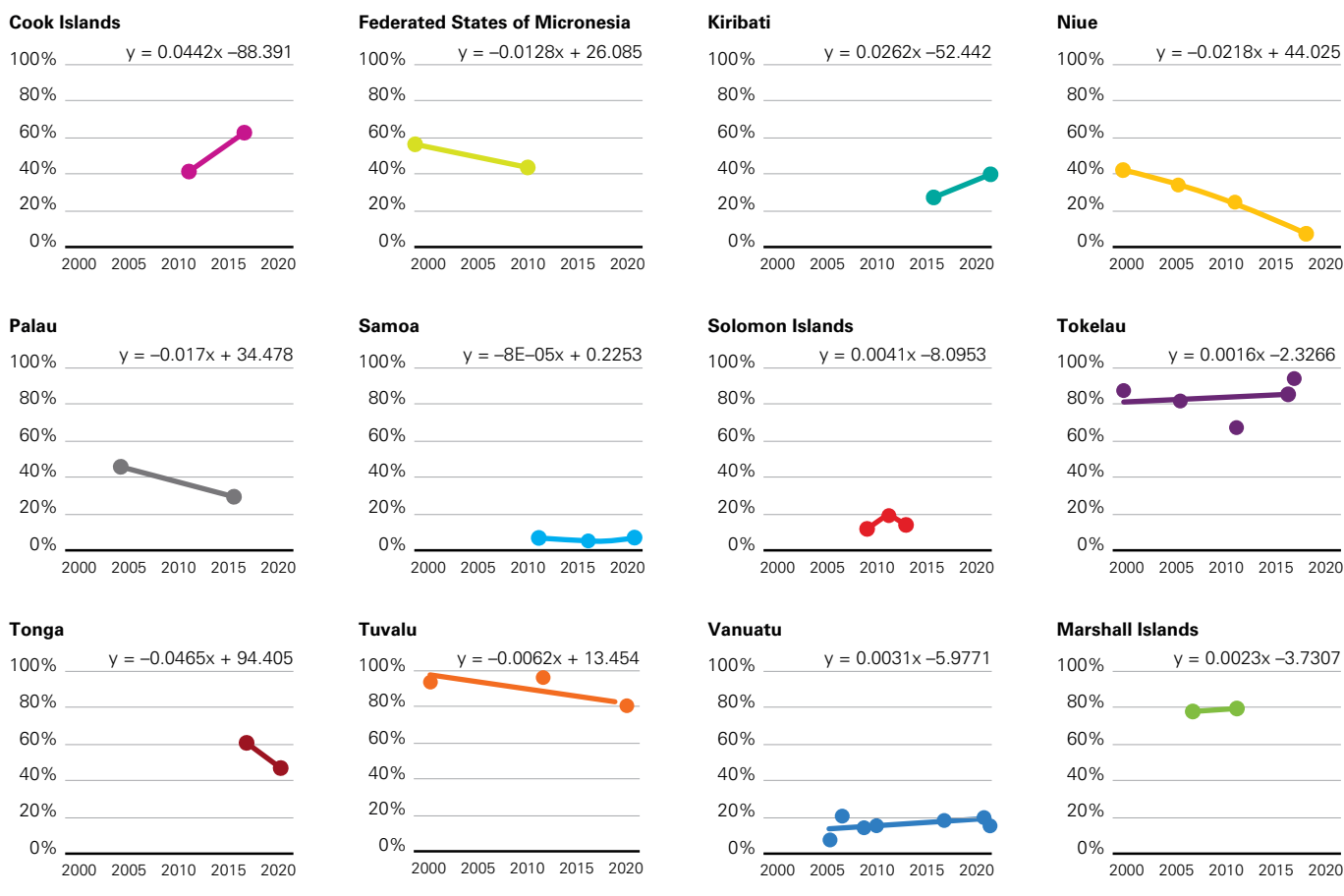


Figure A3. Reported household expenditure on WASH according to GLAAS report 2018

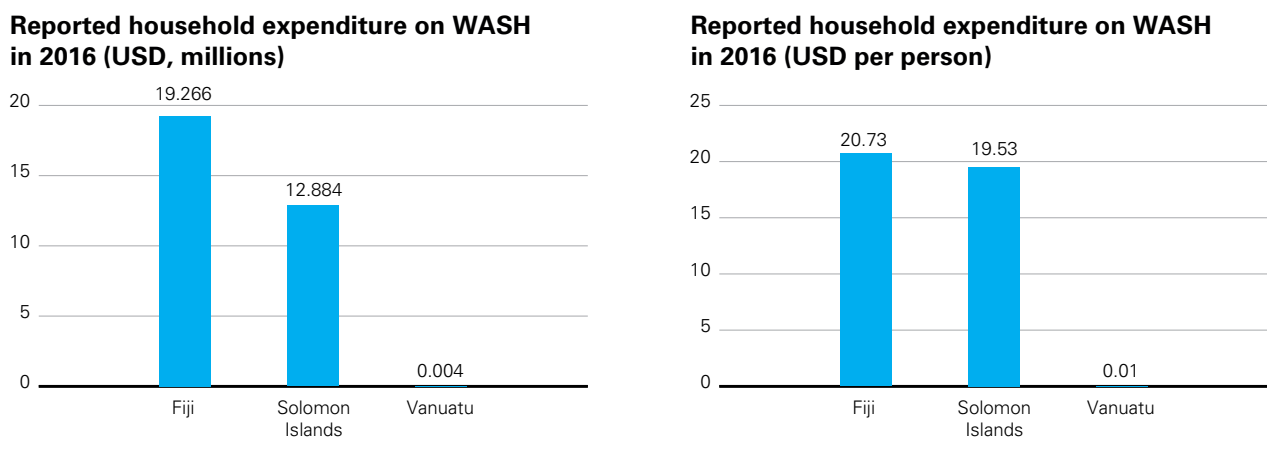
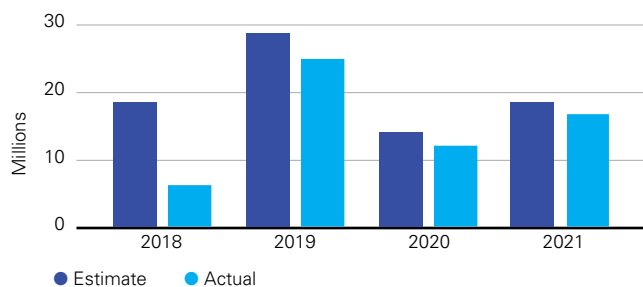


Figure A4. Budgeted WASH expenditure in selected Pacific Island countries (local currency units, nominal values)

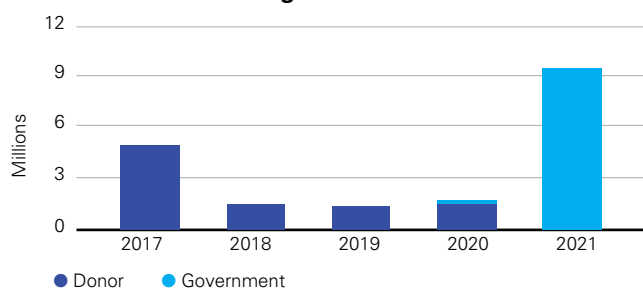
Cook Islands



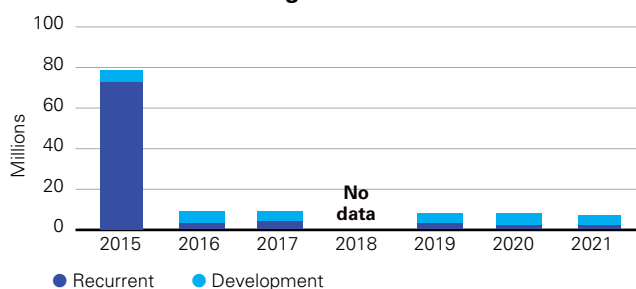
Kiribati – budget estimates



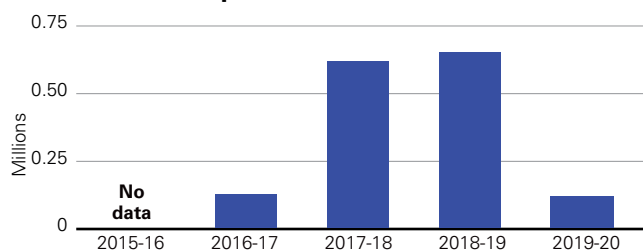
Marshall Islands – budget estimates



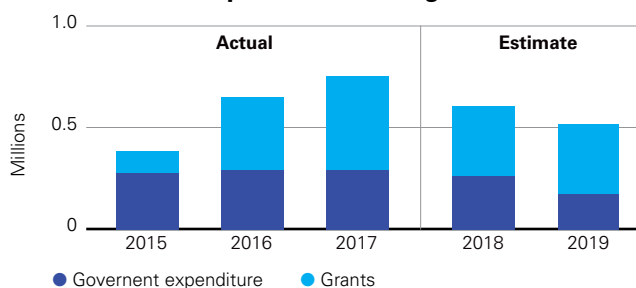
Solomon Islands – budget estimates



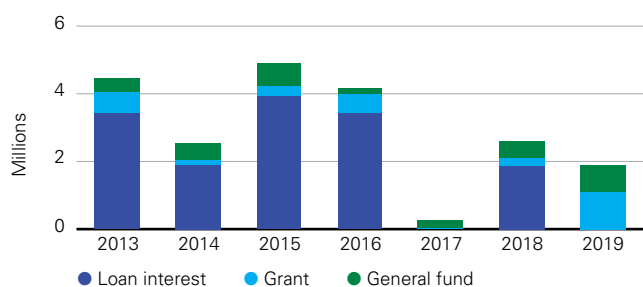
Nauru – actual expenditure



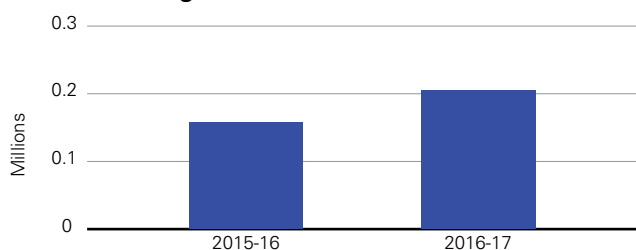
Tuvalu – actual expenditure & budget estimates



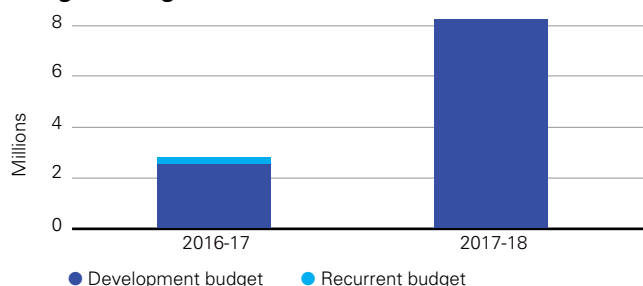
Palau



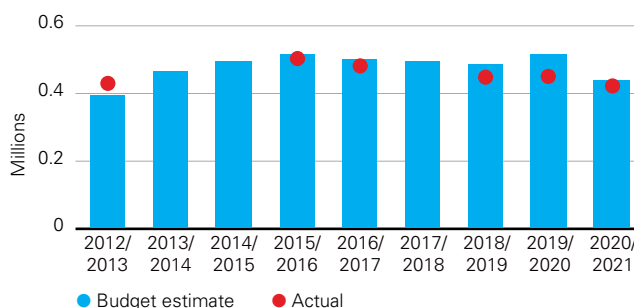
Tokelau – budget estimates



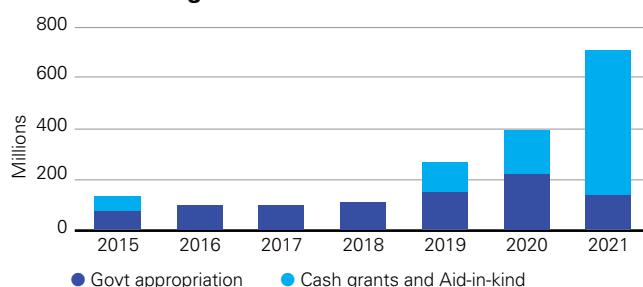
Tonga – budget estimates



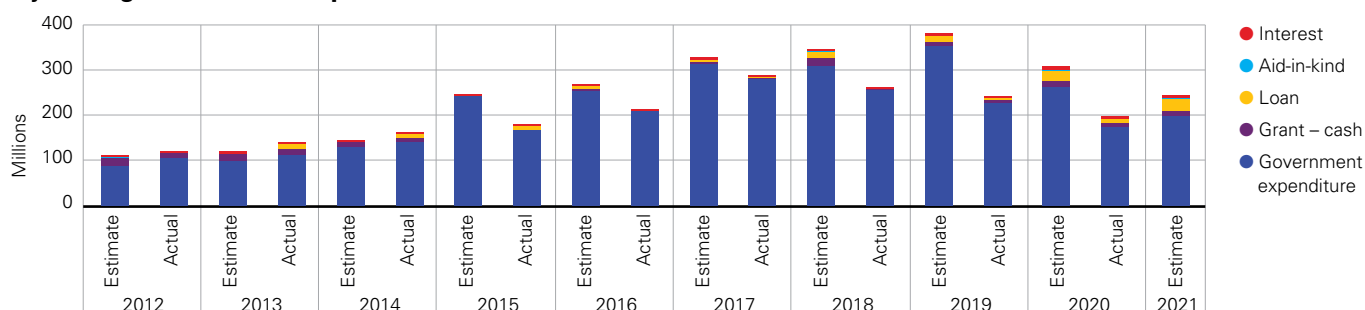
Niue



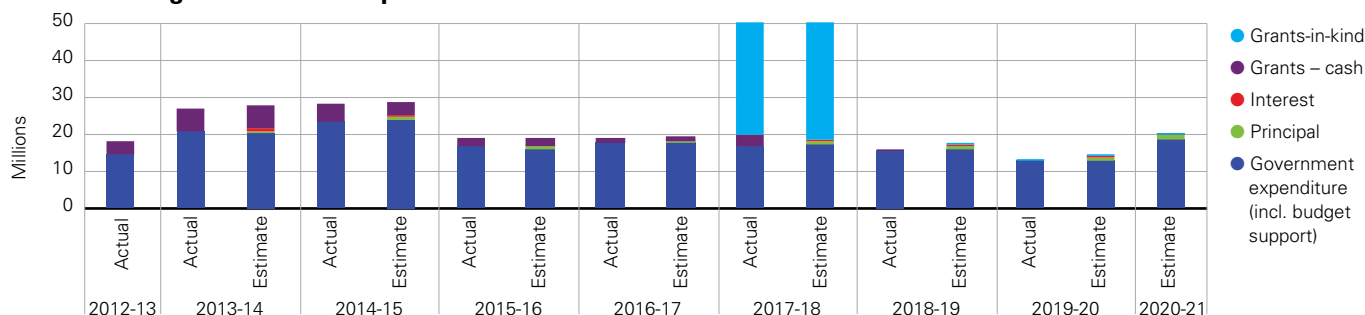
Vanuatu – budget estimates



Fiji – budgeted & actual expenditure



Samoa – budgeted & actual expenditure



Notes:

- a Recurrent budget for 2015 in the Solomon Islands uses 'actual' expenditure; 2019 expenditure figures use actual expenditures .
- b In-kind support in 2017–2018 in Samoa relates to the "Project for Improvement of Urban Untreated Water Supply Schemes" valued at US\$84.5 million.

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