



# Diagnostics of Pacific Water and Wastewater Association Water Utilities

SDG 6 PROFILE FOR FIJI  
AND THE WATER AUTHORITY OF FIJI



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- 1 FJD = USD 0.47
- 1 FJD = AUD 0.67

The currency used in this report is USD unless specified otherwise.



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## LIST OF ABBREVIATIONS

<b>CSO</b>	Civil Society Organization
<b>DFAT</b>	Department of Foreign Affairs and Trade (Australia)
<b>GESI</b>	Gender Equality and Social Inclusion
<b>KPI</b>	Key Performance Indicator
<b>lcd</b>	Liters per customer per day
<b>MFAT</b>	Ministry of Foreign Affairs and Trade (New Zealand)
<b>NGO</b>	Non-Government Organization
<b>NZ</b>	New Zealand
<b>NRW</b>	Non-revenue water
<b>O&amp;M</b>	Operation and maintenance
<b>PNG</b>	Papua New Guinea
<b>PPUC</b>	Palau Public Utilities Corporation
<b>PRIF</b>	Pacific Region Infrastructure Facility
<b>PCO</b>	PRIF Coordination Office
<b>PUB</b>	Public Utilities Board, Kiribati
<b>PWWA</b>	Pacific Water and Wastewater Association
<b>SDG</b>	Sustainable Development Goal
<b>SOE</b>	State-owned enterprise
<b>SWOT</b>	Strength, Weakness, Opportunity, and Threat
<b>TA</b>	Technical assistance
<b>ToR</b>	Terms of reference
<b>USD</b>	US dollar
<b>WAF</b>	Water Authority of Fiji
<b>WaSH</b>	Water, Sanitation and Hygiene
<b>WHO</b>	World Health Organization
<b>WSS</b>	Water Supply and Sanitation

# 1 INTRODUCTION

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## 1.1 Introduction

This report is part of a study called “Diagnostics of PWWA Water Utilities” and has the objective to assess progress, formulate recommendations, propose measures, and develop tools to assist Pacific Island Countries, water utilities and PWWA in achieving universal access to safe water and sanitation (Sustainable Development Goal 6).

To assess progress and evaluate the contribution of water utilities in achieving SDG-6, a diagnostic framework has been developed, which is described in more detail in section 1.2 below. To test the diagnostic framework, it has been applied and tested in five countries and for five PWWA member utilities with the following purpose:

- i) Assess the status of SDG-6 achievement in the countries concerned
- ii) Assess the current contribution and potential of water utilities in realizing universal access to safe Water Supply and Sanitation (WSS) in their country and
- iii) Formulate strategies and plans for enhancing the contribution of water utilities towards achieving SDG-6.

In the current report, the diagnostic framework is applied for Fiji and its water utility the Water Authority of Fiji (WAF). Based on the outcome of the diagnostic analysis, a Strategic Action Plan was formulated in collaboration with WAF to enhance its contribution to achieving SDG-6.

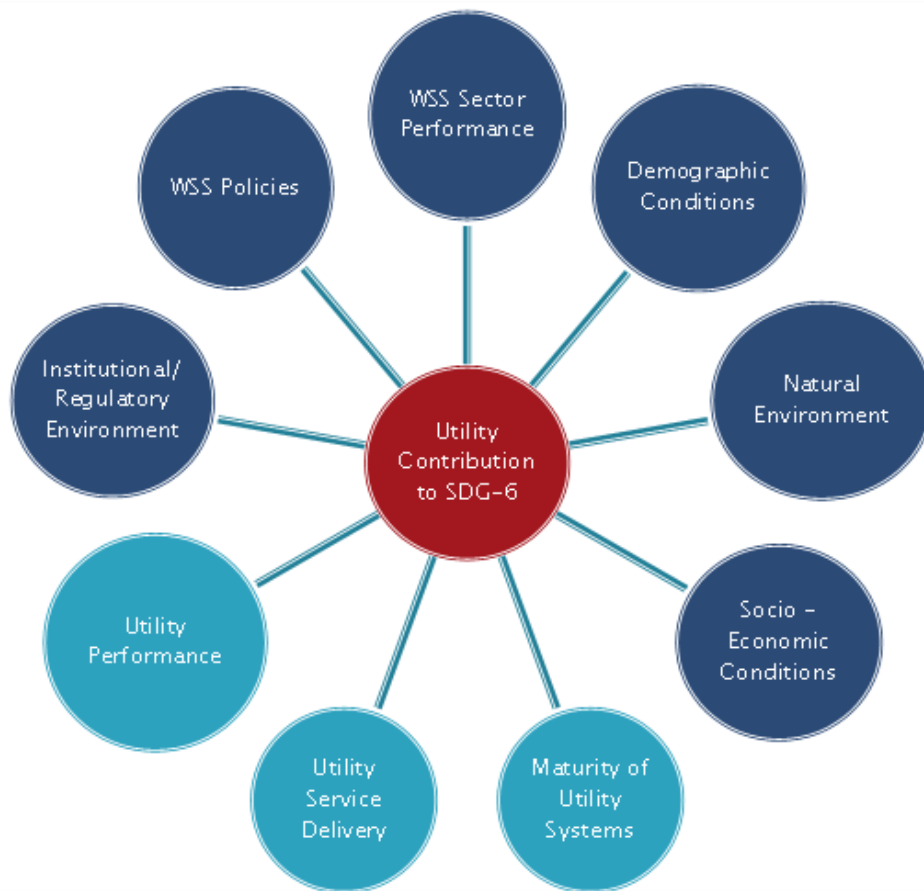
## 1.2 SDG – 6 Diagnostic Analysis of PWWA Utilities

The diagnostic framework assumes that the contribution of a utility to universal access to safe WSS in a country is determined by various internal factors, including its performance, available resources, level of service delivery and by external factors such as the geography, demography, the natural environment, socio economic conditions, sector policies and the institutional and regulatory environment. Also, the performance of other WSS organizations in a country will play a role. A schematic presentation of the internal and external factors is presented in figure 1.1 below.

### *Step 1 – Carry out the diagnostic Analysis*

For each factor in the framework, indicators have been developed that help understand the key issues and constraints. Where possible, the indicators have been quantified and data have been collected from available reports and databases, including the PWWA IBNET database, the Joint Monitoring Program (JMP) of UNICEF/WHO and data available from the utilities and governments. A list of indicators is attached as Annex 1 to this report. The diagnostic analysis is presented in chapters 2 and 3 of this report.

**Figure 1.1: Diagnostic Framework for SDG-6 Achievement<sup>1</sup>**



### *Step 2 - SWOT Analysis*

To obtain a better understanding of the potential contribution of a utility to increasing universal access to safe WSS, a SWOT (Strengths, Weaknesses, Opportunities and Threats) Analysis has been carried out. The SWOT analysis is often used by organizations entering new markets or starting new activities. Likewise, the SWOT analysis in this case is used to assess how Pacific Water Utilities can enhance their contribution to universal access to safe WSS in their country.

The SWOT analysis for WAF is described in Chapter 4 of this report. In the SWOT analysis the internal strengths and weaknesses of the utility are identified to assess its potential to (contribute to) achieving universal access to safe WSS as well as the external opportunities and threats.

### *Step 3 – Prepare an SDG-6 Action Plan*

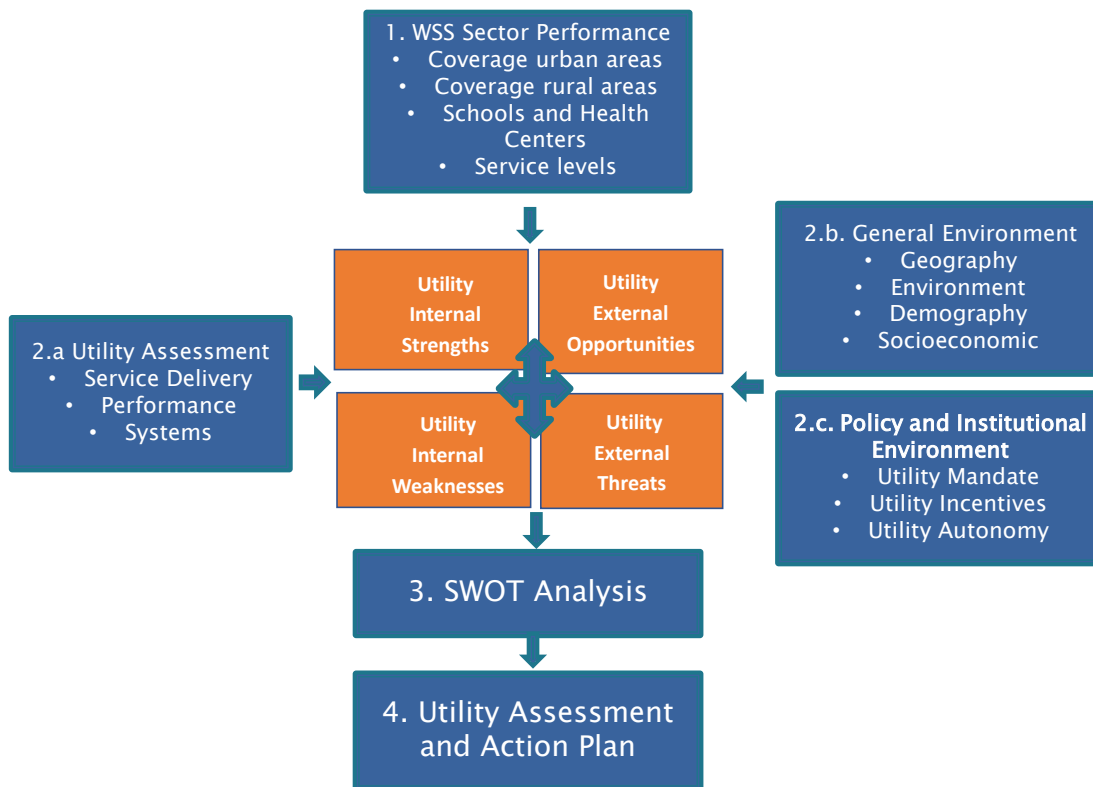
Following the SWOT Analysis, a Working Group within WAF and the consultants have conducted various remote meetings to validate the data, carry out the SWOT analysis and subsequently formulate a strategic action plan for WAF to enhance its contribution to SDG-6 achievement in Fiji. The Action Plan is presented in Chapter 5 of the report.

The various steps in the Diagnostic Framework are schematically presented in figure 1.2 below.

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<sup>1</sup> Light blue circles refer to so-called 'internal' factors, dark blue circles refer to 'external' factors.

**Figure 1.2 Flow Diagram of SDG-6 Diagnostic Analysis PWWA Utilities**



The methodology of the diagnostic analysis, as presented above, has been applied to Fiji and its water utility the WAF. Data and information were collected from available reports and databases, including the PWWA/IBNET database, the Joint Monitoring Program (JMP) of UNICEF/WHO and data available from WAF and the government. The data in the report were collected and validated by consultants in close collaboration with a Working Group of WAF, consisting of Manasa Tusulu, Acting Manager Strategic Planning and Reema Deo, Business Analyst and with support of staff of the GIS unit.

## 2 COUNTRY AND UTILITY CHARACTERISTICS

### 2.1 Fiji

The Republic of Fiji is an archipelagic state situated in Melanesia in the South Pacific Ocean, approximately 2,000 kms northeast of New Zealand, with a population of approximately 896,000 (2020). Its land mass of 18,300 km<sup>2</sup> extends over 332 islands, of which 110 are permanently inhabited. The two main islands, Viti Levu (about 80 % of the population) and Vanua Levu (about 15% of the population), account for 87% total land area. The capital and largest city, Suva, is on Viti Levu. About three quarters of Fijians live on the coastal plains of Viti Levu, either in Suva or in smaller urban centres like Nadi (where the international airport is located) or Lautoka (with sugar cane plantations). The island of Vanua Levu has two urban centres Savusavu and Labasa.

**Figure 2.1: Map of Fiji Islands**



## 2.2 Fiji WSS Sector Performance in achieving SDG-6

‘Improved access to water and sanitation’ has quantitative and qualitative aspects and is monitored by the UNICEF-WHO managed Joint Monitoring Program (JMP). The status of achieving universal access to water and sanitation is presented in table 2.1 below. Data for Hygiene are not available.

**Table 2.1: Fiji Access to Water and Sanitation (% of total population)**

FIJI	Drinking water			Sanitation		
	National*	Rural*	Urban*	National*	Rural*	Urban*
	2020	2020	2020	2020	2020	2020
Safely managed	-	-	-	-	-	-
Basic service	94.3	89.09	98.19	99.16	99.33	99.04
Limited service	-	-	-	0.84	0.67	0.96
Unimproved	3.32	5.76	1.50	-	-	-
No service/ surface water	2.38	5.15	0.31	-	-	-

Source: WHO/UNICEF JMP 2019

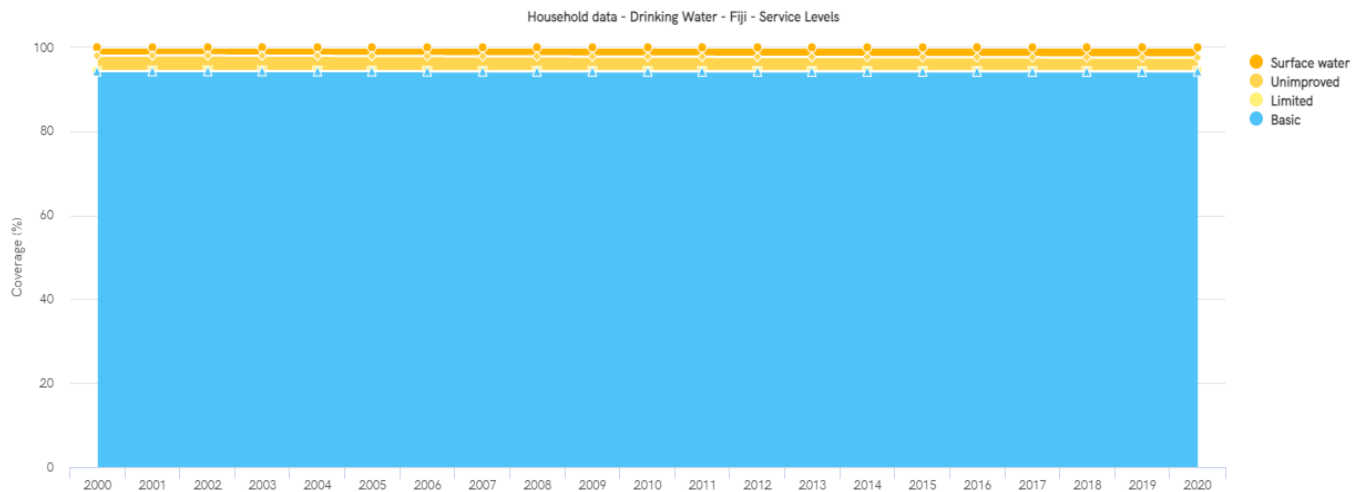
### 2.2.1 Access to safe Water Supply

Fiji scores relatively high on universal access to safe water supply services. Based on the latest WHO/UNICEF JMP report of 2020, about 94.3% of the Fiji Islands population has access to basic service



level water supply services<sup>2</sup>. In urban areas this is 98.19% and in rural areas 89.09%. 2.38% of the population living in remote areas or outer islands have no service or depend on surface water. Ministry of Health Statistics indicate that Fiji averages around 10 deaths per year from water borne diseases<sup>1</sup>.

**Figure 2.2: Access to safe Water Supply (% of total population)**



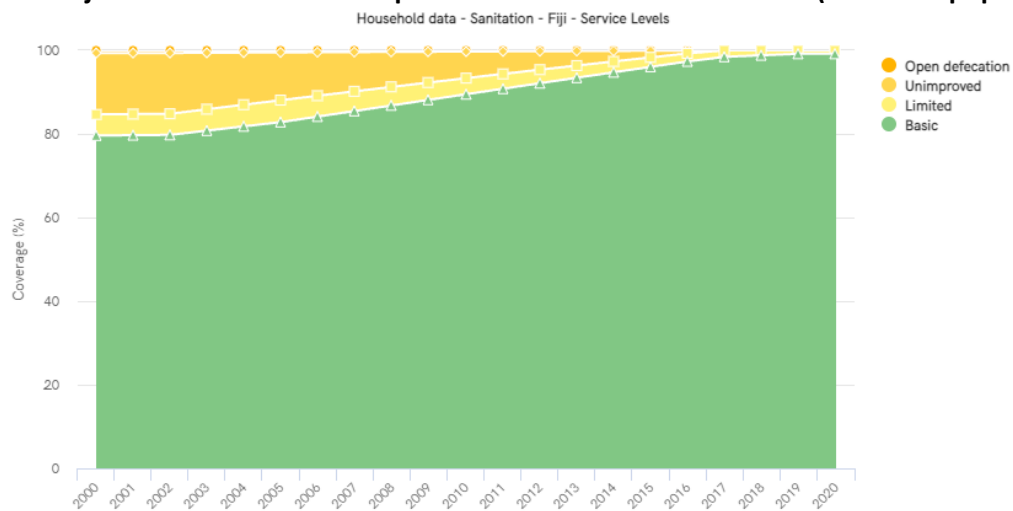
Source: WHO/UNICEF JMP 2019

The trend in water supply access over the past 20 years is presented in figure 2.2 above and shows that over the past 20 years access to basic water supply has remained constant at approximately 94.3% in 2020. The use of surface water has slightly increased from 1.96% in 2000 to 2.38% in 2020. This increase in the use of surface water is a concern for public health reasons and WAF’s efforts to supply clean water to all (100%) is not being realized.

### 2.2.2 Access to safe Sanitation and Sewerage services

According to JMP data, access to safe sanitation has steadily increased from approximately 79.62% in the year 2000 to its current level of approximately 99.16%. This trend is presented in figure 2.3 below.

**Figure 2.3: Fiji Islands – Annual development of access to safe sanitation (% of total population)**

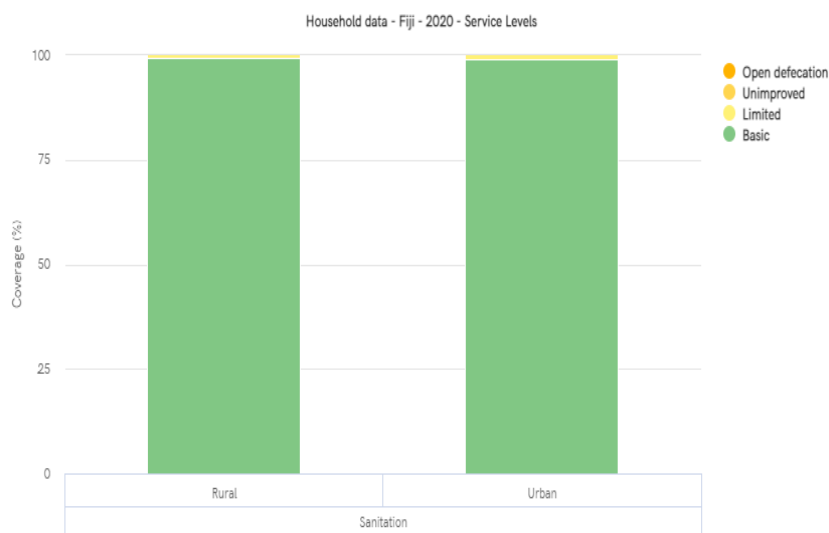


Source: WHO/UNICEF JMP 2019

<sup>2</sup> In the JMP monitoring system basic services are defined as Drinking water from an improved source, provided collection time is not more than 30 minutes for a roundtrip including queuing

Based on JMP data, 99.04 percent of urban households in Fiji Islands have access to basic sanitation, which is defined by the JMP as “Use of improved sanitation facilities which are not shared with other households. In rural areas, this is 99.33. The remaining 0.67% have “limited access”. The use of unimproved sanitation systems or open defecation is reported at zero.

**Figure 2.4: Fiji Islands – Current Access to Sanitation**



Source: WHO/UNICEF JMP 2019

### 2.2.3 Contribution WAF to achieving SDG-6 targets in Fiji

The contribution of WAF to providing universal access to safe water and adequate sewerage facilities in Fiji is demonstrated in the table below.

**Table 2.2: WAF contribution to achieving SDG-6 in Fiji**

	Total	Urban	rural
Population Fiji 2020 <sup>3</sup>	896.444	501.112	395.332
Population with Basic Water Supply <sup>4</sup>	845.347	491.992	352.201
WAF no of Water Connections (residential) <sup>5</sup>	139,854	96,873	42,980
Population served by WAF (water) <sup>6</sup>	699,270	484,367	214,903
Population with Basic Sanitation	888.914	496.302	392.683
WAF Sewerage Connections	27,222	27,222	0
Population Served by WAF (Sewerage)	136,110	136,110	0

From table 2.2. above it can be concluded that WAF is serving an estimated 699,270 persons which equals about 83% of the population with access to basic water supply. For sanitation, WAF is providing sewerage service to an estimated 136,110 persons or about 15% of the population with basic

<sup>3</sup> Source: Fiji National Household, Income and Expenditure Survey 2019-2020

<sup>4</sup> Source: UNESCO/WHO Joint Monitoring Program WaSH

<sup>5</sup> Source: WAF

<sup>6</sup> Source: WAF: WAF counts with an average of 5 persons per household

sanitation. It also means that some 200,000 people in Fiji do not yet have access to piped water supply, of which some 17,000 persons live in urban areas and 180,000 in rural areas.

## 2.3 WSS Service Providers in Fiji

### 2.3.1 Institutional and regulatory Framework for Water Supply and Sanitation

Clauses 35 and 36 of the Constitution of Fiji, Goal 6 of the Sustainable Development Goals, Thematic Area 6 of the Green Growth Framework for Fiji and Clause 3.1 of the 5-year and 20-year National Development Plan (NDP) all state that every Fijian has a right to clean and safe water in adequate quantities and to adequate sanitation. The NDP also aims at providing 60% of the rural population with access to central sewage systems by 2031.

The Rural Water and Sanitation Policy ('Policy')- 2021, promotes the need for effective coordination of Government agencies and stakeholders in ensuring access to safe drinking water, basic sanitation, and hygiene facilities for rural communities.

The Department of Water and Sewerage (DWS) is responsible for the formulation of policies and a regulatory framework for the water and wastewater sector. This department is under the Ministry of Infrastructure and Meteorological Services, Lands and Mineral Resources. It is the focal government agency that provides technical advice, monitors, and inspects rural and urban water and sewerage projects and is also mandated by Cabinet to monitor WAF's activities in line with budgetary allocations made by the Government.

The Water Authority of Fiji (WAF) is a Commercial Statutory Authority (CSA), established in 2010 under the Water Authority of Fiji Promulgation Act and is responsible for delivering environmentally sound, sustainable, efficient, and effective water and wastewater services to as many areas as possible<sup>7</sup> throughout Fiji. WAF reports to the Ministry of Economy and the Ministry of Infrastructure and Meteorological Services.

The Ministry of Health and Medical Services (MHMS) is responsible for setting water quality standards and oversees policies, planning and implementation of rural and urban water supply services. Another task of MHMS is to review and approve sanitation systems through the Central Board of Health. MHMS coordinates the Fiji WASH Cluster and is responsible for public awareness on WASH practices.

The Ministry of Rural & Maritime Development and Disaster Management (MRMDDM) is to oversee the overall achievement of its vision - "A Better Fiji for All" through building the Integrated Rural Development Framework for productive, progressive, safe, and resilient communities in Fiji. Its role in WSS is to administer all rural WSS projects implemented in villages and maritime islands by the WAF. By attending regular Tikina meetings throughout the regions, MRMDDM keeps communities informed about developments within their region.

The Ministry of iTaukei Affairs develops, implements, and monitors policies and programs for the good governance and wellbeing of the population of Fiji. All District rural water and sanitation projects and needs are to be recorded and endorsed by the Roko Tui's Office of the relevant 20 provinces. The Roko Tui's Office monitors Water and Sanitation programmes and water conservation awareness in the villages and assists with land consent issues and establishment of water committees.

The Ministry of Provincial Development is the Institution responsible for all Rural Development Planning. Rural water and sanitation is included in the Ministry's planning processes which notably

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<sup>7</sup> Source: WAF Promulgation Act 2007: Section 30 Conditions of Service, paragraph 5.c

includes all sections of communities at district and provincial levels inclusive of advisory councils. The Ministry of Provincial Development will prioritise all rural water and sanitation requests through its District and Provincial Development Boards (which consist of Ministry of I-Taukei Affairs, Ministry of Health, District Advisory Councils and other stakeholder Ministries) and forward to the Water Authority of Fiji.

The Ministry of Education and Human Resources Development has the task to ensure that all schools have safe WSS facilities.

Collection and disposal of municipal solid waste is under the responsibility of city and town councils. Regarding sanitation, every houseowner in Fiji is responsible for the proper installation, functioning and maintenance of sanitary facilities in his or her house.

## 3 UTILITY ASSESSMENT

### 3.1.1 The Water Authority of Fiji

The Water Authority of Fiji (WAF) is providing quality drinking water and wastewater services to an estimated 699,270 people nationwide. The area of operation covers the whole of Fiji. WAF serves 19 towns with water supply and 11 towns with wastewater and operates and maintains a water and wastewater network of more than 4,200 kilometers of pipes.

The WAF Board is responsible for establishing the Authority's strategic direction, the setting of objectives, policy guidelines and goals for management, and monitoring the achievement of these matters. The Board of Directors comprises of the Chairman and five members all of whom are appointed by the Minister responsible for Public Utilities in consultation with the Minister responsible for Public Enterprises and the Minister responsible for Finance. Board members are appointed for a term not exceeding three years and are eligible for reappointment at the end of that term.

### 3.1.2 Earlier Utility Assessments and Action Plans

Earlier assessments of the performance of WAF were carried out in 2012<sup>8</sup> as part of preparing the PWWA Benchmarking Report of that year and in 2016<sup>9</sup> as part of a study reviewing the effects of water utility benchmarking in the Pacific. An overview of Key Performance Indicators is presented below.

**Table 3.1: Summary of earlier WAF assessments**

KPI	Unit	2012	2016	2020
No of water connections	Number	140,375	152,361	169,498
No of wastewater connections	Number	55,900	29,215	32,540
Water coverage in service area <sup>10</sup>	%	100	100	100
Wastewater coverage in service area	%	87	44	34
Residential volume of water consumed	l/c/d	141	176	151
Continuity of water supply	Hours/day	24	20	22
NRW as compared to production	%	51	51.5	49
Percentage of water treated	%	100	100	100
Samples (%) compliant with residual chlorine standards	%	95	85	93
Staff W&WW per 1000 connections W&WW	Number	5.9	6,7	4.9
Metering level	%	100	100	87
Customer complaints per nr of W&WW connections	%	0.26	0.49	0.60
Operating Cost Recovery Ratio	%	0.67	0.67	0.91
Collection Ratio	%	100	100	77

Source and definitions: IBNET/PWWA Benchmarking System

WAF performance over the years has varied. In general, the utility has been able to maintain service levels at a relatively high level, but there have been significant fluctuations in various KPIs. Once a deviation occurs, mitigative action is taken and the issue is being dealt with. Several issues appear to be structural, such as NRW reduction.

<sup>8</sup> PRIF/PWWA 2013 – Water Authority of Fiji Utility Performance Assessment Report 2012

<sup>9</sup> PRIF/PWWA 2016 – Review of Gap Analysis for Pacific Water Utilities – WAF Utility Profile

<sup>10</sup> WAF's service areas are defined as those areas where WAF has a piped network.

- In the period 2012-2019, the number of water connections has increased with about 2.5% per year. Most of this increase appears to be caused by the influx of families from rural areas to urban areas. WAF responds to all request for new connections, including those in informal settlements.
- Water Supply Coverage within the WAF supply area is 100%. The supply area is defined by WAF as the area in which it has a water distribution network. All households are connected, including those living in informal settlements, without a legal title.
- The number of connections in 2012 also included an estimate of 'non-active' and sometimes non-existing connections. The registration system has been cleaned up and this caused the number of sewerage connections to drop to about 28,000 in 2013. Since then, the number of registered sewer connections of WAF slowly increased to 32,215 in 2020.
- Coverage for sewerage: WAF currently services about 32% of people in its current supply area (see footnote 9 below). Earlier figures were much higher, but in 2012 the WAF cleaned up the list of sewerage connections and this resulted in much lower but more realistic figures.
- Not all households in WAF's supply area receive 24/7 water supply and there are areas that receive considerably less. In 2013 WAF identified 68 areas with intermittent supply. This was reduced to 50 in 2014 and to 23 areas in 2015. In 2016 the number of areas with intermittent supply was 11. The improvement has become noticeable in the continuity of supply, which increased from an average 20 to 22 hours per day.
- As part of the NRW reduction program in 2015/16 it was assessed that there were many non- or malfunctioning meters. Since 2016 WAF has been implementing a continuous water meter replacement program.
- All drinking water supplied by WAF to its customers is treated. Surface water is treated using coagulation-flocculation, filtration, sedimentation, and chlorination while water produced from bore holes and protected springs is normally treated by means of chlorination only.
- WAF's drinking water quality has varied over the years. In 2012, 95% of the 2,180 samples passed the minimum standard for residual chlorine, while in 2015 just 82% of tested samples were compliant. This figure improved again until 93% compliance in 2020. WAF is closely monitoring performance on this indicator in the various regions and performance is improving but has not yet achieved the PWWA Benchmark of 100%.
- The number of complaints as a percentage of the total no of connections continued to increase over the years. Partly this is a result of the establishment of a 24/7 call centre in 2010. WAF's policy is to respond to each complaint within 72 hours. The reasons for the increase in complaints are not fully clear.
- The number of staff per 1,000 connections has gradually improved from 5.9 in 2012 to a about 4.9 in 2020.
- NRW was somewhat reduced over the past years, but it is still quite high sitting at 49%. This is partly caused by high working pressures in the distribution system and partly by non- or malfunctioning meters. In 2013, WAF established a NRW team with the purpose of reducing NRW, but results have been rather disappointing so far.
- Since 2012, the cost recovery ratio of WAF has varied between 0.6 and 0.9, including subsidies from the Government. The value of this indicator has improved to 0,9 in 2020, but WAF remains heavily dependent of government subsidies to continue its operations.
- The collection ratio of WAF used to be 100% but dropped to 77% in 2020 due to the introduction of a grace period for paying water bills in connection with the Covid 19 pandemic.

### 3.1.3 WAF - Level of Service Delivery

Water utilities within their mandates and service areas, significantly contribute to realizing SDG-6. It is important to review key performance indicators, such as coverage, reliability and continuity of

services, quality of the water supplied, and responsiveness to customers. Data have mostly been obtained from the IBNET/PWWA benchmarking system.

**Table 3.2: Summary of WAF Service Delivery**

Performance Area	Key Performance Indicators	Unit	2018	2019	2020
Water Supply	Drinking Water Coverage in service area <sup>11</sup>	%	85	93	100
	Continuity of service	hours/day	22	22	22
	Continuity (% of customers with discontinuous supply)	%	0.39	1.80	2.21
	Total Water Consumption	l/p/d	263	242	205
	Residential Water Consumption	l/p/d	188	173	151
	% of annual required number of microbiological tests taken	%	100	100	100
	Compliance tests: Samples passing on residual chlorine	%	95	95	93
Wastewater	Sewerage Service Coverage in service area <sup>12</sup>	%	27	34	34
	Availability of on-site sanitation services	descriptive	Houses in urban areas mostly have septic tanks and pit latrines. Tanks are emptied by City Councils and private sector operators. Houses in rural areas mostly use pit latrines with wastewater often seeping away in the groundwater.		
	Wastewater and Fecal Sludge Quality passing primary and secondary level of treatment	%	100	100	100
Responsiveness to customers	Is there a customer charter and has the charter been made known?	Descriptive	WAF's Customer Charter 20-22 is published on the WAF Website and specifies its service level targets		
	Complaints about W&WW services	% of the number of connections	0.54	0.43	0.60

Source and definitions: IBNET/PWWA Benchmarking System

Based on the above figures WAF provides a reasonable level of service but is not yet able to provide the service level targets stated in its Customer Charter regarding continuity of service and water quality. Coverage of water supply in the service area has increased to 100% and average residential consumption has come down, most likely due to WAF's pressure reduction campaigns. Coverage of the sewerage network still is relatively low. The aim of the government and of WAF is to increase this percentage in the coming years. A relevant question is if extending the sewerage network is financially feasible and if there are more cost-effective ways of achieving the same result.

### 3.1.4 Utility Performance and Efficiency

The ability and willingness of WAF to improve access to WSS in Fiji also depends on its performance and the efficiency of its operations. This includes technical, commercial, financial, HRM and

<sup>11</sup> WAF's service area is defined as those areas where WAF has a piped water supply system.

<sup>12</sup> WAF's service area is defined as those areas where WAF has a piped sewerage system

organizational performance. Key data on WAF’s performance are available from the PWWA benchmarking system and are presented below.

**Table 3.3: Summary of WAF Performance**

Performance Area	Key Performance Indicators <sup>13</sup>	Score	2018	2019	2020
Technical	Non-Revenue Water	%	45	46	49
	Electricity costs as part of operational costs	%	27	39	36
Commercial	Collection Ratio	%	93	96	77
	Water sold that is metered	%	100	100	100
Financial	Operating Cost Recovery Ratio	%	64	87	91
HRM	Staff per 1,000 connections WSS	FTE	5.6	5.4	4.5
Organization & Strategy	Aggregate Performance Ratio (AGPAR)	AGPAR score	3	4	4

Source and definitions: IBNET/PWWA Benchmarking Reports

- Non-revenue water: NRW reported in the benchmarking report is high. It has come down from NRW figures in 2012 (about 51%) but has been increasing again in recent years. Main causes of NRW are physical leakage, unmetered connections, and illegal connections. WAF’s annual report 2016 informs that 25,200 old domestic meters were replaced and NRW was reduced from 39.6% to 31.6%. However, this figure does not align with the IBNET-benchmarking figures.
- All WAF connections are metered. In the past, as part of the NRW campaign it was assessed that there are many non-or malfunctioning meters. WAF is therefore replacing and repairing water meters on a regular basis: 2013/14:13,465 meters, 2015: 26,000 meters, 2016: 25,200 meters, 2017: 7968 meters<sup>14</sup>.
- WAF’s collection ratio in 2020 has deteriorated due to a grace period for water bill payments introduced in relation with Covid 19 pandemic.
- WAF’s operational cost recovery ratio has continued to improve over recent years.
- The number of staff as compared to the number of connections has continued to improve over recent years and WAF has been able to increase its efficiency in this respect. WAF has developed its own training program and staff training programs are being implemented on a continuous basis.

### 3.1.5 Maturity of Utility Systems

In addition to service delivery and performance, it is also important to assess the maturity of utility systems and available resources to cope with possible extension of services. The following information has been collected:

**Table 3.4: WAF Maturity of Systems Analysis**

Performance Area	Key Performance Indicators	Unit	Analysis
Technical Systems	% Water production capacity used	Descriptive	WAF is delivering water through over 30 separate water supply systems in towns and villages in Fiji. In those areas where it has a distribution area, WAF is supplying water to about 100% of the population. In the Greater Suva Area, the limit of capacity is being reached, but additional capacity is being added under the new GSA Urban WSS

<sup>13</sup> Source: PWWA/IBNET Benchmarking System

<sup>14</sup> Source: WAF Annual Reports 2013/14, 2015, 2016, 2017



Performance Area	Key Performance Indicators	Unit	Analysis
			Project. Additional capacity is required for water supply service delivery in rural areas.
	% Sewerage capacity used	Descriptive	Regarding sewerage, WAF is providing services through 11 WWTPs in 9 towns and villages. Treatment Plants in the GSA area are running at full capacity, but this is scheduled for upgrading and extension under the new GSA Urban WSS project. Government aims at a WW coverage rate of 42% in urban and rural areas by 2021. Question is whether this is financially feasible.
	Power Supply Reliability	descriptive	Power outages are quite regular and WAF is trying to cope through construction of backup systems.
	Monitoring of pressure and quantities in networks	descriptive	WAF is making extensive use of Supervisory Control and Data Acquisition Systems (SCADA) to measure pressure and quantities in its network. All connections are metered, which makes it possible to closely monitor pressure and quantities in the network. The quality of residential water meters is not always adequate.
Financial	Borrowing Capacity: debt to equity ratio	%	Government provides WAF with a grant for operational expenses and a capital grant for capital expenses. WSS tariffs are set by the government and revenues are directly transferred to a government account. For all practical purposes, WAF is financially fully dependent on the Government. The financing of the recent GSA WSS project is also arranged by and processed through Government channels.
Transparency	Timely and accurate financial reporting available and accessible for public	descriptive	Annual Reports with the audited financial statements are prepared and (with a delay) accessible for the public via the WAF website. The latest externally audited annual report is for the year 2017. External audits are carried out by the Auditor General's Office of Fiji but lagging. An internal Audit Unit within WAF does exist. KPMG Fiji has been contracted to carry out an external audit of systems and procedures.
HRM	Training policy and implementation: number of employees undergoing training disaggregated per category and gender	descriptive	Each year WAF prepares and implements a training plan. Each staff member must undergo several mandatory courses (induction course, occupational health, and safety, etc.). In addition, there are courses for each category of staff. WAF uses a range of training providers for this purpose. International training: WAF sends staff for international training, for example in WAF's twinning arrangements with Australian water utilities and to training programs in New Zealand, the Netherlands, and India (2017).
	Gender equality and social inclusivity policies in place <sup>15</sup> .	descriptive	12% of WAF's staff is female and WAF is actively encouraging women to take up careers in the utility. It also endorses strong advocacy for gender equality through recruitment, promotion, training, and policy.
Organization & Strategy	Strategy Document	descriptive	WAF has developed a high-level strategic plan 2020-2025 with three strategic goals: Assets, Culture and Finance. The strategic plan is the basis of Annual Business Plans which detail the actions to be taken by corporate

Performance Area	Key Performance Indicators	Unit	Analysis
			departments and which is also linked to each individual employee through bi-annual Personal Development Plans. Progress of the achievement of strategic goals will be reported to the Board quarterly through Annual Business Plan Progress Reports.
	Organization Charts	descriptive	The Strategic Plan includes an organization chart and outlines plans fostering a culture of accountability.
Innovation	Use of advanced technology	Descriptive	<ul style="list-style-type: none"> <li>WAF has upgraded and extended its SCADA and telemetry system, including the establishment of a National Control Center in Suva to monitor and control its assets and operations.</li> <li>WAF aims at the introduction of smart meter technology.</li> <li>WAF is making extensive use of GIS technology</li> </ul>
	Use of advanced billing systems	descriptive	In 2019 WAF introduced hand-held meter reading devices with a variety of functions
Resilience	Technical resilience	Descriptive	<ul style="list-style-type: none"> <li>Major infrastructure upgrades will make WAF assets more climate resilient. – In 2016 WAF adopted “Clean Development Mechanism” (CDM) technology at the Kinoya Sewage Treatment Plant and the reduction of the computed emissions at 22,000 tonnes, WAF was able to claim \$350,000.00 through the ADB. This not only reduces emissions but also 50% of the current power bill of the Kinoya Sewerage Treatment plant.</li> <li>Power outages cause regular interruptions in service delivery in various systems.</li> </ul>
	Organizational resilience	Descriptive	<ul style="list-style-type: none"> <li>WAF has plans in place for emergency situations, but resources are not always sufficient for implementation</li> <li>WAF has an independent board of directors. In WAF’s Strategic Plan 2000-2025 it aims at creating a culture of accountability, personal responsibility, personal development, client orientation and collaboration.</li> <li>WAF’s weakness lies in that it is financially fully dependent on the Government.</li> </ul>

Source: Authors

## 3.2 General Environment

### 3.2.1 Topographic and Environmental Conditions

Fiji is a group of volcanic islands belonging to Oceania group in the South Pacific. Its topography is dominated by mountainous terrain, mostly dormant volcanoes. Its highest point is Tomanivi at 1,324 m and the total land area is 18,270sq. km.

Maximum temperatures in Fiji rarely move out of the 31C to 26C range all year round. Fiji’s wet season is normally from November to April. Annual rainfall on the main islands is between 2000mm and 3000mm on the coast and low-lying areas, and up to 6000mm in the mountains.

Typically, the smaller islands in Fiji receive less rain than the main Island, with annual rainfall ranging from 1500mm to 3500mm. Cyclones do occur in Fiji and are normally confined to wet season.

**Table 3.5: Fiji summary of topographic and environmental conditions**

Issues	Indicators	Assessment
Topographic conditions	Type of landscape	Fiji consists of mountainous terrain but in general towns and villages are easily accessible. There are several rather remote, outer islands.
Water Resources	Availability Type	All major towns in Fiji are using surface water as the main source for drinking water. Smaller islands are making use of groundwater, which sometimes is polluted due to poor sanitation and lack of environmental management.
Extreme weather events	Occurrence Severity	Fiji is vulnerable to natural disasters and is normally affected by 4-6 tropical cyclones each year, varying in severity. Tropical cyclones consist of heavy rainfalls, extreme winds, and rising sea levels. The combination of these effects causes severe coastal flooding. Recent category 5 severe tropical cyclones were Yasa in 2020, Harold in 2020 and Winston in 2016.

Source: Authors

### Conclusion:

Geographic conditions in Fiji do not pose a serious issue for WSS service delivery. Water resources generally are abundant, except for some smaller islands which must rely on fragile groundwater. WSS infrastructure must be resilient for extreme weather events such as cyclones and coastal flooding.

### 3.2.2 Socio-Economic and Demographic Conditions

Fiji has one of the highest average incomes in the region, with an estimated gross domestic product (GDP) per capita of USD4,720 (2020, current prices). Income distribution, however, is inequitable, with rural incomes significantly below those in urban areas.

Some 30% of the population lives under the national poverty line<sup>16</sup>, with poverty in rural areas twice as high as in urban areas. Poverty in Fiji is characterised by a lack of access to essential services and income-earning opportunities, rather than hunger or severe destitution. The unemployment rate is 4.8%. Social and health indicators, although improving, are relatively poor.

Fiji's 2020 total population was 896,444 compared to 884,887 in the 2017 census. This is an increase of 11,557 or 1 per cent. The average annual population growth in the past 3 years has been 0.33 per cent, due to low birth rates and out migration. The median age of population is 27.5 years. Men make up 50.7 per cent of the population while women make up 49.3 percent.

55.9 percent of Fiji's population reside in urban areas, an increase from 50.7 percent in 2007. The urban population stood at 494,252, an increase of 69,406 (16.3%) from 2007. This is attributed to extension of town boundaries and due to movement of people from rural to urban areas.

Rural to urban migration is likely to continue, resulting in an increasing proportion of the population requiring urban services. While there are plans to develop provincial centres, these are unlikely to significantly slow the rural to urban shift over the next 10 years.

<sup>16</sup> The Fiji Bureau of Statistics has defined the national basic needs poverty line (BNPL) at FJD 2,179.39 per adult equivalent (PAE) per year (or FJD 8717.56 per year for a household with 4 adult equivalent).

The average water bill of a household using 6m<sup>3</sup> per month amounts to USD 5.12 per year. This is a very low amount in comparison to the average per capita GNI of USD 4,720 per year. Water tariffs are kept low by the Fiji Government, and WAF is heavily subsidized by the Government to cover its operational costs. Low water rates are good for people living under the poverty line.

**Table 3.6: Fiji summary of demographic and economic conditions**

Performance Area	Indicators	Assessment
Economic Development <sup>17</sup>	Per capita GDP	USD 4,881 (2020, current)
Socio-economic development	Per capita GNI	USD 4,720 (2020, current)
Poverty Rate	% People living below poverty line	29.9% average 40.5 % in rural areas 20.4 % in urban areas
Affordability of 6m <sup>3</sup> water	% of per capita GNI	In 2020, the annual bill of a household using 6m <sup>3</sup> per month amounts to USD 5.12 per year which is 0.1% of average per capita GNI, which is very low. Tariffs are heavily subsidized by the Government.
Urban population	%	About 56% of people live in urban areas which are growing at an estimated rate of 1.6% per year
Rural Population	%	44% of the population lives in rural areas. Growth in rural areas shows a negative rate of 0.43% per year, due to continuing urbanization.
Population growth	%	Average growth of 0.72% per year (UN Population Data)
Population density	Persons/km <sup>2</sup>	Average population density is low and estimated at about 49 persons/km <sup>2</sup> .

Source Socioeconomic data: World Bank: <https://data.worldbank.org/>

Source Population data: UN population division: [World Population Prospects - Population Division - United Nations](#)

### Conclusion:

Fiji has a relatively high level of socio-economic development; however, the economy has seriously suffered under the impact of COVID-19. About 30% of the population lives under the poverty line, especially in rural areas, and the proportion of poor people may further increase. It is important to ensure that poor groups of society have access to clean water and adequate sanitation, especially in times of a pandemic. Urbanization is likely to continue, which will further increase the demand for urban type of WSS service delivery.

## 3.3 The Policy and Institutional Environment

### 3.3.1 Government WSS Policies

Government policies and strategies have a profound effect on the functioning of the WSS sector. The table below provides a summary of the current policy and institutional environment in which WAF operates.

<sup>17</sup> Source: World Bank data

**Table 3.7: Fiji summary of Government Policies**

Performance Area	Indicators	Assessment
Policy/Strategy	Approved Water Sector Policy in place	<p>The 2013 Fijian constitution in sections 35 and 36 stipulates that access to sanitation and clean drinking water is a basic human right.</p> <p>The Fijian Government’s 20-year National Development Plan (NDP) aims at providing “Clean and safe water in adequate quantities and proper and adequate sanitation for every Fijian household” and outlines concrete programs and projects to achieve this goal.</p> <p>The Rural Water and Wastewater Policy was formally approved in July 2021 and is an update of an earlier policy document dating from 2012. It aims at providing the rural population 100% access to safe and sufficient drinking water and 60% access to centralized sewerage systems by 2031.</p> <p>WAF is responsible for providing access to quality drinking water and wastewater services to customers residing in urban areas and rural areas of Fiji. WAF’s strategy is summarized in its Strategic Plan 2020-2025 and its 20-year Masterplan of 2017. It is not fully clear if WAF is responsible for WSS for the whole of Fiji or only in its service areas.</p> <p>A range of other acts, policies, and strategies do exist and are listed in Annex 1 to this report.</p>
Community Service Obligations and subsidies	Descriptive	Since its establishment, WAF has been heavily subsidized by the Government of Fiji, which each year provides subsidies for operational and capital budgets. A study carried out in 2016 found over the period 2010-2014 a backlog in operational subsidies of FJD 295.2m and a backlog in capital subsidies of FJD 220.6 million. Since then, the situation has largely remained the same with subsidies that fall short of what is needed to professionally operate a modern water utility and sustain the assets needed for this.
Funding (gap)	Utility access to financial resources	Through the government, WAF has recently been able to secure funding from development partners for the GSA Water Supply and Sanitation Project. Due to its financial dependence on the government, WAF would not be able to independently borrow money for funding of future investments.
Human Resources	Availability and use of WSS training facilities	There are ample training facilities in Fiji which are being used by WAF to implement its training plan. For more advance training, WAF makes use of international training institutions and its twinning with water utilities in other countries.
Gender issues	Specific Policy for women and underprivileged groups	WAF is actively encouraging women to take up careers in the utility. The Authority also endorses strong advocacy for gender equality through recruitment, promotion, training, and policy.
Monitoring	Monitoring System in place and producing regular and reliable reporting	<ul style="list-style-type: none"> <li>• WAF is increasingly using SCADA to monitor its operations and the condition of its assets.</li> <li>• WAF has a monitoring and evaluation framework for the Strategic Plan that is reviewed bi-annually through the provision of the Annual Business Plan and associated KPIs, reported to the Board every 3 months.</li> <li>• WAF provides benchmarking data on its performance to the WB operated IBNET Water Utility Benchmarking System and compares its performance with other water utilities in the region and beyond.</li> </ul>

Source: Authors

**Conclusion:**

Fiji has clear WaSH policies in place, which are fully aligned with SDG-6 and which are being implemented and monitored by the relevant sector institutions. WAF also has clear strategies, a training policy and plan and a gender policy, which are all being implemented and monitored. The main concern is the financial dependence of WAF on government subsidies and on financial assistance from development partners.

**3.3.2 Institutional and Regulatory Framework****Table 3.8: Fiji summary of Institutional and Regulatory Framework**

Performance Area	Indicators	Assessment
Service Standards	Existence, responsiveness, and predictability of service standards	WAF has published a Customer Charter 2020-2022 in which it defines its service standards which it is committed to deliver to its customers and it also explains the obligations of its customers. Many indicators are being reported through the PWWA/IBNET benchmarking system. WAF prepares internal reports on the achievements under its Customer Charter.
Service area of the Utility	Mandate for water supply Mandate for sanitation	WAF is mandated to provide WSS services everywhere in Fiji.
Sector Regulation	Existence, responsiveness, and predictability of regulatory system	WAF is financially dependent on the government for the setting of tariffs and for operational and capital subsidies. So far, the subsidies have fluctuated and have been insufficient to cover costs.
Tariff Setting	Reliability, transparency, and effectiveness of tariff setting system	Although Section 33 of the Promulgation authorizes the Board of WAF to set rates, water and sewerage tariffs have been determined by the government and have not been revised since the year 2000. All collections are transferred immediately to the government account.
Institutional Framework	Clarity of responsibilities and level of overlap	<ul style="list-style-type: none"> <li>WAF is responsible for WSS service delivery and there appears to be no overlap in institutional responsibilities.</li> <li>The Dept. of Water and Sanitation is the regulatory and policy making authority. It has a small unit which supports WSS activities in rural areas.</li> <li>There are various other ministries that assist in planning and monitoring of urban and rural WSS activities carried out by WAF.</li> </ul>
Level of Utility Autonomy	Formal and actual level of autonomy of utility management	WAF is a commercial authority established under the Public Enterprise Act but is still very much in transition from a government department to a commercial enterprise. It is governed by a Board of Directors consisting of 6 persons, appointed by three Ministries. External audits are carried out by the Auditor General's Office, but audits are lagging behind several years. WAF has an internal audit unit. WAF's tariffs are determined by the Government and all collections are immediately transferred to a government account. WAF receives annual operational and capital subsidies to run its operations and maintain and extend its assets.

Source: Authors

**Conclusion:** Fiji has a clear institutional and regulatory framework. WAF is allowed to provide WSS services throughout Fiji and the law encourages WAF to extend its coverage as much as possible. Financially, WAF is fully dependent on the operational and capital subsidies provided by the Government. Throughout the years, the government has shown its commitment to the WSS sector and provided the subsidies, but from earlier assessments it can be noted that in most years subsidies have been too low and in often were provided too late. Apparently, the government prefers a system in which users pay low water tariffs and the financial shortages are subsidized by the taxpayer. This appears to be unnecessary, as water tariffs are well within the affordability range of most customers and too low tariffs do not stimulate the efficient use of water.

### 3.4 Summary of the Diagnostic Analysis

To summarize the results of the diagnostic analysis use is made of a spider diagram<sup>18</sup>, which depicts the scores of the various factors which jointly determine WAF's contribution to achieving SDG-6. The spider diagram is based on scores for each of the internal and external factors as presented in table 3.10 below.

**Table 3.9: Summary of Diagnostic Analysis**

Nr	Indicator	Score	Remarks
1	WSS Sector Performance: Overall Access to safe Water	4	JMP
2	WSS Sector Performance: Overall access to adequate sanitation	5	JMP
3	Utility Service Delivery	3	Average of Continuity 3, Water Quality 4, water consumption 5, Water Coverage in service area 5, Sewerage Coverage in service area 0
4	Utility Performance	3	SDG 6 Assessment: average of NRW 2, Staff ratio 5, operational cost ratio 2, metering ratio 5 and collection ratio 3
5	Maturity of Utility Systems	4	Technical Systems 3, Financial Systems 3, Organization, 5, Innovation 4, Resilience 3
6	Natural Environment	4	topography 4, water resources 5, Extreme weather events 3
7	Socioeconomic and Demographic Conditions	3	GNI 3, Demography 3
8	Policy Environment	4	Policy 5, Access to finance 3, Access to training 5
9	Institutional/Regulatory Environment	5	Population in Mandate 5, Tariff system 4

Source: Authors

The scores vary between 1 and 5 for each of the factors, where 1 is a very poor or low score and 5 is a very good or high score. The ranking table for the scores on the various indicators is presented in Annex 3 to this report. The results are presented in the spider diagram in figure 3.1 below.

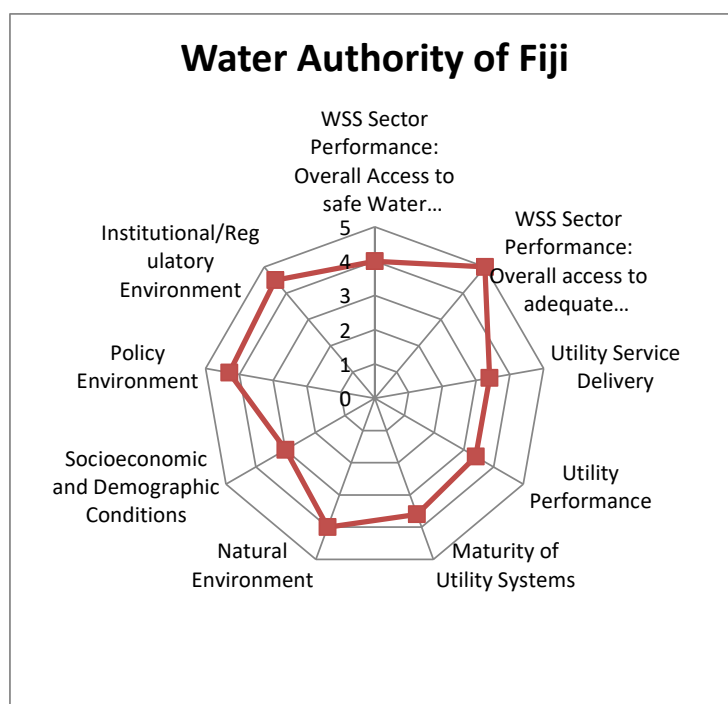
<sup>18</sup> The use of a spider diagram for this purpose was suggested by officials of DFAT in the review of the draft Interim Report of the project.

Access to safe Water Supply: High with 94% country wide access to basic or safely managed water supply

Access to safe Sanitation: High with 99% access to basic or safely managed Sanitation

WAF Service Level: Reasonably high service levels: high coverage for water supply in service area, low coverage for sewerage in service area, high continuity, and water consumption but still some issues with water quality, especially in rural areas.

**Figure 3.1: Summary of Diagnostic Assessment**



Source: Authors

WAF Performance: Relatively poor performance on NRW, low performance on operational cost recovery but strong support from government, strong performance on organization, HRM, metering, but still some issues in collection of bills (partly due to Covid 19).

WAF System Maturity: No spare capacity for water supply and sewerage; strong organizational, HRM and gender system performance and medium maturity of the financial system, resilience, and innovation. Relatively high score on innovation.

Natural Environment: Topography relatively easy to manage, in most places abundant in water resources but frequent extreme weather events.

Demography and Economy: 44% of the population lives in rural areas, with relatively low population density and low levels of income; average GNI is moderate, but water rates are affordable.



Policy Environment

Clear WaSH policies are in place, WAF fully dependent on government and development partners for financial resources, but excellent access to training institutions.

Regulatory environment

Regulatory environment is clear; WAF's service area covers the whole country; water tariffs are well regulated, but implementation remains very much political.

## 4 SWOT ANALYSIS

The key internal Strengths and Weaknesses of WAF and the key external Opportunities and Threats in relation with enhancing access to safe WSS have been put in the SWOT table below. Not all the factors are equally important, and a first step is to identify the most important ones, say maximum 3 or 4 strengths, weaknesses, threats, and opportunities per square.

**Table 4.1: WAF SWOT table**

<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>• WAF has been able to maintain reasonably high service standards for water supply over the past ten years.</li> <li>• Current WSS projects in the greater Suva Area will alleviate the current shortage in capacity and allow WAF to expand its services and build more resilient infrastructure</li> <li>• WAF has the organizational capacity, technical know-how and human resources to expand its services into rural areas and informal settlements</li> <li>• Master Planning for system reticulation gaps has been completed for major &amp; small towns.</li> <li>• Increase customer awareness through social media.</li> <li>• Building a new workforce culture to improve working standards.</li> <li>• Disaster Preparedness Planning.</li> </ul>	<p><b>Weaknesses/constraints</b></p> <ul style="list-style-type: none"> <li>• About 200,000 people in Fiji do not yet have access to piped water supply.</li> <li>• Ageing infrastructure in combination with poor asset management (proactive maintenance)</li> <li>• NRW is too high and does not come down despite long-term efforts</li> <li>• Water quality, especially in rural areas, is not always up to standard</li> <li>• Liquid trade waste and Environment non-compliance</li> <li>• Operational and capital costs are not covered sufficiently</li> <li>• Wastewater coverage has deteriorated over the years.</li> </ul>
<p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• WAF is supported by ambitious government targets and policies.</li> <li>• Fiji in general has abundant water resources except on smaller islands which use groundwater</li> <li>• WAF is in a transition phase from a government department to a commercially run public enterprise. Commercial targets are not necessarily dominant over social targets. Water tariffs for average families are low.</li> <li>• WAF is mandated to provide WSS services throughout Fiji, and there is an opportunity to set ambitious targets and plan for achieving SDG6 by 2030.</li> </ul>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>• Financially, WAF is fully dependent on government subsidies for operational and capital budgets.</li> <li>• Expanding sewerage to rural areas is quite expensive and may not be financially feasible</li> <li>• About 40% of people in rural areas live below the poverty line.</li> <li>• Extreme weather events including tropical cyclones and flash flooding</li> <li>• Rural-Urban drift that places demand on existing urban infrastructure.</li> </ul>

From the above SWOT table, it can be concluded that WAF has the external drive and the organizational capacity to expand WSS services delivery into areas which are currently not, or insufficiently, serviced. Government policies and its mandate would allow WAF to formulate ambitious targets for achieving SDG-6 by 2030. However, to realize this, WAF is fully dependent on financial subsidies of the government, both for operational and capital budgets.

## 5 WAF SDG-6 STRATEGIC ACTION PLAN

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### 5.1 Introduction

After having completed the SWOT analysis, WAF management with support of consultants, have formulated recommendations and measures to accelerate universal access to safe WSS. The SWOT analysis and Confrontation Matrix has helped WAF in formulating an Action Plan, as follows:

- expand its services by making use of opportunities and strengths
- defend itself against threats by making use of its strengths
- improve on its weaknesses and in this way make use of external opportunities
- withdraw where external threats match with the internal weaknesses.

Carrying out the SWOT analysis has helped WAF to identify the key strengths and weaknesses that need to be addressed in the Action Plan.

### 5.2 Action Plan

WAF's Action Plan to enhance universal access to water and sanitation in Fiji consists of three components: 1) Improving WaSH in Informal Settlements, 2) Increasing water supply coverage in rural villages in Fiji and 3) carrying out public health education and behavioral change programs through social media and other communication channels. Each of the components will be described in more detail below.

#### 5.2.1 Water, Sanitation and Hygiene in Informal Settlements

According to UN-HABITAT an estimated 182,000 people or 20% of Fiji's population live in informal settlements. Most of these settlements are located along the major urban corridors in the Suva Nausori area, Nadi and in Labasa. Almost all lack access to basic services, particularly improved sanitation, drainage, and solid waste management. The areas are commonly located on marginal flood-prone lands, such as mangrove swamps. The urban settlements have the country's highest urban poverty rates.

Water, Sanitation, and Hygiene are critical aspects to any community but are severely lacking in informal settlements. Water safety practices, education in general, water borne diseases, and lack of overall hygiene are common problems with no easy solutions. Due to a lack of support, education, and resources, these problems go untreated, creating disease and unsafe living conditions. Wastewater channels run through communities, breeding bacteria and different illnesses. Toilet facilities are poorly managed and often unclean, creating an unsafe and unsanitary living environment. One goal of WAF is to upgrade informal settlements throughout Fiji by addressing water, sanitation, and hygiene issues.

Access to clean water to all Fijian is enshrined in the Fijian Constitution but water accessibility in informal settlements remains a challenge in Fiji, with new houses being built over night without a proper or legal water connection. Currently, the supply of water is characterized by crowded standpipes with an irregular unpredictable supply, low pressure, and by illegal connections.

## Improved Water Supply in informal settlements

One-way WAF hopes to achieve improved water and sanitation services is the so-called Gang-Metering Program. By implementing the “Gang Metering” program during the past 5 years, WAF has gained experience in providing safe water to informal settlements, where each house is connected to have their own water taps rather than sharing from communal standpipes.

### **Gang Metering Program**

*In most cases, informal settlements are located within the boundaries of the water supply network and established around formal residential areas. Due to the location within the network, these houses are eligible to be connected. The name Gang Metering program refers to the arrangement whereby meters are all installed and placed side by side along the main road. Each customer within the informal settlement will apply for their own meter which will be installed beside the others.*

*Gang Meters are typically installed for informal settlements where residents are squatting on land for which they have no legal rights or ownership. As part of WAF’s Conditions for New Connections, the applicant must have Proof of Ownership of their property and land on which (s)he resides. For squatters this can be provided in either one of two ways:*

- *Letter from the Squatter Resettlement Unit*
- *Letters from the Lands Department with approval for Temporary Connection and a letter in support to installation for new meters for people who reside on their native land.*

*Since residents do not have any legal rights or ownership of the land, WAF will install the meters at the roadside and the residents will run their connections from the meter to their respective house. Households pay a Lodgment Fee and the Costs of Connection. Costs vary between FJD 300 - FJD 450.*

As a priority, WAF wants to improve conditions in the Suva Nausori area, where it has identified 66 informal settlements with a population of about 50,000 people and an estimated number of 10,000 households.

**Figure 5.1: Informal Settlements in the Suva Nausori Area**

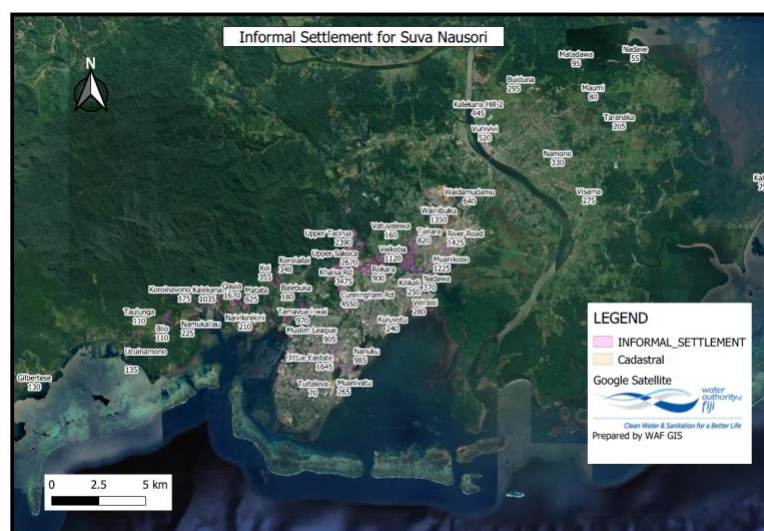


Figure 5.1 shows the informal settlements in the Suva Nausori area and a list of all the settlements along with the number of people living in each settlement is presented in Annex 3. Residents in several

settlements have been already connected as part of the new connection process under the Integrated Meter Management scheme. After completion of the initial program, meters have been installed based on applications received from these areas.

### *Improved Sanitation in informal settlements*

While water supply to the above informal settlements is currently being addressed by WAF, the provision of adequate sanitation remains a significant challenge. The Communal Septic Tank program aims at creating community managed toilet facilities that also act as community health and education centers. The purpose of having communal septic tanks is to stop open defecation in informal settlements and provide hygienic and adequate sanitary facilities to the people living in these areas.

A Communal Septic Tank is a community managed septic tank which is used and maintained by a minimum of five households. The community sharing the facilities must bear costs for the maintenance and the de-sludging of the septic tank. Any schools and health centers in these settlements which are not connected to WAF sewer network will also have a Communal Septic Tank.

As part of the communal septic tank project, septic sludge treatment plans also need to be developed. WAF is currently in the planning phase of this activity. The funding of investments in illegal settlements is an issue that matters to several other service providers, such as

- The Department of Infrastructure and Drainage (DID) has issues such as localized flooding due to informal waste disposal that leads to blockages in waterways;
- The Fiji Roads Authority – roads are often impacted upon by informal settlements developing within road reserves and affecting FRA’s activities.

WAF is looking into the possibilities of sharing the costs of servicing informal settlements in future between the various government agencies and address the issue in a more holistic manner.

*Under the European investment Bank (EIB) Project – “Support to the Fiji and Wastewater Project”, consultancy activities are proposed that will assist WAF in delivering sanitation services in the informal settlements. Activities proposed under the EIB project include:*

- *Investigating the legality of WAF’s services to informal settlements*
- *Assess current sanitation assets and systems*
- *Investigate the adoption of alternative technologies*
- *Investigate the adoption of tools such as the International Red Cross (IRC) Rapid Assessment tool to assess sanitation options*

*As part of the above project, a prioritization matrix will be developed to assess informal settlements including such factors as:*

- *Distance from a potential WAF connection point*
- *Current sanitation practices*
- *Topography and ease of servicing (complexity); and*
- *Additional factors*

*Based on the findings of the project, a strategy for WAF and/or other service providers/government entities will be developed on how to best serve informal settlements, including cost estimates. The strategy is expected to be ready in the first half of 2023.*

At present, WAF is directing efforts at promoting good hygiene practices, promote cost-effective and appropriate technologies and through all the above, improve the health and quality of life in informal settlements. It is expected that the use of Communal Septic Tanks will increase WAF coverage to informal settlements, rural areas and outer islands.

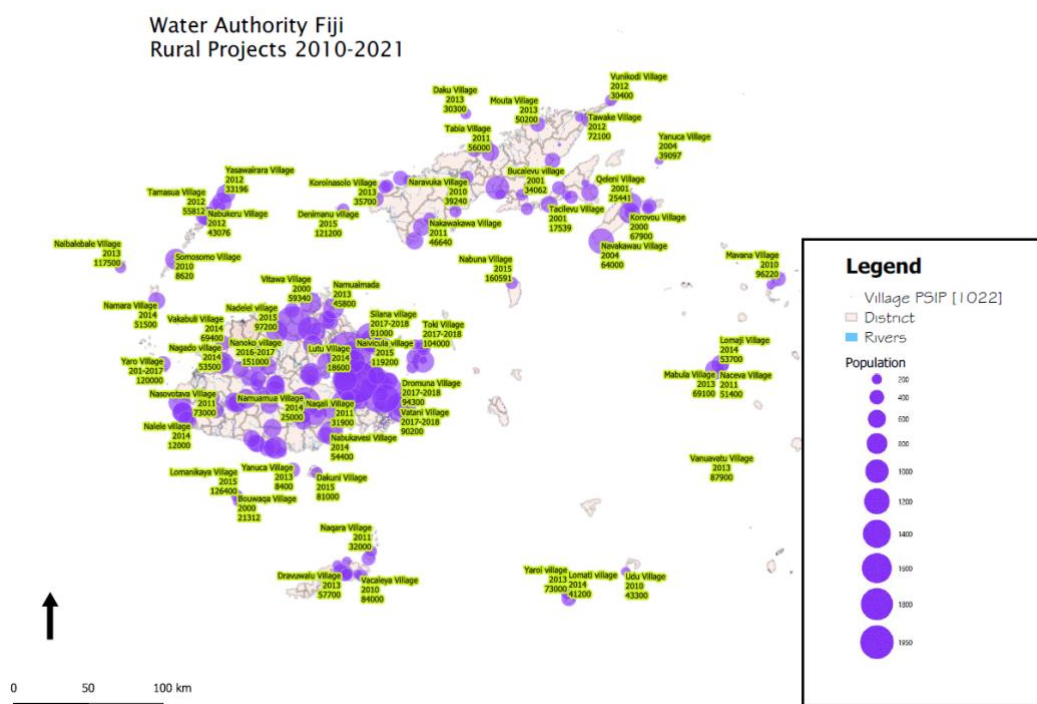
### 5.2.2 Improve Water Supply Coverage in Rural Areas

In 2021, an estimated 35% of the rural population (154,405 persons) was connected to WAF operated systems. The target in the current National Development Plan is to increase this percentage to 62%. Presently about 250,000 people in rural areas in Fiji do not yet have a connection to piped water supply.

Over the past 11 years, WAF has implemented 611 rural projects, providing water to about 137,500 Fijians for a total amount of FJD 83,9 million. This means approximately 56 projects per year which is a significant achievement by WAF in progressing SDG-6 goals. These projects mostly concerned construction and rehabilitation of water supply facilities in rural areas. Most of these projects have been carried out by WAF, using in-house construction resources. The rural water supply projects undertaken from 2010 to 2021 are shown in the Figure below.

With regard to rural WaSH, WAF is responsible for design and construction of Rural Water and Sanitation Schemes and co-ordinates, prepares, formulates, compiles, and implements Water Supply Management Plans (WSMP) for projects prioritized by the Ministry of Provincial Development and the Ministry of I-Taukei Affairs. Funding is subsidized from Government Budget through the Public Sector Investment Program (PSIP). Upon the endorsement of the WSMP, the Water Authority of Fiji will inform the community and collect the community contribution from those seeking government assistance before commencing construction works.

**Figure 5.2: WAF rural water supply projects 2010-2021**



The GIS Road mapping exercise undertaken by WAF will be a source of information in preparing a Master Plan for villages without access to water supply. During the past 10 years, WAF has succeeded in implementing a considerable number of rural water supply schemes. However, there remain many unserved communities that still have not received formal water supply schemes.

WAF's strategy to achieve the highest possible water supply coverage in rural area consists of the following key elements:

- Complete GIS mapping of villages to identify villages without access to water supply,
- Identify villages with current water supply systems that are at risk of supply failure and require system upgrades and are prioritized by the Department of Provincial Development and the Department of Taukei Affairs.
- Undertake desktop analysis determining costs of supply for each village (or combined water supply scheme)
- Prepare a prioritized implementation schedule to service all rural villages based on an evaluation matrix including factors such as:
  - Health risks
  - Logistical challenges
  - Technical complexity of the proposed system
  - Available community skills for maintaining the future system
  - Capital Costs
  - Operating Costs; and
  - Other relevant criteria.

The above prioritized and costed implementation would then form part of WAFs 5 Year and 20 Year Plans. In particular, the prioritized “Action Plan” would also be used to secure funding to implement the proposed works.

**Table 5.1: WAF Budget Request for Rural WaSH 2023-2026**

Year	Nr of Projects	Budget Millions FJD	Population Nr. Beneficiaries
2023	23	3.9	3,776
2024	32	5.0	7,562
2025	26	4.4	4,701
2026	31	7.7	8,595
Total	112	21.0	24,634

Source: Water Authority of Fiji

More details about the rural WaSH program component are presented in Annex 5 of this report.

An important problem is the lack of post implementation management and operation of rural WaSH schemes, which normally is the responsibility of the communities. There is a heavy dependence on Government and often there are no or only dysfunctional Water Committees to oversee the scheme, there is a lack of management support to the Water Committee by relevant authorities and there is no proper accountability. Measures to mitigate these shortcomings have been identified and include the early involvement and full participation of communities in all stages of the project.

#### **Invest in Combined Rural Water Supply Schemes**

A pilot rural combined water supply scheme project was constructed in 2019 which was successful. WAF will therefore be investing into 6 rural combined water supply scheme projects in 2021/22. These

projects combine rural scheme projects and incorporate 3-4 villages and settlements into one water supply system. Such systems are beneficial in achieving economies of scale and are recommended for future implementation by WAF.

### **5.2.3 Improve health education through social media**

Over the years, social media has overtaken the traditional paper communication methods. WAF has invested in social media by creating Facebook, Twitter, Instagram, LinkedIn and TikTok accounts to create visual presentations to their customers. Public announcements such as burst mains, planned water shut and project commission updates are uploaded on social media.

WAF also intends to use social media, along with more traditional methods such as community meetings and visits to individual households, to educate people on issues related to public health and waterborne diseases to explain the need for sanitary behavior and the relation between safe sanitation, the use of water and public health.

In addition to public health education and behavioral change required for improved health outcomes, meetings with rural communities can also be used to discuss issues such as operation and maintenance of rural WaSH systems, training of water committee members and establishing financial systems for operation and maintenance.

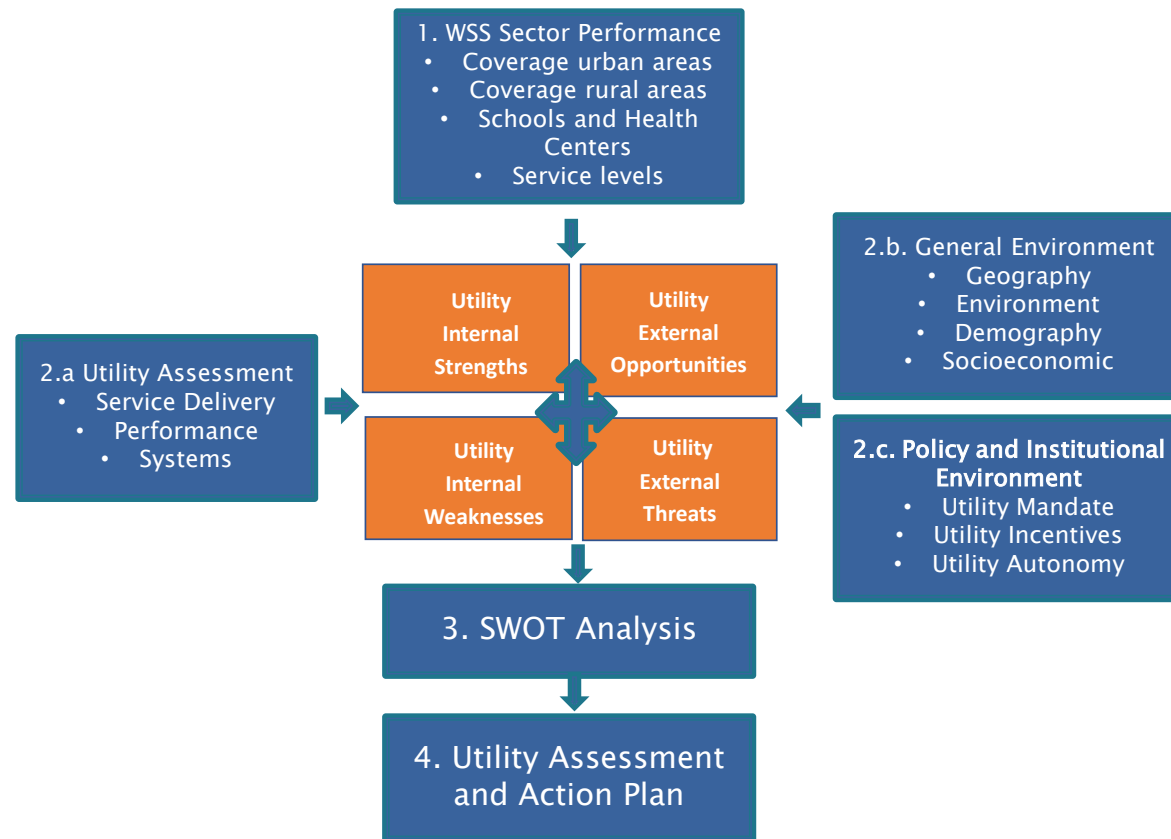


## Appendix 1 – List of Documents

- Rural Water and wastewater Policy July 2021
- WAF 5 & 20Year Master Plan 2017
- Constitution of the Republic of Fiji
- Environment Management Act 2005
- iTaukei Lands Trust Act 1940
- Land Use Act 2010
- Mining Act 1965
- Public Health Act 1935
- Rivers and Streams Act 1880
- Water Authority of Fiji Promulgation Act 2007
- Rural Land-Use Policy; 6
- National Climate Change Policy
- Fiji Food and Nutrition Policy 2008
- The National Disaster Risk Reduction Policy 2018 -2030.
- Lautoka City Report UN
- Fiji Building Code
- WAF Training Plan 2020
- WAF Rural Water and Sanitation Policy Review 2016
- ADB - RRP Greater Suva Area Urban Water and Sanitation Project
- WAF Strategic Plan 2020-2025
- WAF Annual Report 2017
- WAF Annual Report 2016
- WAF Annual Report 2015
- WAF Annual Report 2013-2014
- PRIF 2016 – WAF Utility Report

## Appendix 2 – Diagnostic Framework Key Indicators

### Diagnostic Framework



### Diagnostic Framework - List of Indicators<sup>19</sup>

Performance Area	Key Performance Indicators <sup>20</sup>	Data Source	Score
<b>Overall WSS Sector Performance</b>			
Water Supply	Overall Coverage (urban/rural) *	JMP	%
	Contribution Water Utilities	Utility/JMP	%
	Contribution Other Sector Organizations	Govt/JMP	%
	Service Levels*	Utility/JMP	1 safely managed 2 basic level 2 limited 4 unimproved 5 no
Sanitation	Overall Coverage (urban/rural) *	JMP	%
	Contribution Water Utilities	Utility/JMP	%
	Contribution Other Sector Organizations	Govt/JMP	%
	Service Levels*	Utility/JMP	1 safely managed 2 basic level 2 limited 4 unimproved 5 no
	Proportion of household wastewater safely treated	UN/Habitat monitoring data	%
	Coverage and Service Levels in Schools and Health Facilities	JMP	1 safely managed 2 basic level 2 limited 4 unimproved 5 no
Gender Equality and Social Inclusion (GESI)	Minimum standards for mainstreaming GESI	JMP, Government	Descriptive

<sup>19</sup> The table in Appendix 2 presents the key indicators which have been identified to assess the status of the various performance areas. During the study, data have been collected on a number of these indicators to assess progress on SDG-6 in the various countries. However, it has not been possible to find data for all indicators. The results of the assessments are presented in the spider diagrams in figure 3.5. The indicators for which no data were available have not been used in the spider diagrams.

<sup>20</sup> Those indicators marked with an asterisk (\*) have been used in developing the spider diagrams in chapter 3 of this report. Indicators with a source “benchmarking” are defined according to the World Bank operated IBNET Benchmarking System ([www.ib-net.org](http://www.ib-net.org)). Indicators with a source JMP are defined in accordance with the WHO/UNICEF Joint Monitoring Program (<https://washdata.org>). Other indicators are defined in Appendix 3 below.

Performance Area	Key Performance Indicators <sup>20</sup>	Data Source	Score
<b>Utility Service Level</b>			
Inclusiveness	Drinking Water Coverage in service area*	Benchmarking	%
	Sanitation Service Coverage in service area*	Benchmarking	%
Water Supply	Continuity of service*	Benchmarking	hours/day
	Continuity (customers with discontinuous supply)	Benchmarking	%
	Quantity of water supply (residential consumption) *	Benchmarking	l/p/d
	Nr of microbiological tests taken per year	Benchmarking	No
	Percentage of non-compliant tests*	Benchmarking	%
Wastewater	Availability of on-site sanitation services	Utility	descriptive
	Wastewater and Faecal Sludge Quality passing primary and secondary level of treatment		%
Responsiveness to customers	Is there a customer charter and has the charter been made known?	Benchmarking	Descriptive
	Nr. of complaints /1000 connections	Benchmarking	Number
<b>Utility Performance</b>			
Technical	Non-Revenue Water *	Benchmarking	%
	Energy Efficiency (Energy costs as % of operational costs)	Benchmarking/ Utility	%
Financial	EBITDA Margin (% of Revenues)	Benchmarking	%
	Operating Cost Recovery Ratio*	Benchmarking	%
HRM	Staff per 1000 connections*	Benchmarking	Number FTE
Organization & Strategy	Aggregate Performance Ratio (AGPAR)	Benchmarking	AGPAR score
Commercial	Metering Ratio*	Benchmarking	%
	Collection Ratio*	Benchmarking	%
<b>Maturity of Utility Systems</b>			
Technical Systems	% Water production capacity used *	Utility	%
	% Sewerage capacity used *	Utility	%
	Power Supply Reliability *	Utility	descriptive
	Monitoring of pressure and quantities in networks *	Utility	descriptive
Financial Systems	Borrowing Capacity: debt to equity ratio *	Benchmarking System, Utility	%
	Timely and accurate financial reporting available and accessible for public *	Utility/Govt	descriptive
Organization	Training policy and implementation: number of employees undergoing training disaggregated per category and gender	Utility	descriptive

Performance Area	Key Performance Indicators <sup>20</sup>	Data Source	Score
	Gender equality and social inclusivity policies in place <sup>21</sup> *	PWWA Benchmarking Report 2020/Utility	descriptive
	Strategy Document *	Utility	descriptive
	Organization Charts *	Utility	descriptive
Innovation	Use of advanced technology *	Use of electromagnetic flowmeters, smart meters, SCADA and GIS	descriptive
	Use of advanced billing systems *	Payment by bank, automatic transfer, annual meter readings, etc.	descriptive
(Climate) Resilience	Technical resilience *	Construction, spare storage capacity, backup generators, IT backup systems.	descriptive
	Organizational resilience *	Use of emergency plans, data, emergency drills, design standards, etc.	descriptive
<b>General Environment</b>			
Topographic conditions	Type of landscape *	Utility/Govt	Accessibility
Water Resources	Availability and type *	Utility	Descriptive
Extreme weather events	Occurrence and severity *		Descriptive
<b>Socio Economic Conditions and Demography</b>			
Socio-economic development	Per capita GNI *	ADB/WB	GNI/capita
Affordability of 6m3 water	% of per capita GNI	Benchmarking	%
Urban population	% Population in urban areas *	UN population data	%
Rural Population	% Population in rural areas *	UN population data	%
Outer Island Population	% Population in outer islands	UN population data	%
Population density	Nr of persons/km2	UN population data	Number

<sup>21</sup> The types of policies in place for flexible work arrangements; maternity/paternity leave, medical leave, family leave, part-time employment, flexible core hours, rules and/or regulations to prevent sexual harassment, gender targets for share of female employees, separate toilets for men/women/gender neutral/unisex at all sites, menstrual hygiene management facilities, childcare facilities, lactation rooms etc

Performance Area	Key Performance Indicators <sup>20</sup>	Data Source	Score
<b>WSS Policy Environment</b>			
Policy/Strategy	Approved Water Sector Policy in place *	Utility/Govt	Descriptive
Gender issues	Specific Policy for women and underprivileged groups	Govt/Utility	Descriptive
Funding (gap)	Utility access to financial resources *	Utility/Govt	Descriptive
Human Resources	Availability and use of WSS training facilities *	Utility/Govt	Descriptive
Monitoring	Monitoring System in place and producing regular and reliable reporting *	Utility/Govt	Descriptive
<b>Institutional and Regulatory Environment</b>			
Service area of the Utility	% of total population within Utility mandate*	Utility/Govt	%
	% of urban population within Utility mandate*	Utility/Govt	%
	% of rural population within utility mandate*	Utility/Govt	%
Sector Regulation (including quality standards)	Existence, responsiveness, and predictability of regulatory system	Utility/Govt/Regulator	descriptive
Tariff Setting	Reliability, transparency, and effectiveness of tariff setting system *	Utility/Govt/Regulator	descriptive
Institutional Framework	Clarity of responsibilities and level of overlap	Utility/Govt	descriptive
Level of Utility Autonomy	Formal and actual level of autonomy of utility management	Utility/Govt	descriptive

### Appendix 3: Spider Diagram Scoring Table <sup>22</sup>

Remarks	Scores				
	Strong-5	4	3	2	1 - Weak
<b>Overall WSS Sector Performance</b>					
Country wide access to safe water (safely managed and basic service level)	100-95%	95-85%	85-75%	75-50%	50 -0%
Country wide access to safe Sanitation (safely managed and basic service level)	100-95%	95-85%	85-75%	75-50%	50 -0%
<b>Utility Service Levels</b>					
Water Coverage Service Area	100-95%	95-85%	85-75%	75-50%	50 -0%
Sewerage Coverage Service Area	100-95%	95-85%	85-75%	75-50%	50 -0%
Continuity of service	24 hours	23 hours	22 hours	21 hours	≤20 hours
Drinking Water Quality	100%	95-100%	90-95%	85-90%	≤80 %
Drinking Water consumption	175-150lcd	125-150lcd	100-125lcd	75-100lcd	<75lcd
<b>Utility Performance</b>					
Non-Revenue Water	<25%	25-35%	35-45%	45-55%	>55%
Staff Ratio	<5	5-7	7-9	9-11	>11
Operational Cost Ratio	>150%	125-150%	100-125%	75-100%	<75%
Metering Ratio	100-95%	95-85%	85-75%	75-50%	50 -0%
Collection Ratio	100-95%	95-85%	85-75%	75-50%	50 -0%

<sup>22</sup> In developing the spider diagrams, use has been made of the list of Indicators presented in Appendix 2. However, as it has not been possible to find sufficient data, not all indicators listed in Appendix 2 have been used in developing the spider diagrams and only those indicators for which data for all countries and utilities were available, have been used.

Remarks	Scores				
	Strong-5	4	3	2	1 - Weak
<b>Maturity of Utility Systems</b>					
Technical Systems	Ample excess capacity in water/sewage capacity available, reliable power and adequate monitoring in place	Some excess capacity in water and sewerage systems, reliable power most of the time and most of system monitored.	Water/sewage systems operate at full capacity, regular power outages and about 75% of system is monitored.	Water/sewage systems lack capacity during peak hours, regular power outages and about 50% of system is monitored.	Water/sewage systems lack capacity to meet demand, power outages do occur often and about 50% of system is monitored.
Financial Systems	Regular and timely Annual Reports with the audited financial statements are prepared and accessible for the public. Debt to equity ratio < 1	Annual Reports with the audited financial statements are prepared with 1-2 years delay and accessible for the public. Debt to equity ratio 1-1.5	Annual Reports with the audited financial statements are prepared with > 2 years delay and not accessible for the public. Debt to equity ratio 1.5-2	Annual Reports with financial statements are prepared but audits are >2 years delayed and not accessible for the public. Debt to equity ratio 2 or more.	Annual Reports are not regularly prepared and not accessible to the public. Debt to equity ratio >2
Organization	Strategy document, organization structure, training policy and gender policy all available, implemented and monitored.	Strategy, organization structure, training policy and gender policy available, but only partly implemented and monitored.	Strategy, organization structure, training policy and gender policy all available, but no clear implementation or monitoring	Strategy, organization structure, training and gender policy only partly available, without clear implementation or monitoring	Strategy, organization structure, training and gender policy are mostly lacking.
Innovation	SCADA fully implemented throughout WSS systems; Smart meters installed for all customers, various payment methods in place	SCADA only partly implemented; smart meters partly installed, various payment methods in place	SCADA installed but not yet operational; Smart meters being piloted, some payment methods in place	Plans for SCADA and smart meters but not yet implemented, limited payment methods in place	SCADA not implemented; no smart meters installed, only cash payment methods in place
Resilience	Utility infrastructure is resilient against extreme events. Resilience plan in place and being implemented.	Utility infrastructure is being made resilient against extreme events. Resilience plan in place but not implemented.	Utility infrastructure is only partly resilient against extreme events. Resilience plan in place but not implemented.	Utility infrastructure is not resilient against extreme events. Resilience plan in place but not implemented.	Utility infrastructure is not resilient against extreme events. No resilience plan in place.



Remarks	Scores				
	Strong-5	4	3	2	1 - Weak
<b>General Environment</b>					
Topography	Easy access to towns and villages	Ease of access to towns and villages is moderate	100 to 200 islands. Ease of access to towns and villages is moderate to difficult	200 to 1000 islands. Access to towns and villages is difficult	Above 1000 islands. Access to towns and villages is very difficult
Water Resources	good water resources available for all of the country with excess to meet demand	good water resources available for ALL of the country but does not meet the demand	good water resources available for SOME of the country and these areas exceeds the demand	good water resources available for SOME of the country but does not meet the demand	poor water resources available for most of the country.
Exposure to extreme weather events	Extreme weather events do not normally occur	Extreme weather events only in rare cases, less than once every 10 years	Extreme weather events do occasionally occur: less than once every 5 years	Extreme weather events occur regularly, once every 1-5 years.	Extreme weather events occur often, at least once every year
<b>Socio Economic Conditions and Demography</b>					
Average GNI per capita	>USD 10,000	USD 10,000- 5,000	USD 5,000- USD 2,000	USD 2,000- USD 1,000	< USD 1,000
Urban Population	> 80%	60-80%	40-60%	20-40%	< 20%
<b>WSS Policy Environment</b>					
Water and Sanitation Policy	Clear WaSH policy in place, implemented and monitored	WaSH policy in place but only partly implemented and monitored due to lack of resources	WaSH Policy in place but not implemented nor monitored	Only parts of a WaSH Policy in place and only partial implementation and monitoring	No WaSH Policy in place
Access to Finance	Policies allow utility to independently generate sufficient revenues and/or borrow sufficient funds for investments	Policies allows utility to generate revenues for most investments and government assists with remaining funding and/or provides access to third party funding	Policies restrict utility in generating sufficient revenues, but government assists with sufficient funding and/or provides access to third party funding	Policies restrict utility in generating sufficient revenues and only partial support for funding from government and development partners	Policies restrict utility in generating sufficient revenues and there is limited support from government and development partners

Remarks	Scores				
	Strong-5	4	3	2	1 - Weak
Access to Training	Wide access to national and regional training programs for training of staff	Wide access to national training programs, moderate access to regional training programs	moderate access to national and regional training programs	moderate access to national training programs and limited access to regional programs	limited access to national and regional training programs
<b>Institutional and Regulatory Environment</b>					
Service Area	Utility has mandate for 85-100% of the population	Utility has mandate for 70-85% of the population	Utility has mandate for 55-70% of the population	Utility has mandate for 40-55% of the population	Utility has mandate for > 40% of the population
Tariff System	Tariff system well regulated, transparent, and implemented with good balance between financial sustainability for the utility and affordability for the public.	Tariff system well regulated, but only partly implemented, but with reasonable outcomes for financial sustainability for the utility and affordability for the public.	Tariff system well regulated, but not implemented with political interference and poor outcomes for either financial sustainability or affordability.	Tariff system not well regulated and implemented without balance between financial sustainability for the utility and affordability for the public.	No regulated tariff system and poor outcomes for either financial sustainability of affordability.

## Appendix 4: Informal settlements in Suva - Nausori

<b>Total water meter per Settlement</b>			
<b>No.</b>	<b>Settlement</b>	<b>No. of mtr</b>	<b>Population = No. of mtr x 5person per household</b>
1	Gilbertese	26	130
2	Ucuinamono	27	135
3	Wainigasau	32	160
4	Taulunga	22	110
5	Bilo	22	110
6	Waikerekere	46	230
7	Namukailau	45	225
8	Udua	35	175
9	Koroinavono	35	175
10	Wailekutu	70	350
11	Kalekana	207	1035
12	Naivikinikini	42	210
13	Qauia	334	1670
14	Matanisivaro	36	180
15	Matata	125	625
16	Naicobocobo	91	455
17	Wainidinu	63	315
18	Nadonumai	394	1970
19	Wailea	295	1475
20	Veidogo	73	365
21	Nanuku	197	985
22	Muanivatu	53	265
23	Jittu Estate	329	1645
24	Muslim League	181	905
25	Tuitaleva	14	70
26	Tamavua-i-wai	194	970
27	Koio	55	275
28	Marata	71	355
29	Balebuka	36	180
30	Vataleka	92	460
31	Korolailai	68	340
32	Tamavua-i-cake	43	215
33	Cunningham Rd	910	4550
34	Lower Tacirua	420	2100
35	Upper Tacirua	478	2390
36	Lower Sakoca	66	330
37	Rokara	180	900
38	Veikoba	224	1120
39	Khalsa Rd	695	3475
40	Namara	240	1200
41	Savutalele	125	625
42	Upper Sakoca Rd	534	2670
43	Kuluvotu	48	240
44	Kilikali	50	250
45	Nadawa	74	370
46	Veiraisi	56	280
47	Muanikoso	245	1225
48	River Road	285	1425
49	Tovata	203	1015
50	Wakanisila	212	1060
51	Tuirara	164	820
52	Wainibuku	270	1350
53	Delaidogo	83	415
54	Vatuyalewa	32	160
55	Qaranivalu	295	1475
56	Waidamudamu	128	640
57	Vunivivi	104	520
58	Lakena Hill 1	89	445
59	Buiduna	59	295
60	Matadawa	19	95
61	Maumi	16	80
62	Taranaka	41	205
63	Namono	66	330
64	Visama	55	275
65	Nadave	11	55
66	Kaleli	15	75
		<b>9845</b>	<b>49225</b>

## Appendix 5: Estimated Costs for Rural WaSH Program

### WAF Rural WaSH Program Estimated Costs 2022/2023

Slu	Region	Submission	Scheme	Project Description	Cost	Type	Population Benef	Implementation Meth
1	Western	Navinesh Reddy	Rural Water Supply Scheme	Barotu Village	\$ 323.348,97	Construction	265	In-House
2	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Tailevu - Lolomalevu Settlement, Dawasamu	\$ 135.144,67	Construction	122	In-House
3	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Tailevu - Balekinaga Village, Wainibuka	\$ 270.508,43	Construction	134	In-House
4	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Tailevu - Driti Village/Govt Station/Secondary School	\$ 302.391,98	Construction	102	In-House
5	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Naitasiri - Nasaumakia Village	\$ 243.341,00	Construction	111	In-House
6	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Naitasiri - Laselevu Village	\$ 186.419,21	Construction	210	In-House
7	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Naitasiri - Navutu Village	\$ 269.642,23	Construction	187	In-House
8	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Namosi - Rt Simione School	\$ 259.246,00	Construction	199	In-House
9	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Namosi - Dada Government Station	\$ 85.000,00	Construction	80	In-House
10	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Serua - Matadonu Settlement, Namaqumaqua	\$ 201.022,27	Construction	145	In-House
11	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Serua - Waidradra Settlement, Vunaniu	\$ 157.000,00	Construction	164	In-House
12	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Kadavu - Wailevu Village	\$ 118.427,30	Construction	132	In-House
13	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Kadavu - Niudua Village	\$ 149.753,59	Construction	123	In-House
14	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Kadavu - Burelevu Village, Solovala	\$ 145.283,01	Construction	112	In-House
15	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Lomaiviti - Viro Village, Ovalau	\$ 228.466,71	Construction	170	In-House
16	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Lomaiviti - Namatana Settelement, Nairai	\$ 54.210,07	Construction	90	In-House
17	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Lomaiviti - Nukuloa Village & Lele Settlement	\$ 71.404,34	Construction	70	In-House
18	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Lau - Raviravi Village, Matuku	\$ 123.943,72	Construction	120	In-House
19	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Lau - Lomaloma, Vanuabalavu	\$ 135.077,31	Construction	110	In-House
20	Northern	Faizal Ali	Rural Water Supply Scheme	Cakaudrove - Domonisavu District School, Vatuova	\$ 80.298,35	Construction	310	In-House
21	Northern	Faizal Ali	Rural Water Supply Scheme	Cakaudrove - Korolevu/Drano Combine scheme, Korolau	\$ 153.019,41	Construction	510	In-House
22	Northern	Faizal Ali	Rural Water Supply Scheme	Cakaudrove - Laucala Village, Wailevu	\$ 120.431,10	Construction	240	In-House
23	Northern	Faizal Ali	Rural Water Supply Scheme	Cakaudrove - Momici settlement, Vuna	\$ 92.154,20	Construction	70	In-House
					<b>\$ 3.905.533,87</b>		<b>3776</b>	

### WAF Rural WASH Program Estimated Costs 2023/2024

Order	Region	Submission	Scheme	Project Description	Cost	Type	Population Beneficiaries	Implementation Method
1	Western	Navinesh Reddy	Rural Water Supply Scheme	Vatukaceveva Village & School	\$ 145.000,00	Construction	245	In-House
2	Western	Navinesh Reddy	Rural Water Supply Scheme	Bureiwai District School	\$ 277.261,30	Construction	1110	In-House
3	Western	Navinesh Reddy	Rural Water Supply Scheme	Nawairuku Village & Lewativale Primary School	\$ 292.000,00	Construction	700	In-House
4	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Tailevu - Naikawaga Village, Namara	\$ 64.427,89	Construction	98	In-House
5	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Tailevu - Naisausau Village, Namara	\$ 53.447,04	Construction	97	In-House
6	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Tailevu - Natila Village, Bau	\$ 38.409,64	Construction	68	In-House
7	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Naitasiri - Boteinaulu Village	\$ 164.275,00	Construction	140	In-House
8	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Naitasiri - Naseuvou Village	\$ 155.960,85	Construction	235	In-House
9	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Naitasiri - Nuku Village, Nadaravawalu	\$ 150.540,15	Construction	230	In-House
10	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Namosi - Rt Simione School	\$ 259.246,00	Construction	342	In-House
11	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Namosi - Dada Government Station	\$ 85.000,00	Construction	89	In-House
12	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Serua - Matadonu Settlement, Namaqumaqua	\$ 201.022,27	Construction	144	In-House
13	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Serua - Waidradra Settlement, Vunaniu	\$ 157.000,00	Construction	155	In-House
14	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Kadavu - Tawava Village	\$ 150.064,07	Construction	136	In-House
15	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Kadavu - Nacomoto Village	\$ 171.292,59	Construction	123	In-House
16	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Kadavu - Natokalau Village & Korovou Village	\$ 137.697,28	Construction	245	In-House
17	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Lomaiviti - Yavu Village & Mua Village, Batiki	\$ 345.000,00	Construction	298	In-House
18	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Lomaiviti - Levuka-i-Gau Village, Gau	\$ 118.896,99	Construction	240	In-House
19	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Lomaiviti - Lovu Village, Gau	\$ 304.749,63	Construction	132	In-House
20	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Lau - Qalikarua Village, Matuku	\$ 128.882,92	Construction	137	In-House
21	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Lau - Natokalau Village, Matuku	\$ 111.727,08	Construction	133	In-House
22	Northern	Faizal Ali	Rural Water Supply Scheme	Macuata - Bucalevu Combine Scheme, Wailevu	\$ 282.078,21	Construction	588	In-House
23	Northern	Faizal Ali	Rural Water Supply Scheme	Macuata - Nabavatu Village, Dreketi	\$ 148.204,71	Construction	420	In-House
24	Northern	Faizal Ali	Rural Water Supply Scheme	Macuata - Naduri Village, Macuata	\$ 97.126,88	Construction	120	In-House
25	Northern	Faizal Ali	Rural Water Supply Scheme	Macuata - Naividamu Village, Macuata	\$ 104.653,21	Construction	123	In-House
26	Northern	Faizal Ali	Rural Water Supply Scheme	Macuata - Nakanacagi Village, Dreketi	\$ 138.095,58	Construction	210	In-House
27	Northern	Faizal Ali	Rural Water Supply Scheme	Macuata - Qelewara Village, Namuka	\$ 126.231,60	Construction	211	In-House
28	Northern	Faizal Ali	Rural Water Supply Scheme	Macuata - Rewa Estate Combine Scheme, Macuata	\$ 137.696,58	Construction	189	In-House
29	Northern	Faizal Ali	Rural Water Supply Scheme	Macuata - Vucitoka Settlement, Settlement	\$ 23.564,16	Construction	92	In-House
30	Northern	Faizal Ali	Rural Water Supply Scheme	Macuata - Vunivutu Village, Nadogo	\$ 78.271,25	Construction	93	In-House
31	Northern	Faizal Ali	Rural Water Supply Scheme	Macuata - Uluibekana Settlement	\$ 65.471,60	Construction	99	In-House
32	Northern	Faizal Ali	Rural Water Supply Scheme	Macuata - Kubulau Combined Scheme	\$ 300.000,00	Construction	320	In-House
					<b>\$ 5.013.294,48</b>		<b>7562</b>	

## WAF Rural WASH Program Estimated Costs 2024/2025

Item	Region	Submission	Scheme	Project Description	Cost	Type	Population bene	Implementation Meth
1	Western	Navinesh Reddy	Rural Water Supply Scheme	Navola Village & Nasikawa Vision School	\$ 280.000,00	Construction	206	In-House
2	Western	Navinesh Reddy	Rural Water Supply Scheme	Nausori Highland	\$ 350.000,00	Construction	363	In-House
3	Western	Navinesh Reddy	Rural Water Supply Scheme	Volinagerua/Tonuve Village	\$ 306.503,15	Construction	332	In-House
4	Western	Navinesh Reddy	Rural Water Supply Scheme	Uluisila Settlement	\$ 200.000,00	Construction	288	In-House
5	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Tailevu - Nakorolevu Village, Namara	\$ 65.745,87	Construction	90	In-House
6	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Naitasiri - Rewasau Village	\$ 233.926,52	Construction	355	In-House
7	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Naitasiri - Nauluvatu Village	\$ 107.676,48	Construction	100	In-House
8	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Naitasiri - Naivucini Village	\$ 213.174,53	Construction	123	In-House
9	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Namosi - Rt Simione School	\$ 259.246,00	Construction	142	In-House
10	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Namosi - Dada Government Station	\$ 85.000,00	Construction	158	In-House
11	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Serua - Matadonu Settlement, Namaqumaqua	\$ 201.022,27	Construction	198	In-House
12	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Serua - Waidradra Settlement, Vunaniu	\$ 157.000,00	Construction	214	In-House
13	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Kadavu - Nukumalawai Settlement, Nakasaleka	\$ 74.707,64	Construction	135	In-House
14	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Kadavu - Tabuya Village, Nabukelevu	\$ 159.752,75	Construction	271	In-House
15	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Kadavu - Kenia Settlement, Ono	\$ 57.244,38	Construction	98	In-House
16	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Kadavu - Lomanikoro Village, Nakasaleka	\$ 126.576,94	Construction	123	In-House
17	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Lomaiviti - Namokamoka Settlement, Gau	\$ 150.814,80	Construction	127	In-House
18	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Lomaiviti - Lamiti Village, Gau	\$ 314.561,88	Construction	240	In-House
19	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Lomaiviti - Naisogoloa Settlement, Koro	\$ 190.209,00	Construction	210	In-House
20	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Lau - Narocivo Village, Nayau	\$ 179.221,70	Construction	100	In-House
21	Northern	Faizal Ali	Rural Water Supply Scheme	Bua - Banikea-Kavula Infant School Water Scheme, Lekutu	\$ 99.466,89	Construction	98	In-House
22	Northern	Faizal Ali	Rural Water Supply Scheme	Bua - Boroboro Settlement Water Scheme, Lekutu	\$ 39.011,95	Construction	95	In-House
23	Northern	Faizal Ali	Rural Water Supply Scheme	Bua - Nasolo Village, Wainunu	\$ 134.476,28	Construction	133	In-House
24	Northern	Faizal Ali	Rural Water Supply Scheme	Bua - Navakasali Village, Wainunu	\$ 103.073,43	Construction	100	In-House
25	Northern	Faizal Ali	Rural Water Supply Scheme	Bua - Tavulomo Village, Dama	\$ 85.710,40	Construction	122	In-House
26	Northern	Faizal Ali	Rural Water Supply Scheme	Bua - Wairiki Village, Wairiki	\$ 199.081,20	Construction	280	In-House
					<b>\$ 4.373.204,06</b>		<b>4701</b>	

## WAF Rural WaSH Program Estimated Costs 2025/2026

Item	Region	Submission	Scheme	Project Description	Cost	Type	Population Benef	Implementation Meth
1	Western	Navinesh Reddy	Rural Water Supply Scheme	Rural Water Supply Scheme	\$ 3.224.113,42	Construction	3965	In-House
2	Western	Navinesh Reddy	Rural Water Supply Scheme	Savatu District School/Nursing Station/Nagatagata Village,Tikina Savatu	\$ 310.000,00	Construction	269	In-House
3	Western	Navinesh Reddy	Rural Water Supply Scheme	Marou Village	\$ 180.000,00	Construction	86	In-House
4	Western	Navinesh Reddy	Rural Water Supply Scheme	Buyabuya Village	\$ 285.000,00	Construction	111	In-House
5	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Tailevu - Nakorolevu Village	\$ 55.668,72	Construction	123	In-House
6	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Tailevu - Vorovoro Village, Dawasamu, Tailevu	\$ 139.712,89	Construction	124	In-House
7	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Naitasiri - Nasava Village	\$ 149.711,81	Construction	102	In-House
8	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Naitasiri - Narokorokoyawa Village	\$ 148.869,39	Construction	177	In-House
9	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Kadavu - Togoni Settlement, Naceva	\$ 90.084,40	Construction	98	In-House
10	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Kadavu - Nakoronawa Village, Nakasaleka	\$ 125.171,35	Construction	132	In-House
11	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Kadavu - Levuka Village, Nabukelevu	\$ 142.203,45	Construction	133	In-House
12	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Kadavu - Namuana Village, Tavuki	\$ 126.382,72	Construction	170	In-House
13	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Kadavu - Natumua Village, Tavuki	\$ 95.347,46	Construction	95	In-House
14	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Kadavu - Kadavu Koro, Naceva	\$ 123.390,61	Construction	211	In-House
15	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Kadavu - Galoa Village, Tavuki	\$ 105.662,63	Construction	210	In-House
16	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Kadavu - Burelevu I Cake, Nasalia, Tavuki	\$ 136.941,82	Construction	170	In-House
17	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Kadavu - Muaninuku Village, Nabukelevu	\$ 155.957,85	Construction	133	In-House
18	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Kadavu - Matasawalevu Village, Nakasaleka	\$ 150.000,00	Construction	122	In-House
19	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Kadavu - Uciwai Village, Yale	\$ 180.000,00	Construction	120	In-House
20	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Kadavu - Dravuvalu Village, Naceva	\$ 141.380,20	Construction	111	In-House
21	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Kadavu - Ekava Settlement, Soso	\$ 129.920,46	Construction	150	In-House
22	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Kadavu - Nasegai Village	\$ 158.278,90	Construction	140	In-House
23	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Lomaiviti - Batiri Settlement, Koro	\$ 147.988,00	Construction	160	In-House
24	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Lomaiviti - Qarani Village& Navukailagi Dist Sch	\$ 260.061,21	Construction	122	In-House
25	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Lau - Dravuvalu, Totoya	\$ 175.496,95	Construction	130	In-House
26	Central/Eastern	Leigh Chan	Rural Water Supply Scheme	Lau - Makadru, Matuku	\$ 102.699,52	Construction	188	In-House
27	Northern	Faizal Ali	Rural Water Supply Scheme	Cakaudrove - Naboutini Village, Saqani	\$ 90.495,59	Construction	90	In-House
28	Northern	Faizal Ali	Rural Water Supply Scheme	Cakaudrove - Naiviivi Village, Laucala	\$ 157.078,80	Construction	166	In-House
29	Northern	Faizal Ali	Rural Water Supply Scheme	Cakaudrove - Nabua Village/School, Koroalau	\$ 168.184,51	Construction	152	In-House
30	Northern	Faizal Ali	Rural Water Supply Scheme	Cakaudrove - Savuvatu Farming Community	\$ 61.485,12	Construction	180	In-House
31	Northern	Faizal Ali	Rural Water Supply Scheme	Cakaudrove - Vusaratu/Dawa Combine Scheme, Natewa	\$ 149.302,28	Construction	455	In-House
					\$ 7.666.590,06		8595	



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