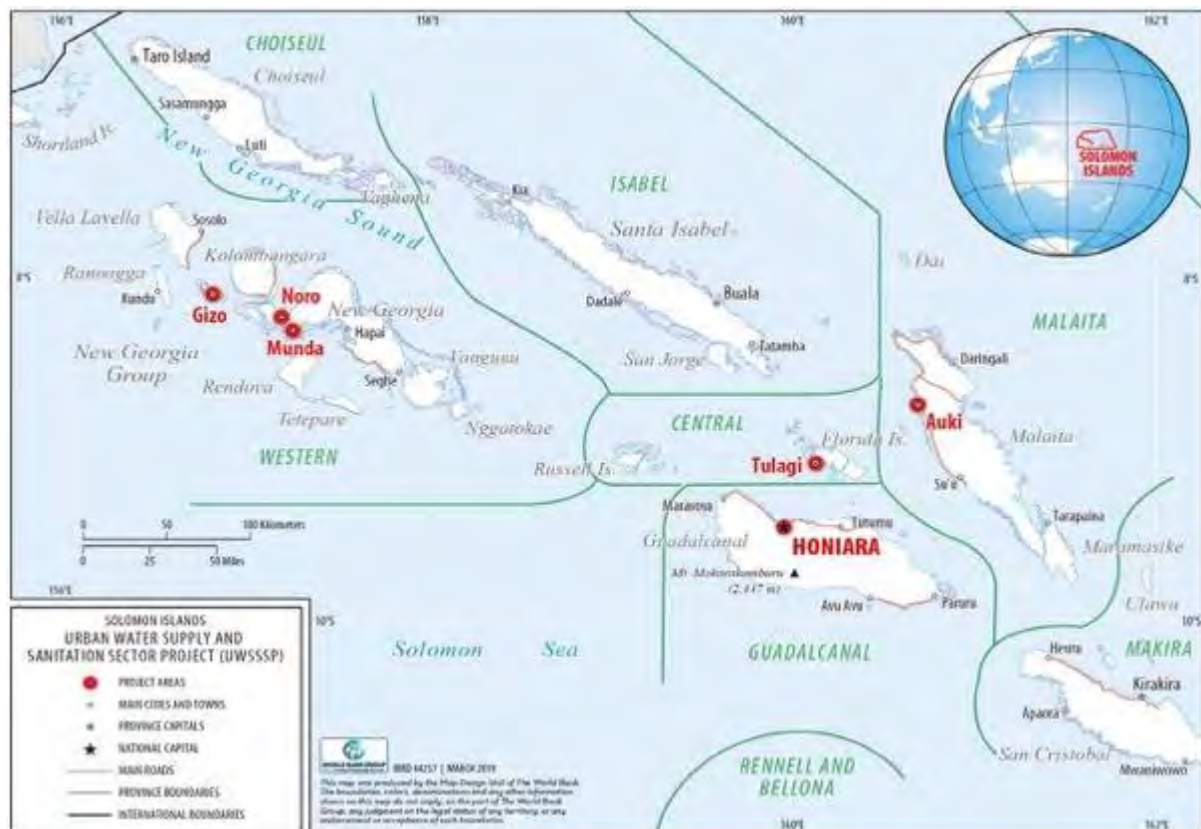


URBAN WATER SUPPLY AND SANITATION SECTOR PROJECT (UWSSSP)

SOLOMON WATER

Semi-Annual Project Monitoring and Evaluation Report July - December 2022



Source: World Bank, 2019 Project Appraisal Document for Urban Water Supply and Sanitation Sector Project

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Final Draft

ABBREVIATIONS

ADB	Asian Development Bank
CBSI	Central Bank of Solomon Islands
CESMPs	Construction, Environmental Social Management Plans
EIS	Environmental Impact Statement
ERP	Enterprise Resource Planning
EU	European Union
FFPA	Financing Framework Partnership Agreement
GDP	Gross Domestic Product
GEF	Global Environment Fund
GHA	Greater Honiara Area
GRM	Grievance Redress Mechanism
IA	Implementing Agency (Solomon Water)
IEE	Initial Environmental Examination
IDA	International Development Association
M&E	Monitoring and Evaluation
MTS	Medium Term Strategy
NCDs	Non Communicable Diseases
NDS	National Development Strategy
NGO	Non-Government Organisation
NRW	Non-Revenue Water
ODA	Overseas Development Assistance
OECD DAC	Organisation for Economic Cooperation and Development Development Assistance Committee
PDO	Project Development Outcomes
PEP	Pacific Engineering Projects
PER	Performance Evaluation Report
PES	Payment for Ecosystem Services
PICs	Pacific Island Countries
PMEF	Project Monitoring and Evaluation Framework
PMU	Project Management Unit within Solomon Water
PSC	Project Steering Committee
PWWA	Pacific Water and Wastewater Association
RWASH	Rural Water Sanitation and Hygiene
SBD	Solomon Islands Dollar
SCADA	Supervisory Control and Data Acquisition
SIWA	Solomon Islands Water Authority

SMEC	Snowy Mountains Engineering Corporation Holdings Limited
SW	Solomon Water
USD	United States Dollars
UWSSSP	Urban Water Supply and Sanitation Sector Project
WASH	Water, Sanitation and Hygiene
WATSAN	Solomon Islands National Water and Sanitation Policy

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EXECUTIVE SUMMARY

Investing in water and sanitation remains essential for eradicating poverty, addressing the negative impacts of climate change, and building more inclusive and equitable Solomon Islands. The Solomon Islands Urban Water Supply and Sanitation Sector Project (UWSSSP) will improve access to safe water and improve sanitation in urban and peri-urban areas of Solomon Islands. Components of the UWSSSP also focus on improving hygiene and sanitation by training and awareness and institutional strengthening of the implementing agency (IA), Solomon Water (SW). The urban areas included are Greater Honiara Area (GHA), Auki, Tulagi, Munda, Noro, and Gizo.

This is the forth semi-annual project M&E report covering (July to December 2022) providing information necessary to update ADB's and WB's project performance, progress of outputs, and achievability of project impact. As well as describing the activities of past 6 months, the semi-annual report describes how UWSSSP has evolved since its inception and highlights some of the key results.

The project and all its components remain highly relevant to Solomon Islands and its alignment with government priorities. The project is fully aligned with and supportive of government policies and priorities as defined in the new RWASH Strategic Plan (2021-2025). UWSSSP will contribute to the implementation of the WATSAN policy action plan and the RWASH Strategic Plan (2021-2025). WASH in general, and water supply, are given high priority in the National Development Strategy 2016-2033, within Solomon Islands' mid-term and long-term development strategy. UWSSSP is consistent with other Government initiatives and strategies, including the Draft Rural Water, Sanitation and Hygiene (RWASH) Policy, National Adaptation Plan of Action, 2009, Draft Medium Term Development Plan, 2013, Solomon Water (SIWA) Development Plan 2013-2015, National Disaster Risk Management Plan 2011 and the water and sanitation sector component of the Draft National Infrastructure Investment Plan 2013 (NIIP).

Overall the Outcome level indicators show some promising results and progress since 2019. In terms of increased access and quality of water supplied and sanitation services in selected service areas of SW, the project shows some early results with total number of people serviced by SW increase by 58% nationally when compared to 2019 baseline. This increase is driven by new connections from 2020 to 2022. Similarly in the provinces, the percentage increase in the number of population serviced by SW is owing to new connections. The number of females with access to improved water sources through piped water connections has also increased- 58% increase in female population served compared to 2019.

National compliance to sample tests meeting Water Safety Plan parameters has increased significantly in 2022 due to 100% Chlorination in all SW area operations – mainly driven by Honiara and Auki chlorination compliance. The indicator for climate change and disaster resiliency in construction design shows partial progress of 5-10%. Reducing non-revenue water and improving billing and collections are two of the most important efficiency improvements that SW can address. NRW as well as billing and collections of tariffs can have catalytic impacts on cost recovery and SW's sustainability. In terms of operating cost efficiency, the operating revenues covered 111 percent of operation and maintenance costs in 2019, down from 111 percent in 2019 to 101 in 2022. SW's operating cost coverage ratio equal to or less than 1 shows SW is breaking even.

The achievements of the project in terms of delivering the planned outputs and results for each of the indicators and the project effectiveness has been satisfactory. The efficiency with which the project was implemented was satisfactory to high in most aspects. Planning, budgeting, monitoring and management of financial, human and other resources were generally good and all appropriate management tools were used. The quality of documents produced by the project and SW with project support or input is also very good, notably the WASH Guidelines and various training/awareness materials. They are all relevant and appropriate to local context and to the target audience, comprehensive, gender and human rights sensitive and professionally laid out. Social inclusion and gender that ensures equal access to water services is an integral component under UWSSSP for all WASH activities.

With UWSSSP support, substantive progress has been realized in increasing capacity and impact in efforts to address institutional strengthening of SW. Through the activities under Output 5, the project supported analytical work in sustaining ground water resource management and addressing groundwater contamination.

Some of the major risks to the project include cost escalation, EU grant effectiveness, delayed construction work, and project financing gap. If these risks are not closely monitored, it will have significant adverse effects on the achievement of some of the outputs and ultimately will lead to delay in the achievability of the UWSSSP outcomes. In addition, the impact and sustainability of the project objectives under UWSSSP is dependent on the understanding the key actors and local power dynamics so that the state, donors and landowners collaborate together to implement the project activities. For UWSSSP to deliver project outcomes, it is important to understand and appreciate local-level politics and engage with appropriate ministries and technical experts as collaborators.

1 PROJECT BACKGROUND AND IMPLEMENTATION OF THE PMEF

1.1 Project Summary

The Solomon Islands Urban Water Supply and Sanitation Sector Project (UWSSSP) will improve access to safe water and improve sanitation in urban and peri-urban areas of Solomon Islands. Components of the UWSSSP also focus on improving hygiene and sanitation by training and awareness and institutional strengthening of the implementing agency (IA), Solomon Water (SW). The urban areas included are Greater Honiara Area (GHA), Auki, Tulagi, Munda, Noro, and Gizo.

The project is aligned with the following impact: access to safe water and improved sanitation in urban areas increased. The project will have the following outcome: improved efficiency, climate change and disaster resiliency, and sustainability of safe water and sanitation in GHA and the other five urban areas. The additional financing will enhance the project's impact and outcome. The overall project outputs include:

- Output 1 – Secure and safe urban water supplies.
- Output 2 – Effective, efficient and safe urban sanitation services.
- Output 3 – Enhanced awareness of good hygiene and water issues and sustained improved hygiene behaviour.
- Output 4 – Ensure SW is financially and technically sustainable.
- Output 5 (new output): Management of Honiara's drinking water source area strengthened to build resilience to climate change. Output 5 will provide physical and non- physical investments to strengthen the resilience of catchments that are the sources of water for the GHA water supply to climate change and to mitigate the impacts of logging and other deforestation practices.¹

1.2 Project Performance Monitoring

Project effectiveness for grants and loans from ADB and WB was 23 April 2020 and thereafter the PMU established a project performance, monitoring and evaluation framework. ADB, WB and SW agreed on a set of indicators for monitoring and evaluating to what extent the project is achieving its goals and purposes. The PMEF and the Monitoring and Evaluation (M&E) Plan/Framework has gone through several rounds of peer review with inputs from the PMU. The M&E Plan itself has been

¹ Further details on Output 5 are noted in Solomon Islands: Urban Water Supply and Sanitation Sector Project Additional Financing - GEF Project Administration Manual, September 2021

developed through a consultative/participatory process with Solomon Water (SW) stakeholders as well as the international specialists (WASH, Communications, Construction and Design) to reinforce ownership of the project with relevant stakeholders.

The final PMEF and M&E Framework was approved by the development partners in mid-February 2021. Upon approval of the PMEF by the development partners, a capacity building approach to M&E was undertaken with the International M&E Specialist providing remote support to SW staff and the Project Management Unit (PMU) team so that they are well-equipped to collect meaningful data that will feed into the PMEF. The PMU continues to monitor and evaluate the indicators according to the agreed framework on a six-monthly basis to determine the efficiency and effectiveness of the project. M&E Plan for Output 5 has now been developed and will be reported to inform Semi-Annual Project M&E reports going forward, including this report.

2. SOLOMON ISLANDS MACRO ENVIRONMENT

2.1 Economic outlook

Solomon Islands is currently facing two key development challenges relating to health and the economy. The Solomon Islands has a significant subsistence economy. People in the rural and outer islands rely predominantly on subsistence farming, fishing, and other similar activities to support their daily livelihood. Since rural and maritime communities often face transportation and logistics challenges, there are only a few development projects related to water supplies and sanitation in these communities.

Policy reprioritization is presently critical to mitigate the economic downturn. Domestic economic activities remained broadly weak across all sectors since the COVID-19 pandemic took hold two years ago. Central Bank of Solomon Islands (CBSI) estimated that the Solomon Islands economy contracted by -0.6% in 2021, reversing the positive 0.4% recovery forecasted earlier in September 2021.² This downgrade mainly reflected the adverse economic impact of the November riot which pushed the economy back into recession at the close of 2021.

Growth for 2022 is projected to further decline by -7.3%, owing to sluggish economic activities due to ongoing control measures to mitigate the impact of the pandemic.³ Underpinning the contraction is the adverse impact of the community transmission with associated lockdowns and daily curfews. Over the medium term (2024-2025), the recession is expected to bottom out and the economy is projected to rebound by an average growth rate of 1.5%, as vaccination rate increases, and

² Accessed on 20/02/23 < <https://www.cbsi.com.sb/macroeconomic-update-for-the-si-economy/> >

³ Accessed on 20/02/23 < <https://www.cbsi.com.sb/macroeconomic-update-for-the-si-economy/> >

international border restriction eases. Inflation is projected to register at the upper band of 3.5% by end of 2022, on account of more pronounced supply constraints which outweighs the current weak demand in the economy.⁴

Against the backdrop of expected decline in economic activities in 2022/2023, fiscal position is projected to remain in deficit amid expected lower domestic revenue collection and elevated spending commitments. With higher spending pressures, the fiscal deficit is projected to widen by 6% of GDP in 2022, or 9% of GDP with a fully-fledged policy response.⁵ World Bank report highlights the need for Solomon Islands to implement fiscal reforms such as tax system reviews and more efficient public spending or its debt levels may become unsustainable.⁶ The report, *Solomon Islands Public Expenditure Review: Fiscal Reform and the Path to Debt Sustainability*, suggests that public debt will reach the Government threshold of 35 percent of GDP as early as 2026.⁷ However, if reforms are prioritized, modelling undertaken in the report suggests public debt will stabilize at about 27 percent of GDP, leaving sufficient funds for Government to address key development issues while building a stronger and more resilient economy.

However, infrastructure construction in the country is putting Solomon Islands on a bold new growth trajectory. This includes externally funded roads, airport upgrades, sporting facilities for the 2023 Pacific Games, renewable energy, and urban water supply and sanitation projects. The Public Expenditure Review highlights the potential for growth and revenue collection and generation through reform of the Solomon Island tax system and the need to bring about significant improvements to the governance and management of the mining industry for the sector to become sustainable as well as improving the efficiency of government spending.⁸ Otherwise Solomon Islands may be at risk of falling into debt distress that could be damaging for the economy and the country in terms of development outcomes for health, well-being, education and livelihoods of Solomon Islanders.

After 3 years of decline, economic conditions are expected to drive growth in the medium term due to large infrastructure projects, investments related to the 2023 Pacific Games, and the replacement of lost capital during the civil unrest. Furthermore, the projected moderation in logging is expected

⁴ Accessed on 20/02/23 < <https://www.cbsi.com.sb/macroeconomic-update-for-the-si-economy/>>

⁵ Accessed on 20/02/23 < <https://www.cbsi.com.sb/macroeconomic-update-for-the-si-economy/>>

⁶ Accessed on 20/02/23< <https://www.worldbank.org/en/news/press-release/2022/10/26/new-sources-of-growth-and-more-efficient-public-sector-essential-for-solomon-islands-economy-world-bank>>

⁷ Accessed on 20/02/23 < <https://openknowledge.worldbank.org/entities/publication/4e0b8a14-9f2b-5b6e-a44b-f5d137952b73>>

⁸ Accessed on 20/02/23 < <https://openknowledge.worldbank.org/entities/publication/4e0b8a14-9f2b-5b6e-a44b-f5d137952b73>>

to be off- set by increased mining activity, including the reopening of the Gold Ridge mine, and a return of business tourism.⁹ The current account deficit is expected to remain elevated over the medium-term, averaging 11.5 percent of GDP over the period 2022-2024, as the recovery in primary exports is more than offset by higher imports for infrastructure projects and civil unrest reconstruction (see Table 1 below). With pronounced uncertainty around the economic outlook, continued debt sustainability will need to be anchored in a prudent fiscal policy along with a financing strategy that prioritises grants and concessional borrowing.

Furthermore, a global economic slowdown amid geopolitical tensions and a tightening of monetary policy in advanced economies pose further risks to the outlook. Solomon Islands is also prone to natural disasters, which are likely to impose additional long-term fiscal costs on the Government and pose a risk to the medium-term outlook. On the upside, a sooner-than-anticipated end to the health crisis, timely execution of major infrastructure projects, and a successful implementation of the tax reform agenda could boost the economic growth and contribute to fiscal consolidation.¹⁰

Table 1: Solomon Islands Macroeconomic Outlook Indicators (Annual % Change)¹¹

	2018	2019	2020 e	2021 f	2022 f	2023 f
Real GDP growth, at constant market prices	3.9	1.2	-5.0	2.0	4.5	4.3
Inflation (Consumer Price Index end of period)	3.9	2.8	3.0	3.5	3.4	3.8
Balance of Payments						
Current account balance (% of GDP)	-3.0	-9.6	-4.0	-16.4	-13.3	-11.9
Fiscal Balance (% of GDP)	1.4	-1.2	-6.0	-3.0	-3.6	-3.7
External Debt (% of GDP)	8.2	10.0	13.5	15.5	17.6	19.9

Source: World Bank and International Monetary Fund staff estimates.
Notes: e = estimate, f = forecast.

2.2 Urbanisation and climate related challenges

Poverty, a rapidly growing urban population, and vulnerability to disasters challenge the water and sewer network of Solomon Islands. In the small island developing island state like Solomon Islands, livelihoods are deeply linked to the natural environment. Levels of unplanned urbanization are high, and sanitation and water infrastructure are rudimentary. Like other Pacific Island Countries, Solomon Island is uniquely vulnerable to resource scarcity and suffer the impacts of extreme weather disproportionately.

⁹ Accessed on 20/02/23 < <https://thedocs.worldbank.org/en/doc/4bb692e4643291f039801600ea9be43d-0350082021/original/mpo-slb.pdf>>

¹⁰ Accessed on 20/02/23 < <https://thedocs.worldbank.org/en/doc/4bb692e4643291f039801600ea9be43d-0350082021/original/mpo-slb.pdf>>

¹¹ Accessed on 20/02/23 < <https://thedocs.worldbank.org/en/doc/4bb692e4643291f039801600ea9be43d-0350082021/original/mpo-slb.pdf>>

The Solomon Islands is a country of villages, with Honiara being the fastest growing urban centre in the country. Projections indicate that the country's urban population may grow to 430,000 by 2050 from its current population of 724,273 in 2022, a 2.32% increase from 2021. This rapid population growth will hinder access to urban services. About a third of the nation's urban population lives in rapidly expanding informal settlements. They get their drinking water from public water supply schemes, rainwater tanks, public wells, springs, streams, and other sources, such as bottled water.

Given the proportion of rural to urban population in the country, it is imperative that although Honiara faces specific WASH issues, more must be done in rural communities where most people live. Infectious diseases and non-communicable diseases (NCDs) are prominent throughout The Solomon Islands. The biggest challenge for the Solomon Islands is to develop water supply infrastructure that would pave the way for the introduction and use of appropriate sanitation facilities. In the Greater Honiara Area (GHA), the country's biggest urban hub, about 41% do not have access to the city's public water supply system, and about 24% do not have access to basic sanitation.¹² In other urban areas, access to water and sanitation is even lower. Urban population growth has led to decreasing access to basic urban services such as water supply, sanitation, solid waste collection and drainage. As a result, more people fall prey to waterborne diseases in Solomon Islands than in most Pacific Islands.

The Solomon Islands are directly affected by the effects of climate change. In recent years, the change in the form of sea-level rise and extreme weather events continuously affects the Solomon Islands. Against this backdrop, Solomon Island's water sources are unsustainable and threatened by disasters. The country's climate is expected to be characterized by intense rainfall and extreme droughts by 2050. Climate change is degrading and depleting water resources. Rising sea levels threaten coastlines and cause salinization of groundwater - putting scarce freshwater resources under stress. In small atoll countries like Solomon Islands, centralized water systems are scarce, and most people still rely on unsafe water sources such as rainwater and unprotected wells. Anthropogenic land-based activities and wastewater pollution have further jeopardized water quality.

These climate change impacts will be worsened by three existing problems: a scarcity of freshwater sources, a lack of sanitation infrastructure, and insufficient, aging water systems. Regular climate related catastrophes disrupt the country's water supply, especially in urban areas. Estimates show that the country loses about \$20 million every year due to damages incurred by cyclones and

¹² Accessed on 20/02/23 <<https://www.adb.org/multimedia/partnership-report2021/stories/turning-on-the-tap-in-solomon-islands/>>

earthquakes.¹³ These losses may increase as more extreme weather events will likely batter the country due to climate change. In addition, water governance is often complicated by traditional social and political structures in Solomon Islands.

The above challenges, including climate change, water scarcity, population growth, migrations, rapid urbanisation, and recovery from the COVID-19 pandemic— threaten the provision of high-quality and sustainable services, jeopardizing the possibility of providing access to quality water and sanitation for all in Solomon Islands. Well-performing water and sanitation utilities are key to providing quality services, but they require a new, strategic management approach to create efficient and sustainable strategic business models that ensure continuity of operation and encourage continuous improvement. Adequate and well-maintained water infrastructure is a necessary condition for economic growth and poverty reduction. New systems must be built for growing and urbanising population in Solomon Islands, changing consumption and income patterns, and food and energy security demands. At the same time, deteriorating structures require rehabilitation just to maintain current levels of service.

The budget challenges noted above diminish the capacity of Solomon Islands to undertake significant infrastructure works without Overseas Development Aid (ODA). It also means that funding repairs and maintenance of facilities are challenging and impossible at worst, which has relevance when considering Solomon Island's Water Resource Management capacity. As noted earlier, population growth and increasing urbanisation will continue to place even more stress on water resources, and the need to ensure water security is fundamental to the future of Solomon Islands. According to the ADB water security index based on five dimensions (see Table 2 below)¹⁴, Solomon Islands scored within the Engaged range like other nine PICs, which means:¹⁵

- A significant majority of rural and urban households have access to basic water supply but less sanitation.
- Economic water security is low.
- Environmental governance is moderate, with severe pressures on aquatic ecosystem.
- Progress in achieving disaster risk security is low.

¹³ Accessed on 20/02/23 <<https://www.adb.org/multimedia/partnership-report2021/stories/turning-on-the-tap-in-solomon-islands/>>

¹⁴ Marc Wilson, Gordon Nanau, Milika Sobey & Semi Lotawa (n.d) Political economy of Water Management and Community Perceptions in Pacific Island Countries, The Australian Water Partnership. Accessed on 15/03/23 <<https://waterpartnership.org.au/wp-content/uploads/2022/09/Political-Economy-of-Water-Resources-Management-Final-1.pdf>>

¹⁵ Ibid.

As per the ADB water security score in Table 2, water security, climate change and natural disasters needs to be further pursued within national government policy opportunities exist to formally align Solomon Island's water Resource Management policies that source significant adaptation funding to progress national water and sanitation management.

Table 2: Pacific Island Countries ADB Water Security Scores¹⁶

Country	Rural Household	Economic	Urban	Environment	Water-Related Disaster	Total	PIC Rank	NWS Stage
Palau	19	9.7	15.3	12.1	16.9	73	1	Capable
Cook Islands	18	9	10.6	18.8	16	72.5	2	Capable
Samoa	14	10.3	12.6	13.8	12	62.8	3	Capable
Tonga	16	8.8	10.3	15.8	11.1	61.5	4	Capable
Niue	15	4	10.3	13.3	18.4	61	5	Capable
Fiji	12	13.6	9.1	12.5	12.3	59.5	6	Engaged
Nauru	na	7	7.1	17.6	15.7	58.6	7	Engaged
Tuvalu	14	6	10.6	17.6	4.8	53	8	Engaged
Vanuatu	8	9.8	7.9	13	11.2	49.9	9	Engaged
Solomon Islands	7	14	7.9	9.5	10.5	49.3	10	Engaged
Marshall Islands	9	7	9.1	15.1	8.6	48.9	11	Engaged
Kiribati	7	11.3	5.9	16.2	7.9	48.2	12	Engaged
PNG	4	8.8	5.6	12.5	12	42.8	13	Engaged
FSM	11	6	4.7	13	7.4	42	14	Engaged

Score Key

NWS Score	96 and above	78-96	60-78	42-60	0-42
NWS Stag	Model	Effective	Capable	Engaged	Nascent

To cope with these challenges, it is hoped that the UWSSSP project will provide climate-resilient water supply and improved sanitation in the GHA and provincial towns. UWSSSP provides knowledge and technical expertise to support utility performance improvement efforts of SW. The goal of the project is to create future-focused utilities that operate in an efficient, resilient, innovative, and sustainable manner, and deliver reliable, safe, inclusive, transparent, and responsive water and sanitation services for Solomon Islanders. In addition, the project will help conserve water, to protect communities and provide better access to water and sanitation services that creates health, social and environmental benefits for those living in informal communities through improved menstrual hygiene awareness, and through greenhouse gas reduction.¹⁷ The ADB water security score noted above implies that water security, climate change and natural disasters needs to be further pursued within national government policy opportunities to formally align Solomon Island's Water Resource

¹⁶ Marc Wilson, Gordon Nanau, Milika Sobey & Semi Lotawa (2022) Political economy of Water Management and Community Perceptions in Pacific Island Countries, The Australian Water Partnership. Accessed on 15/03/23 <<https://waterpartnership.org.au/wp-content/uploads/2022/09/Political-Economy-of-Water-Resources-Management-Final-1.pdf>>

¹⁷ Accessed on 20/02/23 <<https://www.adb.org/multimedia/partnership-report2021/stories/turning-on-the-tap-in-solomon-islands/>>

Management policies – that will source significant adaptation funding to progress national water and sanitation management.

3. ACHIEVABILITY OF PROJECT OUTCOMES AND IMPACT

3.1 Achievement of Project Development Outcomes (PDOs)

As per the UWSSSP M&E framework and the Project Administration Document results framework, UWSSSP will contribute to the following project development outcome/objective:

- *To increase access and quality of water supply and quality of sanitation services in selected service areas of Solomon Water, and to improve the operational performance of Solomon Water.*

The PDO level indicators to measure the achievement of the PDO is noted in Table 3 below.

Table 3: PDO Level Indicators

(i) Efficiency (increased access and quality of water supply and sanitation services in selected service areas of SW)	(i) People provided with access to improved water sources through piped house water connections (Number) NB: some connections may be communal rather than individual house connections, esp. in informal settlement areas
	(ii) People provided with access to improved water sources through piped water connections - Females (Number)
	(iii) Samples tests meeting agreed Water Safety Plan parameters
	(iv) All sewerage outfalls are metered, SW system monitors ingress and infiltration
	(v) Increase in the share of women and girls who feel safer from gender-based violence during water collection or using sanitation facility as a result of the SW UWSSSP project (percentage)
(ii) Climate change and disaster resiliency in the design and construction techniques that withstand harsh climate conditions.	(vi) Design considers climate change impacts for example: sea level rise, intensification of rain fall events where appropriate design identifies and includes mitigations that considers nature-based solutions where available.
(iii) Sustainability of safe water and improved sanitation in GHA and other provincial towns improved	(viii) Volume of water unaccounted for (Cubic meters/year)
	(x) Operating cost coverage (Number)

The following paragraphs report on the current progress against each of the PDO indicators using the outcome score card. In terms of increased access and quality of water supplied and sanitation services in selected service areas of SW, the project shows some early results with total number of people serviced by SW increase by 58% nationally when compared to 2019 baseline. This increase is driven by new connections from 2020 to 2022. Similarly in the provinces, the percentage increase in the number of population serviced by SW is owing to new connections. The number of females with access to improved water sources through piped water connections has also increased- 58% increase in female population served compared to 2019 based on 2019 National census data for average female per household. Across the provinces currently served by SW shows a pretty consistent increase in the female

population with increased access to water connections when compared to 2019 baseline numbers. The overall increase in the number of females with improved water connections at national level is driven by increased number of household piped water connections in Honiara since 2019.

National compliance to sample tests meeting Water Safety Plan parameters has increased significantly in 2022 due to 100% Chlorination in all SW area operations – mainly driven by Honiara and Auki chlorination compliance. Similarly, for E-coli compliance across all SW areas has increased due to 100% compliance in Auki in 2020 and Tulagi in 2021. Honiara and Noro has exceeded the Target compliance of >98% in 2022. SW currently does not measure metered sewerage outfalls with ingress and infiltration monitoring. But SW's billing data currently collects percentage of total water billing for each customer who are connected to SW waste water system. The billing data for waste water system shows a decline from 512,780m³/yr. to 477,014 m³/yr. The increase in in the share of women and girls feeling safer during water collection and using sanitation services as a result of the project is yet to be realised.

1. Efficiency (increased access and quality of water supply and sanitation services in selected service areas of SW)

Indicator	Indicator Definition	Baseline (2019)	Current Indicator Value (2022)	Rating	Description of Progress - commentary on data (un)availability
(i) People provided with access to improved water sources through piped house water connections (Number) - by GHA, and provinces	This indicator measures the cumulative number of people who benefited from improved water supply services through piped house water connections that have been constructed under the project.	National Baseline 2019: 75,733	120,033		Nationally, total number of people serviced by Solomon Water increased by 58% compared to 2019, driven by increased new connections in 2020, 2021 and 2022. The total population served was calculated using 2019 national census data - 7 people per Household(H/H) for Honiara, 5.8 people per H/H for Noro, 5.2 people per H/H for Auki and 5.1 people per H/H for Tulagi
		Honiara - Baseline 2019:68,460	111,678		63% increase in population serviced by Solomon Water compared to 2019 driven by aggressive new connection and pipe laying programs for Honiara.
		Noro-Baseline 2019: 3068	3,555		15% increase of population serviced by Solomon Water compared to 2019 and all driven by new connections
		Auki - Base Line 2019: 3032	3,494		15% increase of population serviced by Solomon Water compared to 2019 and all driven by new connections
		Tulagi Base Line :2019:1173	1,306		11% increase of population serviced by Solomon Water compared to 2019 and all driven by new connections
(ii) People provided with access to improved water sources through piped water connections - Females (Number)	This indicator measures the cumulative number of females who benefited from improved water supply services through piped house connections created under the project. NB: Calculation of measure is New connections x population split x average persons per household.	National Baseline 2019: 35,842	56,780		58% increase in the female population served compared to 2019. This population figure has been calculated using the 2019 national census data for average female per household.
		Honiara - Baseline 2019:32,341	52,757		63% increase in the female population served compared to 2019. This population figure has been calculated using the 2019 national census data for average female per household.
		Noro-Baseline 2019: 1,510	1,750		16% increase in the female population served compared to 2019. This population figure has been calculated using the 2019 national census data for average female per household.
		Auki - Base Line 2019: 1,435	1,656		15% increase in the female population served compared to 2019. This population figure has been calculated using the 2019 national census data for average female per household.
		Tulagi Base Line :2019: 556	620		15% increase in the female population served compared to 2019. This population figure has been calculated using the 2019 national census data for average female per household.
(iii) Samples tests meeting agreed Water Safety Plan parameters	Water samples from SW's safe water plan that comply with WHO guidelines on potable water quality standards that Solomon Islands has adopted.	Baseline: 95% or higher (SW may already be meeting this baseline target in terms of compliance). National (2019 baseline): FCR-79.36%; Turbidity- 78.25%; Total Coliform- 89.31%; E.coli- 95.18%	National (2022 values) FCR-88.30%; Turbidity- 90.10%; Total Coliform- 93.10%; E.coli- 98.10%		The National compliance has increased greatly in 2022 due to 100% Chlorination in all SW areas of operations and this is mainly driven by Honiara & Auki. There was a general increase in Total coliform compliance across all SW area operations. This was mainly from 100% Chlorination in Auki in 2020 and in Tulagi in 2021. There was a general increase in the E. coli compliance across all SW Area of Operations. This was mainly from 100% Chlorination in Auki in 2020 and in Tulagi in 2021. Honiara and Noro had exceeded the Target compliance of >98%.
(iv) All sewerage outfalls are metered, SW system monitors ingress and infiltration	All outfalls are metered at the outlet, Peaking factor (ratio of average dry weather flow to wet weather flows)	Baseline: 512,780 m3/yr	477,014 m3/yr		No actual measurement of waste water is implemented by SW. The figures provided are from billing data which derived using formulae that uses a percentage of the total water billing for each customer who are connected to Solomon Water Waste Water System.
(v) Increase in the share of women and girls who feel safer from gender-based violence during water collection or using sanitation facility as a result of the SW UWSSSP project (percentage)	This indicator measures the cumulative increase (in percentage point) in the share of surveyed women and girls who declare feeling safer from gender based violence during water collection and using sanitation facility than before the improvement of water supply and/or sanitation services due to the project.	Baseline 2019: 0	WASH related outcome - not yet achieved.		This indicator is yet to be realised noting that end of project survey has not been conducted yet.
(vi) Design considers climate change impacts for example: sea level rise, intensification of rain fall events where appropriate design identifies and includes mitigations that considers nature based solutions where available.	Basis of design and detailed reports include section on climate change	Baseline 2019: 0	Partial progress of 5-10% complete because the construction designs are not yet complete.		Implementation of environment and social safeguards for UWSSSP project continues to comply with both the country environmental safeguards system and ADB/WB policies and instruments. During Q2&Q3 2022, there has been ongoing review and updating of Initial Environmental Examination (IEE) and Public Environmental Reports (PERs) required for the UWSSSP projects. Although there were no environmental monitoring during this period as construction activity has not yet started.

2. Climate change and disaster resiliency in the design and construction techniques that withstand harsh climate conditions.

Indicator	Indicator Definition	Baseline (2019)	Current Indicator Value (2022)	Rating	Description of Progress - commentary on data (un)availability
(vi) Design considers climate change impacts for example: sea level rise, intensification of rain fall events where appropriate design identifies and includes mitigations that considers nature based solutions where available.	Basis of design and detailed reports include section on climate change	Baseline 2019: 0	Partial progress of 5-10% complete because the construction designs are not 100% complete.		Implementation of environment and social safeguards for UWSSSP project continues to comply with both the country environmental safeguards system and ADB/WB policies and instruments. During Q2&Q3 2022, there has been ongoing review and updating of Initial Environmental Examination (IEE) and Public Environmental Reports (PERs) required for the UWSSSP projects. Although there were no environmental monitoring during this period as construction activity has not yet started.

The indicator for climate change and disaster resiliency in construction design shows partial progress of 5-10% because the construction design documents have not been approved due to ongoing review and updating of IEE and PERs. The construction activity has not yet started because contractor Construction Environmental and Social Management Plans (CSEMP) does not meet acceptable compliance requirements for SW and the project partners.

3. Sustainability of safe water and improved sanitation in GHA and other provincial towns improved

Indicator	Indicator Definition	Baseline (2019)	Current Indicator Value (2022)	Rating	Description of Progress (data collated through Key Informant Interviews and Focus Group Discussions)
(viii) Volume of water unaccounted for (Cubic meters/year)	Difference between billed and produced water volumes	National Baseline 2019 : 7,728,441 m3/yr	7,631,286 m3/yr		97,155 m3/yr was reduced for NRW in 2022 compared to 2019 baseline . The current NRW percentage is tracking at 58 % in 2022 but in 2021 we are tracking at 54%.
		Honiara Baseline 2019:6923436 m3/yr	6,776,604 m3/yr		146,831 m3/yr was reduced for NRW in Honiara and Current NRW in Honiara is tracking at 59.8% in 2022, in 2021 were tracking at 54%. In 2022 a total of 5000 leakages were repaired in 2022.
		Noro-Baseline 2019: 373,091 m3/yr	498,596 m3/yr		there is an increase of NRW volume for Noro by 125,505 m3/yr and NRW is tracking at 55% in 2022. Currently works are under way to reduce the constant increase as the system received direct pumping into the network.
		Auki - Base Line 2019: 308,497 m3/yr	270,968 m3/yr		there was a reduction of 37,525m3/yr of NRW in Auki compared to 2019, the current NRW % is tracking at 56% compared to 60% in 2019 . In Auki there was an 8.2km network replacement and two storage tanks introduce for Pressure management.
		Tulagi Base Line 2019: 123,418 m3/yr	85,118 m3/yr		there was a reduction of NRW volume of 38,300m3/yr in 2022. Currently NRW is tracking at 67% compared to 77% in 2019. NRW diagnostic was conducted in 2022 and leakage detection also done with 56 leaks been identified and fixed
(vi) Operating cost coverage (Number)	Total annual operational revenues (generated by water sales) / total annual operating costs (including depreciation)	Baseline: 1.11	1.01		The longterm financial sustainability of SW and its ability to meet operations and maintenance and capital costs depends on recovering costs from users and/or receiving sufficient donor funds. In 2019, SW's operating revenues covered 111 percent of operation and maintenance costs and in 2022 its down to 101 percent (breaking even).

The sustainability of safe water and improved sanitation in GHA and other provincial towns is firstly measured against volume of non-revenue water. As noted in the outcome scorecard, national level volume of water for NRW in 2022 reduced since 2019 baseline. The current NRW percentage is 58%. This reduction in NRW is largely driven by Honiara leak repairs and 8.2km network replacement and introduction of two storage tanks for pressure management in Auki. There's an increase in NRW for Noro due to constant increase in the network caused by direct pumping. Tulagi shows a reduction in NRW but the percentage of NRW is still quite higher than GHA and other provincial towns.

SW resources and UWSSSP investments would go considerably further if inefficiencies in water provision owing to water losses could be addressed. Reducing non-revenue water and improving billing and collections are two of the most important efficiency improvements that SW can address. Mechanisms to rehabilitate the existing infrastructure or to expand capital outlays should be conducted as part of a long- term improvement plan for SW to ensure the sustainable delivery of service.

Non-revenue water is one of the largest sources of inefficiency for SW. Reducing NRW is not only a technical issue but a financial incentive as well. If water tariffs are too low, the costs related to reducing NRW may exceed the benefits of saving water, as any water "saved" can only be sold at very low costs. NRW as well as billing and collections of tariffs can have catalytic impacts on cost recovery and SW's sustainability

SOLOMON WATER ANNOUNCES 2022 WATER AND WASTEWATER TARIFFS

The Ministry of Mines, Energy and Rural Electrification and the Ministry of Finance and Treasury has aproved an increase in Solomon Water's water and wastewater charges which are now in effect.

The new charges reflect the increasing cost to deliver water and wastewater services and the continuous improvements we will be undertaking to provide safe and reliable water services in our areas of operations.

Other minor charges including new domestic service connetions and other fees have also been approved.

Board Chairman Don Marahare said *"Our tariff is partly driven by high electricity costs and the need to provide our share of funds into the significant donor-funded upgrade programme. We also need to fund loan repayments to Government for some of the donor-funded works. We ask the Government to assist us with further donor grant funds instead of loans to assist in keeping water affordable to all our customers,"*

The new tariff represents an increase of only 84 cents per Kilolitre (tonne) of water for the lowest domestic tariff band.

Cost recovery is the ability of SW to take in sufficient revenues from customers to cover their current and some of their future costs. These include operations and maintenance costs (to deliver the service) as well as capital costs (including recuperation of asset depreciation over time and savings to pay for future capital investment needs). The first objective of water rates is to cover the direct financial cost of the service to guarantee sustainable services. As shown in the scorecard above, in 2019 before UWSSSP, the operating revenues covered 111 percent

of operation and maintenance costs, down from 111 percent in 2019 to 101 in 2022. SW's operating cost coverage ratio equal to or less than 1 shows SW is breaking even. Over the same time period, average operation and maintenance costs more than doubled and most of the increase owing to pandemic related fuel and cost escalation (see table below). The long-term financial sustainability of SW and its ability to meet operations and maintenance, and capital costs, depends on recovering costs from users and/or bringing in tariffs that are equivalent with the global average to cover operating costs.

Table 3. Operating Cost Efficiency Ratio (%)			
	2020	2021	2022
Total Operating Income (\$)	\$ 132,418,379.00	\$ 137,485,685.88	\$ 126,248,016.82
Total Operating Expenses (\$)	\$ 115,318,069.00	\$ 140,851,896.66	\$ 127,769,769.90
Net Profit/Loss	\$ 17,100,310.00	\$ (3,366,210.78)	\$ (1,521,753.08)
Operating Cost Efficiency Ratio (%)	87%	102%	101%
\$SBD/KL	25.69520921	24.48178685	24.63468129
Operating Cost Efficiency (\$USD/m3 sold)	3.13	2.98	3.00

Apart from reporting against PDO level indicators for UWSSSP in each reporting period, performance of the project will also be documented and analysed using OECD DAC guidelines on evaluation criteria – relevance, coherence, effectiveness, efficiency, impact and sustainability¹⁸, as the basis for the subsequent discussion of conclusions, lessons learnt and recommendations (see detailed discussion in Semi-Annual M&E Report January-June 2022). Six evaluation criteria explained below:

- (1) Relevance** – *is the intervention doing the right thing (alignment to host country needs and priorities)? Does it respond to beneficiaries, global, country, and partner/institution needs, policies, and priorities, and continue to do so if circumstances change.*
- (2) Coherence** – *how well does the intervention fit? The compatibility of the intervention with other interventions in a country, sector or institution.*
- (3) Effectiveness (efficacy)** – *is the intervention achieving its outcomes? The extent to which the intervention achieved, or is expected to achieve, its objectives, and its results including any differential results across groups.*
- (4) Efficiency-** *how well are the resources being used? The extent to which the intervention delivers, or is likely to deliver, results in an economic and timely way.*
- (5) Impact** – *what difference does the intervention make? The extent to which the intervention has generated or is expected to generate significant positive or negative, intended or unintended, higher-level effects.*

¹⁸ Accessed on 31/07/22

<<https://www.oecd.org/dac/evaluation/daccriteriaforevaluatingdevelopmentassistance.htm>>

(6) Sustainability – will the benefits last? The extent to which the net benefits of the intervention continue or are likely to continue.

(i) Relevance of PDO

The project and all its components remain highly relevant to Solomon Islands and its alignment with government priorities. The project is fully aligned with and supportive of government policies and priorities as defined in the new RWASH Strategic Plan (2021-2025). This Strategic Plan is under the authority of the Ministry of Health and Medical Services through its Environmental Health Division that is intended to guide the efforts of all national Ministries, Provincial and local Government, agencies, development partners and support organisations, NGOs, and others to deliver sustainable water and sanitation services for the benefit of Solomon Islanders. The RWASH Strategic Plan (2021-2025) defines how the rural water supply, sanitation and hygiene (WASH) sector will be developed over the next five years to address current challenges and improve the institutional arrangements in order to provide and support water and sanitation services for the rural population of the Solomon Islands.¹⁹ The Strategic Plan sits under the umbrella of both the National Development Strategy (2015-2035) and the National Health Strategic Plan (which is currently being prepared) and is aligned to the National Water and Sanitation (WATSAN) Action Plan, 2017-2033. The National Water and Sanitation (WATSAN) Plan, 2017-2033 outlines the water and sanitation sector's challenges that the plan addresses as well as policy goals and objectives, strategies, activities and resources to implement the WATSAN policy.²⁰ It is a long-term policy document with an accompanying plan that highlights the country's status, constraints, and drivers of water and sanitation.

UWSSSP will contribute to the implementation of the WATSAN policy action plan and the RWASH Strategic Plan (2021-2025). WASH in general, and water supply, are given high priority in the National Development Strategy 2016-2033, within Solomon Islands' mid-term and long-term development strategy. UWSSSP interventions will directly contribute to country's national development strategy, that is, "improve hygiene awareness and promote behaviour change in communities' access to clean water and sanitation facilities in schools, clinics and public institutions." At household level the priority accorded to improved access to potable water remains, as is to be expected, extremely high. Less obvious, but no less important, is the

¹⁹ Solomon Islands Government (2021) RWASH Strategic Plan (2021-2025)– Final Draft, July 2021. Accessed on 18/03/23.

²⁰ Ministry of Mines, Energy and Rural Electrification (2017) National Water and Sanitation Implementation Plan (2017-2033). Accessed 18/03/23 <
https://www.theprif.org/sites/default/files/documents/si_watsan_implementation_plan.pdf>

increased importance of sanitation and hygiene for the target communities through the project's efforts to raise awareness in this regard.

(ii) Coherence of PDO

As noted above, UWSSSP is directly contributing to the achievement of the National Water and Sanitation Implementation Plan (2017-2033). It is a 12-year integrated whole-of-government plan to implement the goals and objectives of the Solomon Islands National Water and Sanitation Policy (National WATSAN Policy), the sector goals of the National Development Strategy 2016-35 (NDS). UWSSSP is consistent with other Government initiatives and strategies, including the Draft Rural Water, Sanitation and Hygiene (RWASH) Policy, National Adaptation Plan of Action, 2009, Draft Medium Term Development Plan, 2013, Solomon Water (SIWA) Development Plan 2013-2015, National Disaster Risk Management Plan 2011 and the water and sanitation sector component of the Draft National Infrastructure Investment Plan 2013 (NIIP).

This National Water and Sanitation Plan (National WATSAN Plan)²¹ is a key Government strategy for ensuring that economic development, public health and food production are not compromised by inadequate, unreliable and unsafe water supplies and lack of appropriate sanitation. It is a response to priority concerns of rural and urban communities and most sectors throughout Solomon Islands (SI) about water supply and sanitation, identified in nation-wide consultations for the National Development Strategy 2016-35 (NDS). The WATSAN Plan has been developed by the Cabinet-appointed whole-of-government and community National Intersectoral Water Coordination Committee (NIWCC) through the of the Ministry of Mines Energy and Rural Electrification (MMERE) through its Water Resources Division (WRD).

Noting the diverse and complex WATSAN challenges in rural and urban areas in Solomon Islands requiring national and provincial government intervention, the UWSSSP will contribute to achievement of seven high priority policy areas noted in the WATSAN Policy:

1. Governance and Information
2. Capacity Development and Education
3. Community Partnerships
4. Safe, Secure, and Protected Water Source Areas
5. Sustainable Water Supplies and Conservation
6. Sanitation and Waste Management

²¹ Ibid.

7. Climate extremes, Disasters and Climate Change

SW will contribute to the following policy objectives and activities noted in the WATSAN Policy:

- 1.5.3 Storages, rates of extraction, water quality, supply systems, energy use, non-revenue water and physical and financial condition of supply systems reported for all urban centres
- 1.5.5 Survey of all sanitation systems in regional centres, their condition and environmental impacts
- 2.1.3 Skills training programs for urban water supply and sanitation system management, operation and maintenance for urban centres
- 2.1.4 Skills program for plumbing and household rainwater harvesting
- 3.1.2 Trial of public WATSAN education and awareness campaigns run in rural and urban areas.
- 3.1.4 Roll out of public WATSAN education and awareness campaigns across SI
- 5.2.3 Analysis of the water supply needs of all urban centres
- 5.2.4 Development of Water Master Plans for all urban centres
- 5.2.5 Progressive implementation of Master Plans for urban centres
- 5.7.1 Surface water supply systems designed to generate hydropower or minimise use of non-renewable fuels
- 5.7.2 New renewable energy water supply pumping systems installed where practical
- 5.8.1 Analysis of losses from piped water systems in urban centres
- 5.8.2 Phased loss reduction program commenced for urban centres
- 5.8.3 Illegal connections to water supply systems discouraged through improved laws, regulations or ordinances
- 5.9.1 Water meters connected to all urban water users
- 5.9.2 Uniform, equitable system for tiered-water tariffs introduced for all urban piped water systems
- 6.4.1 Designs developed for urban sewage and water disposal systems to minimise off-site pollution.
- 6.4.2 New urban sewage and water disposal systems installed

Despite the high priority of adequate, safe and reliable water and appropriate sanitation to National Development, public health and food production, there has been an underinvestment in this sector. *Solomon Islands National Infrastructure Investment Plan 2013-2023* lists proposed water supply, sanitation and hydropower infrastructure projects in rural and urban areas. It is clear from this Infrastructure Investment Plan that SIG will require donor assistance

so that the large financial burden can be spread by implementing projects in a phased pilot project approach.²² UWSSSP water supply projects will directly contribute to the Solomon Island's Infrastructure Plan (see Table 4 below).

Table 4: Priority Infrastructure Projects in Solomon Islands²³

Top 19 Projects	Next 10 Projects
<ul style="list-style-type: none"> • Henderson Apron Upgrade • Resealing of Urban Roads • Provincial Runways Upgrade • Honiara Main Roads • Honiara Port Remedial Works • Malaita North Road • Honiara Urban Devt • Tina Hydropower • Provincial Sanitary Landfills • Honiara SIEA Genset Upgrade • 2013 Replacement (Domestic) Wharves • New (domestic) Wharves Tranche 2 • Rural WASH Projects • Guadalcanal Feeder Roads Tranche 2 • Malaita Feeder Roads Tranche 1 • Water Supply 2 Year Plan • Naro Hill - Lambi Road • Honiara Port Extension (new wharf) • Rural Electrification 	<ul style="list-style-type: none"> • Gizo Water Supply • Mberande - Aola Road • Malaita Main Roads • Remote Communities ICT • Choiseul Township • Guadalcanal Feeder Roads Tranche 3 • Guadalcanal Feeder Roads Tranche 4 • Malaita Feeder Roads Tranche 2 • Choiseul Bay Connectivity Road • Malaita Industrial Parks

²² Solomon Islands Government (2013) Solomon Islands National Infrastructure Investment Plan 2013-2023, Ministry of Development Planning and Aid Coordination. Accessed 25/03/23
<<https://www.theprif.org/sites/default/files/documents/solomon-islands-national-infrastructure-investment-plan-summary-paper.pdf>>

²³ Ibid.

(iii) Effectiveness (efficacy) of PDO

The level of effectiveness of the project was satisfactory. As noted in the February 2023 Review Mission, project progress from October 2022 to January 2023, while being slower than the in previous 6 month, due to Christmas-New Year festivities and Project Management Unit (PMU) staff movement, has been satisfactory. Significant project milestones reached in this reporting period include:²⁴

- (i) signing of contracts for the Honiara Sanitation Sewer Works – *Ranadi Road to Goodwood Outfall* contract; and the Honiara Sanitation Sewer Works – *Kukum Highway Fisheries to Ranadi roundabout* contract.
- (ii) the ground breaking for the Kongulai water treatment plant and associated works;
- (iii) the signing of the ADB-EU Financing Framework Partnership Agreement (FFPA) a prerequisite for the ADB-EU project-specific Contribution Agreement and effectiveness of the project's EU grant;
- (iv) the completion of draft bidding documents for the Noro and Gizo water supply subprojects and for the Honiara wastewater mains and outfalls subproject; and
- (v) the clearance of the environmental impact statement (EIS) for the Honiara wastewater mains and outfalls by ADB and WB.

The achievements of the project in terms of delivering the planned outputs and results for each of the indicators are noted in section 4 of this report. However, key ongoing and emerging project risks are: (i) cost escalation of goods and works; (ii) the delay in the effectiveness of the EU grant; and (iii) increasing non-revenue water which undermines SW financial viability and its ability to increase the coverage of its water supply services with its current water production capacity.

The delay in the declaration of effectiveness of the EU grant is problematic and is impacting on several ongoing contracts due to the cost sharing arrangements stipulated in the project financing agreements and has the potential to delay bidding for some provincial water supply subprojects (e.g., Noro). The financing gap has implications for the overall scope of the project which may need to be reduced and the subprojects refocused on the highest priority investments unless SW secures additional financing. With increasing materials and construction costs, updating of the UWSSSP subproject priority list is required. SW is currently

²⁴ UWSSSP Aid Memoire February 2023 Review Mission.

updating the subproject priority list (to be finalized in May 2023). Gizo and Noro provincial water supply subprojects and water main replacements in Honiara to address the substantial non-revenue water (NRW) remains highest UWSSSP priority investments.

Non-revenue water (NRW) is a serious challenge for SW. As noted earlier, in 2022 the average NRW for all SW water supply networks was 60% and 58% for the Honiara network and trending upwards (the average NRW for the Honiara network NRW in 2021 was 55%). Removing technical inefficiencies relating to water losses (NRW) can generate resources and enhance profits for SW and further reduce the need for new investments. Reducing non-revenue water, improving billing and collections, and selecting the right technology are three of the most important efficiency improvements that UWSSSP can make. NRW, billing and collections of tariffs, and technology choice will have catalytic impacts on cost recovery for SW. While it is unrealistic to assume NRW could be reduced to 0%, achieving SW's target of 30% could increase SW's annual revenue by up to SBD80 million (USD\$10 million) and enable SW to connect an additional 13,000 households to SW water supply networks without augmenting water production. To achieve the 30% NRW, SW will need to substantially increase its investments in pipe renewals and expand its NRW management capacity.

MOBILISATION KICKS OFF FOR KEY HONIARA WATER INFRASTRUCTURE PROJECTS

Mobilisation to start the Kongulai Water Treatment Plant and the Honiara Trunk Mains and Reservoir projects has begun.

Solomon Water awarded three international joint ventures with contracts for the Kongulai Water Treatment Plant, the Honiara Water Reservoirs Project and the Honiara Water Supply Trunk Main Upgrade Project.

Rean PCS Joint Venture was awarded the SBD 130m treatment plant contract. Pacific Engineering Projects ION Exchange Joint Venture was awarded the reservoirs project and Pacific Engineering Projects was also awarded the trunk mains project – both projects together worth over SBD 120m.

Solomon Water CEO Ian Gooden highlights that there have been delays commencing earthworks for all the projects but this is to be expected post COVID-19, especially in Solomon Islands.

"The current construction climate in Honiara post-covid is tough in terms of mobilizing resources and will be especially so for international companies with no previous presence on the ground here. Teams from the joint venture contractors have been in Honiara and are meeting with our Project Managers on almost a weekly basis since Solomon Islands borders fully reopened in July this year. We are happy to finally have them in-country and to see them in the process of mobilizing resources to start the projects".

All the projects are funded by the Asian Development Bank (ADB) and World Bank (WB) and when completed will significantly increase Solomon Water's capacity to produce, store and distribute treated water to its growing customer population in Honiara.

The three projects should take between 12 and 18 months to complete.

Source: 2022 WaterStori, Issue 2

(iv) **Efficiency of PDOs²⁵**

The efficiency with which the project was implemented was satisfactory to high in most aspects. Planning, budgeting, monitoring and management of financial, human and other resources were generally good and all appropriate management tools were used.

²⁵ This section has been adapted from UWSSSP Aid Memoire February 2023 Review Mission.

Quality of Project implementation and deliverables: The project steering committee (PSC) is expected to meet quarterly. The last PSC meeting was convened on 11 October 2022. The next PSC meeting is likely to be convened in the second week of May 2023 during the proposed UWSSSP midterm review mission. The project management unit (PMU) is performing well. Mr. John Hughes assumed the positions as PMU Head in November 2022 following the departure of Mr. Richard Farrell. Mr. Adam Searancke, one of the two international project managers within the PMU has informed SW of his intention to leave the project when his current contract with SW expires on 30 August 2023. SW will commence recruitment of a replacement before the end of March 2023.

As noted in previous UWSSSP Mission reports, SW water has engaged SAFEGE SAS ("Suez") and SMEC International ("SMEC") to prepare feasibility studies and bidding and associated safeguards documents for the UWSSSP water supply and sewerage subprojects. SW's contract with Suez expired on 31 December 2022 and was not extended. Suez submitted the outstanding contract deliverables on 30 December 2022 except for the hydrogeological report for Munda. SW is currently reviewing the Suez final outputs and, if required, will make any amendments necessary to the bidding documents. SW will undertake the Munda hydrogeological investigation. Suez has submitted a substantial claim for additional consulting services costs arising from the delayed completion of the contract. SW is currently reviewing the claim.

In comparison to Suez, SMEC's progress towards delivering its contractual outputs is satisfactory. The sewer manhole condition survey is expected to be completed in mid-February 2023. Preparation of safeguard documents, detailed engineering design, and preparation of bidding documents for the Honiara water supply pipeline replacements, the Honiara water supply network expansion, and the rehabilitation of Honiara sewer collection pipes is ongoing. The bidding documents are now expected to be completed by the end of June 2023. SW has requested SMEC to accelerate the preparation of bidding documents for the Honiara water supply pipeline replacements subproject to support its non-revenue water reduction program. Preparation of the draft second SW 5-Year Action Plan is now expected to be completed by the end of March 2023.

Partnerships with Implementing NGOs: SW has also engaged, through the project, Plan International and individual consultants to: (i) design and implement the project's hygiene awareness and education program, (ii) prepare the greater Honiara Sanitation Plan and to prepare draft sanitation bylaws for Honiara City Council and Guadalcanal Province, and (iii) manage the project's water supply catchment protection program. Outputs from the Plan

International team have exceeded SW and the Mission's expectations. SW's contract with Plan International will expire on 28 February 2023. ADB is currently engaging Plan International under a new contract financed by ADB's ongoing regional WASH technical assistance program to continue the project's hygiene awareness and education programs. SW engaged the Nakau Programme Pty Ltd ("Nakau", an Australian-based social purposes company registered as a Pty Ltd) in November 2022 to design and start-up implementation of Payment for Ecosystem Services (PES) activities in Honiara's water supply catchments under the project's water supply catchment protection program.

Implementation against work plan and cost effectiveness: Project implementation progress on 3 February 2023 is estimated at 32.8% against an overall elapsed project duration of 38.7%.²⁶ The project implementation schedule was updated during February 2023 Review mission and based on the project lapsed time, all project activities will be completed in July 2027. In terms of cost effectiveness and financing, as of 3 February 2023, 37 contracts with an aggregate cost of USD\$60.9 million equivalent had been awarded of which USD\$51.0 is funded by the ADB, GEF, and WB project financing and USD\$9.3 million by SW. A breakdown of the contract commitments by output is: (i) Output 1 (water supply) - USD\$35.2 million; (ii) Output 2 (sanitation) - \$15.5 million; (iii) Output 3 (hygiene awareness and education) - USD\$0.9 million; (iv) Output 4 (institutional strengthening of SW) - USD\$0.9 million; (v) Output 5 (drinking water source management) - USD\$2.1 million; (vi) USD\$5.60 million for project management, engineering design, and preparation of bidding documents; and (vii) USD\$0.61 million for financing charges (capitalized interest). Contract award commitments by each of the development partner financing sources is: ADB concessional loan: 96%; ADB grant: 98%; GEF grant: 68%; and IDA Credit: 70%. The delay in the declaration of the effectiveness of the EU grant is problematic and is impacting on several ongoing contracts due to the cost sharing arrangements stipulated in the project financing agreements and has the potential to delay bidding for some provincial water supply subprojects (e.g., Noro).

Safeguard compliance and monitoring arrangements: There is a strong team, working well at the PMU who looks after and manages environmental and social safeguards issues, in particular any challenges around land use and ownership. The mission visited the Ranadi to Goodwood section to inspect the sewerage pipeline and then checked the site for the new outfall. There are no issues associated with land access as the outfall pipe will be trenched along the boundary of the Goodwood warehouse, the previous concerns with the property developer have been resolved by utilizing an alternate alignment. The SW lands team are

²⁶ UWSSSP Aid Memoire February 2023 Review Mission.

managing legacy issues with land in Noro but no major impacts are expected. The GRM is functioning with many of the grievances received being resolved on the spot. A recent issue, which involved payment to landowners, which would have impacted the ground-breaking ceremony, was well managed and resolved by the SW lands team. The issue was caused by limited communication within the landowning unit and is now fully resolved following further consultations between the landowners and SW. The issue has been recorded in the GRM.

The SW team have experienced ongoing issues with the quality of CESMPs prepared by contractors and this is taking up much of the SW team's time. The contractors have now recruited an external consultant (recommended by the SW team) who is working to address comments and finalize the CESMP. The final CESMPs for Ranadi to Goodwood, Honiara Trunk Mains, Honiara Reservoir and Kongulai are anticipated to be submitted to ADB/WB for review by 10 February 2023. Some preliminary works have commenced, based on conditional approval of CESMPs for Honiara Water Reservoirs (Panatina Reservoir demolition) and Ranadi to Goodwood Sewer Works (potholing and utility marking works along the pipeline alignment). Main works cannot commence until the CESMPs receive full clearance, including review and comment by ADB and WB. The mission discussed the importance of regular environmental and social inspections and auditing of contractors by the SW team to confirm compliance with overall project safeguard and CESMP requirements.

Quality of products:

As noted earlier, Solomon Islands is affected by warmer climate impacts that affects every phase of the water cycle, with catastrophic consequences for energy generation, health, and livelihoods. UWSSSP is working to address such impacts by contributing critical knowledge and analysis that will Solomon Islands government and SW to strategically plan institutional investments, increase water storage capacity, and improve infrastructure, including climate-resilient green infrastructure solutions. Since the project started, climate considerations have become embedded in UWSSSP technical support, reflected in the infrastructure bidding designs and safeguard documents that strengthen the management and sustainability of Honiara's drinking water source areas and build resilience to climate change. UWSSSP continues to play an important role in helping Solomon Island government to understand the drivers of a changing climate and in increasing SW's abilities to monitor, manage, and prepare for the variable water flows caused by climate change.

The quality of community consultations about the project with key stakeholders has been encouraging. Most of the consultations were facilitated and led by Social Safeguard

consultants, SMEC consultants and SW Community Liaison Officer and Land Management Officer.

SOLOMON WATER COMPLETES UWSSSP PHASE 2 CONSULTATIONS IN TARO

Solomon Water has completed consultations in Taro and surrounding communities in Choiseul Bay on the mainland and in Supizae Island for the proposed water supply and sewerage system project for the township.

The project is part of the second phase of the Urban Water Supply and Sanitation Sector Project (UWSSSP) and supports the development of Choiseul Town under its 2006 Choiseul Bay Township Local Planning Scheme.

The consultations objectives were to:

- Ensure the project reflected local needs, has local support, and avoids or minimizes any adverse impacts on the community, local businesses, and the environment.
- Provide an avenue for information sharing, new ideas, different perspectives
- Understand provincial concerns and address questions from the Provincial Government and key stakeholders in the province.
- Foster a sense of project ownership in Choiseul Province.

- Gain support and understanding of the project in Choiseul Province.

A feasibility study carried out by a Solomon Water contractor SMEC is also currently ongoing in the township.

The study is based on the 2006 Choiseul Bay Township Local Planning Scheme and will investigate future water use volumes and identify suitable water sources and any treatment requirements as well as co-location on the same source with the hydropower system.

The study will also map out the distribution network including storage and pumping requirements as well as it considers management of wastewater and sanitary waste in Choiseul town and Taro, Supizae islands.

The consultations in Taro was conducted by Social Safeguard consultant Marista Kapini, Community Liaison Officer Relinta Manaka and Land Management Officer Agnes Atkin with SMEC consultants.

Source: 2022 WaterTok, Issue 7.

The quality of products relating to Output 3 activities: *Water Conservation, Sanitation and Hygiene Awareness and Education* has exceeded expectations (see details in Section 4). The quality of documents produced by the project and SW with project support or input is also very good, notably the WASH Guidelines and various training/awareness materials. They are all relevant and appropriate to local context and to the target audience, comprehensive, gender and human rights sensitive and professionally laid out.

SOLOMON WATER HYGIENE PROMOTION PROJECT LAUNCHES IN GREEN VALLEY

The Solomon Water Hygiene Promotion Project was officially launched in Green Valley last weekend which was attended by more than one hundred Green Valley residents.

Under the theme ***"Hand washing at critical times"*** the day was marked with a variety of cultural dances, fun activities and a handwashing skit put on by the Green Valley youth members.

The project was officially launched by the Councilor for Kola Ward Francis Idu and attended by Live and Learn Solomon Islands, Plan International and Solomon Water.



Key Stakeholder Officials inspecting the newly developed wash basins at Green Valley.



Little Tryvinah Waegao washing her hands in the newly installed wash basin in Green Valley Community

Source: 2022 WaterTok, Issue 6

Coordination with other programmes: Through SW's very active participation in sector forums and coordination structures, the activities of the project were effectively coordinated with those of other programmes at both national and district levels. This was ensured right from the design phase of the project, during which the identification of target sub-districts was made in such a way as to avoid overlap with other donor-supported programmes. Support for development of policies and guidelines was also effectively coordinated through participation in sector forums and regular bilateral communication and coordination. Effective synergies are being achieved with the UWSSSP.

WASH in School (WinS) Technical Working Group Launched

Solomon Water has been invited to be a member of the national WASH in Schools (WinS) Technical Working Group.

The WinS Technical Working Group, is a body mandated by MEHRD to support the Ministry through technical advice and oversight to the program in the country.

Launched earlier this month, the Technical working group includes Solomon Water, the Ministry of Education Human Resources Development (MEHRD), Ministry of Health and Medical Services, UNICEF and other key national stakeholders in the sector.

National WASH Officer Georgina Hou who oversees the UWSSSP WinS Project represents Solomon Water in the Technical Working Group.



Stakeholders group photo during the launching of the WASH in Schools Program at the Ministry of Education and Human Resources Development (MEHRD)

Source: 2022 WaterTok, Issue 6

HONIARA VULNERABLE HOUSEHOLDS WATER SUPPLY PROJECT IN SAVO HEIGHTS

There is no health without accessible, safe and clean drinking water. A lack of access to clean water presents numerous challenges – children suffer from waterborne diseases, women and girls risk their lives and safety to trek long distances and hours to fetch water.

Through the vision: **“Safe Water for a Healthy Nation”** and the Water Supply and Sanitation for Vulnerable Communities Project, Solomon Water is implementing a project funded by Australian DFAT to connect vulnerable households to its water distribution network. The project will construct new water mains and reticulation lines and install new household water connections to customers who currently use poor quality surface water for their household needs. Many of these households are in vulnerable settlements in Honiara.

Savo Heights in far west Honiara is a beneficiary of the project and over 300 potential customers have applied for a water meter and connection to their homes. Trenching and pipelining works to connect customers in the area is completed and residents describe the project as a blessing.

Resident Osborne Tuhenua, a resident of Savo Heights since 2007 said the community is grateful that they will soon have access to safe clean drinking water. *“We look forward to the day when a water tap is turned on in our homes”*

Mr Tuhenua said, *“We walk almost two kilometers every day to fetch water from the Kongulai stream or from a well at the Savo market sea side. This routine is tiring and unsafe for our children, girls and women. The water is also unsafe.”*

Savo Heights Settlement should be fully connected by June this year.

Source: 2022 WaterStori, Issue 1

(v) **Impact and Sustainability of PDOs**

While the UWSSSP program supported by World Bank and ADB in is relatively new in the country, the focus of UWSSSP support has been to help SI government to achieve universal water supply and sanitation access, which required an in-depth understanding of the historical barriers to universal access and the key challenges to effective policy and good governance. UWSSSP program support is expanding to address the challenges of climate change and the growing fragility of water resources in Solomon Islands. The Solomon Islands are rapidly urbanizing and the population of the capital, Honiara, is expected to triple in just 30 years. Under the 30-year strategy of the national water utility, Solomon Water, direction has been sought from the Solomon Islands’ government on options to provide services in informal settlements, which are estimated to house over 30 percent of Honiara’s population. The results

have built institutional knowledge and know-how on citywide water and sanitation planning and evidence-based decision-making. Moreover, results have informed investments in a program focused on WASH services in settlements under the Urban Water Supply and Sanitation Sector project, co-financed by the World Bank, the Asian Development Bank, and the European Union (totalling \$82.3 million, of which the World Bank component is \$15.0 million).

As highlighted earlier, the WATSAN Plan 2017 – 2033 are national documents that provide the basis for UWSSSP intervention in specific areas of interest within the country's mid-term or long-term development strategy. In the case of the Solomon Islands, a long-term development strategy, the National Development Strategy 2016 -2033 (SIG, 2016), is in place. The Medium-Term Strategy (MTS) 5 states the need to ensure improved safe water, sanitation and hygiene practices. It specifically aims to "improve hygiene awareness and promote behaviour change in communities" and "access to clean water and sanitation facilities in schools, clinics and public institutions".²⁷ Carving a niche in line with aspects of the country's national development strategy UWSSSP ensures government endorsement and support for proposed interventions.

One of the most important strategies for providing safe water for human use is to protect water source areas from contamination, misuse, misappropriation and urbanisation. There is very limited protection in SI. Water supply schemes must have access to reliable sources of water but customary land tenure limits accessibility. Ensuring land use does not degrade water resources is a major contentious issue. Customary land-tenure in catchments, high population growth rates, increasing demand, especially in urban and peri-urban areas, and development pressures from mining, forestry and agriculture, means that securing safe, protected water sources is a major, and complex challenge for the UWSSSP. The major issues that will affect the achievability of project impact and sustainability are:²⁸

- The high rates of preventable water-borne diseases in urban and rural communities.
- Lack of protection of surface and groundwater sources, particularly from mining, forestry farming, waste disposal and urbanisation.
- Uncontrolled land uses, particularly urban and peri-urban development, logging, mining, farming and waste disposal in water supply catchments and groundwater production areas and their impacts on near-shore marine environments and ecosystems.

²⁷ Solomon Islands National Development Strategy 2016-2035. Accessed 28/03/23 < <https://www.adb.org/sites/default/files/linked-documents/cobp-sol-2017-2019-ld-01.pdf> >

²⁸ Ministry of Mines, Energy and Rural Electrification (2017) National Water and Sanitation Implementation Plan (2017-2033). Accessed 28/03/23 < https://www.theprif.org/sites/default/files/documents/si_watsan_implementation_plan.pdf >

- No licensing system or approvals process for construction and operation of rural water supply and sanitation systems.
- Unregulated groundwater extraction
- Effect of customary land tenure on access to, reliability of and water sources and operational costs of water supply systems.
- Lack of standard, equitable, national scheme for compensation of traditional owners in water supply catchments.
- Absence of no social benefits to communities in water catchments from current compensation payment system.

Supplying adequate, reliable safe water to the highly dispersed, largely rural population in Solomon Island is a major challenge which must rely on partnerships with local communities or community organisations such as churches. The state does not own land categorised as customary land in the country. Around 87% of land in the country is under customary tenure and therefore negotiations must be conducted with landowning clans to access land or water sources as and when required.²⁹ As part of Social Safeguards processes, engaging appropriate people in the community who know “who's who” has been critical when designing UWSSSP interventions in the communities. Water sources that supply urban areas, such as the Kongulai water source in Honiara and the Ziata source that supplies Noro town in the Western province, are on customary land. SW continues to liaise with other government ministries and leaders of clans that host these water sources when disputes arise. As illustrated below, customary landowners continue to disrupt water supplies at Kongulai source.

²⁹ Marc Wilson, Gordon Nanau, Milika Sobey & Semi Lotawa (2022) *Political Economy of Water Management and Community Perceptions in Pacific Island Countries*. The Australian Water Partnership, Asia Foundation and DFAT. Accessed 28/03/23 < <https://asiafoundation.org/wp-content/uploads/2022/10/Political-Economy-of-Water-Resources-Management-and-Community-Perceptions-in-the-Pacific-Island-Countries.pdf> >

PRESS RELEASE : LOW WATER LEVEL AT KONGULAI AFFECTS HONIARA RESIDENTS

Solomon Water continues to experience low water level at our Kongulai water source.

The situation at Kongulai is serious and we are treating it as such.

We continue to work with responsible authorities, including the Ministry of Mines, Energy and Rural Electrification and Kongulai landowners to identify the obstructions that may be blocking water to the Kongulai source. We have cleared some of the obstructions at the sinkholes, although this has taken much longer than we expected. We are yet to see any improvements in the water levels.

The daily monitoring of water levels at the Kongulai water source continues and we have done some alterations to our water distribution system to ensure water reaches most customers.

Our investigations are continuing. Solomon Water is continuing water rationing and advises customers to ensure that enough water is stored as water supply may be interrupted.

Most of the affected residences include West and Central Honiara and parts of East Honiara.



Kongulai source in September 2021



Kongulai source in September 2022

Source: 2022 WaterTok, Issue 7.

The impact and sustainability of the project objectives under UWSSSP is dependent on the understanding the key actors and local power dynamics so that the state, donors and landowners collaborate together to implement the project activities. For UWSSSP to deliver project outcomes, it is important to understand and appreciate local-level politics and engage with appropriate ministries and technical experts as collaborators. The focus should be on building the capacity of local people in rural communities to maintain support and ensure continuity after the end of the programme (see a case study of similar project in Guadalcanal).

KONGULAI WATER SOURCE DISRUPTION



Honiara Network Operations Team Leader Tamo Talasasa with Patrick Turanga working at the Kohovi sinkhole

The Kongulai weir last week experienced a sudden drop in water levels which greatly impacted water supply production for Honiara. The sudden drop was due to intentional blocking of the sinkhole feeding the Kongulai dam.

Solomon Water last week called on the Solomon Islands Government, responsible authorities and Kongulai community leaders to support our efforts to resolve the ongoing sabotage of the Kongulai source and thereby help to avoid risks to public health, convenience and hygiene through lack of adequate water supply. We also called on the public to support Solomon Water and to respect our staff in the field.

Following recent successful consultations with landowners, the sinkhole has recovered and water levels at the weir has returned to normal, however resolution of landowner issues is needed for long term security of the supply.

Source: 2022 WaterTok, Issue 8.

Text box 1: Case Study of Tamale Community Water Supply Project³⁰

A community water supply project in Tamale village in West Guadalcanal. The materials for the dam, cement, nets, fittings, water pipes and tap-stands for village taps were donor-funded, and the community also contributed cash and labour towards the project. The need for a water supply incentivised the community, who drew on their social capital and institutional arrangements and adapted arrangements put in place by the funding agency. Structural dimensions that impacted on the results: "Villagers belong to (i) one religious group, (ii) one cultural group, (iii) some members of the village are part of the nearby school committee, and church committee, and (iv) decisions in the village are reached by consensus in open public village discussions". The community also cooperated because they anticipated that the outcome would benefit them individually and as a community. They even formed a committee to take on the challenge of maintaining the water supply after the project's completion. The importance of local contexts, knowledge, and experience as the basis for genuine participation cannot be overemphasised.

The political economy of rural communities that encourages development undertakings in local communities and engage with customary landowners is necessary for the successful delivery of outcomes under UWSSSP. The Tamale water supply project highlighted above is a case in point that illustrates how customary owners as active players and participants in any development project in their local community goes a long way in water resource management.³¹

³⁰ Ibid.

³¹ Marc Wilson, Gordon Nanau, Milika Sobey & Semi Lotawa (2022) *Political Economy of Water Management and Community Perceptions in Pacific Island Countries*. The Australian Water Partnership, Asia Foundation and DFAT. Accessed 28/03/23 < <https://asiafoundation.org/wp-content/uploads/2022/10/Political-Economy-of-Water-Resources-Management-and-Community-Perceptions-in-the-Pacific-Island-Countries.pdf> >

4. PROJECT OUTPUT PROGRESS AND ACHIEVABILITY

4.1 Status of Project Outputs

This section provides an update on the status of project across the five outputs using Output Performance Report that tracks indicator level progress and performance using a traffic light score card. In compiling this report, the M&E Specialist also collated information from SW month and annual reports on operations, water quality, sewerage, customer care, connections and billing as well as PMU inception reports on sub-output level activities.

Progress against each of the output indicators will be reported against the planned outputs. Narrative assessment will be made on progress reported against the output indicators using a traffic light score rating (see below):

Rating	Score	Output Criteria
On track/high rating	5 - 6	At this point, the project has fully achieved the outputs and is on track to contribute to the anticipated results and long term outcome
Satisfactory Progress rating	4	At this point, with minor exception, the project interventions has acheived the outputs and is on track to contribute to the anticipated results and the long term outcome
Partial progress rating	3	At this point, the intervention has partially achieved some of the outputs but needs to address outstanding issues if it is to effectively contribute to the anticipated results and the long term outcome by end of project.
Little/no progress low rating	1 - 2	At this point, project interventions has not achieved the outputs expected and a management decision is required about its future progress

Output 1: Urban and provincial centre water supplies are safe and continuous³²

The performance of the Contractors engaged for the three ongoing Honiara water supply contracts (Kongulai water treatment plant and pipeline – Rean- PCS Joint Venture; Honiara water supply reservoirs – Pacific Engineering Project (PEP); and Honiara water supply mains - PEP) has been poor with very little progress made for any of the contracts since October 2022.⁷ No construction activities had occurred except for demolition works at the Panatina Reservoir under the Honiara water supply reservoirs contract. The limited progress is primarily due to: (i) contractor difficulties in obtaining the insurances required under the contracts, and (ii) the contractors have been unable to submit construction environmental and social management plans (CESMP) which are acceptable to SW and the project partners.

The issues which have hindered contractors obtaining insurances for the works are now being resolved with the assistance of SW. SW has also engaged an environmental specialist to assist the contractors to submit CESMP documents which meet SW and development partner

³² Progress on the status of the outputs has been adapted from UWSSSP Aid Memoire February 2023 Review Mission.

requirements. SW expects to submit updated CESMPs for the 3 contracts for development partner approval by 15 February 2023. SW has requested SMEC to fast-track the preparation of Honiara water supply trunk main pipe renewal bidding documents. SW is targeting inviting bids for the Honiara water supply pipeline replacements in early-June 2023.

For Provincial water supply subprojects, draft bidding documents for the Gizo, Munda, and Noro, are now complete and are currently being reviewed by SW. Updated draft safeguard documents for Gizo, Munda, and Noro have also been prepared and are being reviewed by SW prior to the project partners for clearance. The safeguard documents for Munda will require further revision as key hydrogeological information to confirm the sustainability of the proposed groundwater sources have yet to be captured. SW plans to submit the draft bidding documents for Noro for development partner review on 15 February 2023 and to invite bids in April 2023. The Gizo water supply subcomponent is under review due to poor yields at the proposed source.

DEVELOPMENT PARTNER MISSION HAPPY WITH SOLOMON WATER PROGRESS



One of the reservoirs (red roof) to be replaced under the UWSSSP project.

Following more than 2 years since their last in country mission, Solomon Water was very pleased to host representatives from ADB, World Bank and the European Union (EU) during early October for a project review mission.

The purpose of the mission was to review the implementation of the Solomon Water Urban Water Supply and Sanitation Sector Project (UWSSSP), consider risks and concerns, and update project costs. The mission met with senior staff of Solomon Water, consultants supplying services to the project, senior government officials and the Project Steering group, and was happy with the solid progress being made.

The significant time delay impacts of the pandemic were noted and that Solomon Water had nevertheless managed to make ongoing progress on the WaSH programme as well as design and construction tendering of several major infrastructure projects.

A co-financing agreement between ADB and EU remains to be executed and this is delaying the bidding of several projects. Hopefully these funds will become effective before Christmas 2022. Solomon Water's ongoing concerns with Kongulai spring flow, including suspected landowner sabotage were discussed.



An aerial view of the completed Rove Source Rehabilitation Project that was funded by DFAT Australia.

The mission discussed the risk this puts on the Kongulai water treatment plant construction together with the significant cost burden on Solomon Water and inconvenience and health risk to our customers though lack of sufficient water at their homes.

Costs for the UWSSSP were reviewed and the high and volatile prices for fuel, materials, shipping and other factors together with the shortage of competent contractors in this region were noted and the impact of these factors on the tender prices being received.

The project cost estimates were updated and it was noted that the current funding of around USD 72m is significantly lower than the USD 160m now needed to complete all projects planned under the UWSSSP. Further requests to the SI Government and donors to support this funding shortfall are made.

DFAT Australia, whilst not a party to the project, has committed significant funding to Solomon Water in recent years and this has contributed to various project objectives particularly with water supply to vulnerable communities, water security, WaSH and hygiene education, and AUD 10m towards the construction of the Gizo water supply.

SW AWARDS KONGULAI WATER TREATMENT PLANT PROJECT

Solomon Water has awarded a SBD 130m contract for the construction of its new Kongulai Water Treatment Plant and pipeline Project (Bid No. SW0402021) to REAN PCS Joint Venture.

Rean Watertech is a water company specialising in delivering water and wastewater projects. P.C. Snehal Construction Pvt. Ltd is an engineering and infrastructure company with over forty years of experience. Both companies are based in India.

Funded by the Asian Development Bank (ADB) and World Bank (WB), the joint venture will construct a water treatment plant up at Solomon water's Kongulai pumping station with a capacity to treat 15 megalitres (million litres) of water per day through the use of clarifiers and filtration. Associated works include raw and treated water pump stations, pipe bridges, sludge ponds and site civil works and a new rising main up to the Tasahae reservoirs. The joint venture will also train Solomon Water staff to operate and maintain the water treatment plant for a period of at least 12 months.

Solomon Water CEO Ian Gooden said *"This will be the largest and most complex project ever built by Solomon Water and we are thrilled to finally award a contract for it. When completed, the project will significantly improve the continuity and quality of our water supply to Honiara residents and businesses without interruption"*.

Solomon Water received five bids for the Kongulai Water Treatment Plant and Pipeline Project. Construction should start around June and will run for 14 months and then the contractor will operate and maintain the plant for a further 12 months.

Source: 2022 WaterStori, Issue 1.

SOLOMON WATER AWARDS HONIARA WATER RESERVOIRS AND TRUNK MAINS CONTRACTS PROJECT

Solomon Water has awarded a USD 7.1m (SBD 57m) contract for the to Pacific Engineering Projects ION Exchange joint venture.

Solomon Water also awarded the Honiara Water Supply Trunk Main Upgrade Project contract worth USD 7.8m (SBD 63m) to Pacific Engineering Projects.

Pacific Engineering is a New Zealand-based engineering and construction company. ION Exchange is a water supply and environment management company based in India.

Funded by the Asian Development Bank (ADB) and World Bank (WB), the joint venture will construct and commission three new concrete water reservoirs and other works associated with the project.

The three new concrete reservoirs, that are able to hold a total of approximately 9 million liters of water, are the Titinge Reservoir, the Tasahe Reservoir, and the Panatina Reservoir.

Under the Honiara Water Supply Trunk Main Upgrade Project, Pacific Engineering Projects will construct three new trunk mains from Kongulai to White River, approximately 6kms long; East Kola Ridge to the Kukum Highway, approximately 1.8 kms long; and Panatina to Burns Creek, approximately 3.2 kms long.

Solomon Water CEO Ian Gooden said *"We are thrilled to award these two major donor funded Urban Water Supply and Sanitation Sector Project projects. The reservoirs are essential to increase our storage capacity for treated water so that we are able to supply water to all customers with less disruption when we experience network problems or shutdown water supply because of high turbidity or pump breakdowns. The total capacity of the new reservoirs means an extra six hours of storage across the city network. The trunk mains is another of our critical water infrastructure projects for Honiara and will construct a combined 11 kilometers of new mains that will increase our network's transfer capacity in Honiara"*.

Construction for both projects should start in July this year and will run for 18 months.



Existing Panatina Reservoir, East Honiara

Source: 2022 WaterStori, Issue 1.

ROVE SOURCE REHABILITATION PROJECT INCREASES WATER PRODUCTION RATES



Rove Source during the initial construction work by Hatanga Ltd construction team.

The Rove Source Upgrade and Rehabilitation project has increased its water production rate. This follows the successful completion of the project in September this year.

The boost means Solomon Water can now confidently meet increasing customer demands for water supply in critical areas such as the Honiara CBD and the National Referral Hospital.

At a brief ceremony to mark the project's completion, Project Manager Noel Orudiana said the upgraded source will see a significant increase in water production rate.

"Prior to the rehabilitation work done at the source, the average production rate is around 1.5 megalitres per day, but since the completion of the project, we have noticed a significant increase in production at over 2 megalitres per day," Mr. Orudiana said.



SW and Hatanga Ltd staff after the project completion ceremony at the Rove Source.

Managing Director for Hatanga Ltd Jay Bartlett described the project completion as a significant achievement for both organizations.

"Thank you Solomon Water Board and Management for recognizing a local contractor. It's not easy getting this far, especially delivering water services for your customers," he said.

The Chief Operations Officer Scravin Tongi said he is happy to see the project completed. *"The project targeted to double our production rate at the Rove Source. I am very happy to see this completion," he said.*

Meanwhile CEO Ian Gooden commended the Project Management team for taking on the challenge and Hatanga Construction for taking on the challenges as a local contractor.

Source: 2022 WaterTok, Issue 8

KWAIBALA SOURCE REHABILITATION AND FENCING PROJECT NEARING COMPLETION



Kwaibala fencing project well underway

The project to rehabilitate and upgrade the Solomon Water Kwaibala water source and fencing in Auki is nearing completion.

The project is contracted to a local firm, Alrico Construction and is wholly funded by SW for a contract sum of over SBD\$3.8 million dollars.

"The Kwaibala source provides water for over 60% of Auki's water demand and must be protected to ensure SW assets are not vandalized and water production is maintained and improved", Project Manager Noel Orudiana said.

The project commenced in late April 2022 and is expected to be completed by the end of September 2022.

Source: 2022, WaterTok, Issue 6

UPDATE ON NORO STAFF HOUSE PROJECT

Work to construct staff houses in Noro, is progressing well. The project has three phases - clearance of the site, building two houses, and constructing a fence around the houses.

Project Engineer Lisa Baura said, *“Work on the site is progressing well. With one house is already up, and clearance for the second house is also ongoing”,* she said.

The project started in April this year and is expected to be completed by February next year.



Development stage of one of the staff house project in Noro



Construction workers on site of the Noro staff house project

Source: 2022 WaterTok, Issue 6

Table 5 below shows that most of the output 1 indicators show partial to satisfactory progress except two. Upgrade and completion of Tulagi and Munda water supply schemes is subject to budget shortfalls. Even though construction activities have been delayed to some extent, the current target indicators show good progress since the baseline in 2019. Some of the progress against Output 1 sub indicators is also captured in the Solomon Water newsletters illustrated above.

Table 5: Output 1 Performance Report

Output 1: Continuous, safe and climate resilient water supply ensured	Indicator	Baseline (2019)	Current target (2022)	Commentary (descriptive narrative on the progress)	Rating
1.1 Commission new trunk mains to service White river; Kukum/E Kola; Panatina to Burns creek (11 km) by 31 December 2025	11 km of new climate-proofed water trunks installed	Baseline 2019: 0	0 klns built, UXO and Field survey carried out on some sites (0,25% complete).	Works are approximately 4 months behind program with the contractor pledging to accelerate the program to complete works by the end of this year.	
1.2 Construct 75 km of new water mains in Honiara by 30 June 2028	75km New water mains created in GHA, and 15 km of existing water supply mains upgraded in GHA	Baseline 2019: 0	construction yet to start	Design Consultant SMEC has progressed through Basis of Design, Detailed design Scheduled for Completion Q2 2023. Construction Anticipated Q3 2023	
1.3 Upgrade provincial town water supply schemes - Auki	Provincial water supply systems upgraded with an increase in functioning time and water quality compliance with Water Safety Plan (WPS)	Water Quality - Auki (2019) FCR: 95%, Actual: 72,4% Turbidity, Target: 95%, Actual: 95,7% Total Coliform, Target: 95%, Actual: 9=68,,9%; E. coli, Target: >98%, Actual: 86,2%	Water Quality - Auki FCR, Target: 95%, Actual: 94,7% Turbidity, Target: 95%, Actual: 99,6% Total Coliform, Target: 95%, Actual: 93,5% E. coli, Target: >98%, Actual: 97,7%	Physical Work complete, Water Safety Plan in place and monitoring is ongoing	
1.4 Upgrade provincial town water supply schemes - Tulagi	Provincial water supply systems upgraded with an increase in functioning time and water quality compliance with Water Safety Plan (WPS)	Water Quality - Tulagi (2019) FCR: 95%, Actual: 59,0% Turbidity, Target: 95%, Actual: 100% Total Coliform, Target: 95%, Actual: 42,7%; E. coli, Target: >98%, Actual: 64,0%	Water Quality - Tulagi FCR, Target: 98%, Actual: 79,5% Turbidity, Target: 95%, Actual: 78,9% Total Coliform, Target: 95%, Actual: 74,9% E. coli, Target: >98%, Actual: 92,7%	Bidding documents substantially completed. Completion of these works will be subject to budget which currently projects as a shortfall.	
1.5 Upgrade provincial town water supply schemes - Noro	Provincial water supply systems upgraded with an increase in functioning time and water quality compliance with Water Safety Plan (WPS)	Water Quality - Noro (2019) FCR: 95%, Actual: 70,3% Turbidity, Target: 95%, Actual: 86,8% Total Coliform, Target: 95%, Actual: 80,0%; E. coli, Target: >98%, Actual: 95,6%	Water Quality - Noro FCR, Target: 98%, Actual: 76,3% Turbidity, Target: 95%, Actual: 85,2% Total Coliform, Target: 95%, Actual: 91,8% E. coli, Target: >98%, Actual: 100%	Detailed Design under consideration. Completion of these works will be subject to budget which currently projects as a shortfall.	
1.6 Commission and construct Gizo water supply scheme by 31 December 2022	Gizo water supply scheme constructed, SW operating in Gizo with functioning/continuity in water supply over a given period	Baseline 2019: 0	Not available	Progress on design is stalled pending Hydrogeological investigations. Separate funding being sought through DFAT (Australia). Date for commissioning at least 20 Months delayed (Q2 2024)	
1.7 Commission and construct Munda water supply scheme by 31 December 2024	Munda water supply scheme constructed, SW operating in Munda with functioning/continuity in water supply over a given period	Baseline 2019: 0	Not available	Completion of these works will be subject to budget which currently projects as a shortfall. Progress on design is stalled pending Hydrogeological investigations.	
1.8 Expand and upgrade water treatment plant capacity in Kongulai Spring	<ul style="list-style-type: none"> The volume of treated water for GHA increases by 5MLD (million litres per day) expected annual disruptions to Kongulai Spring due to high turbidity reduced to 30 days or less 	32MLD; 59 shutdown days	Current Daily Production 32,2MLD.	Kongulai WTP project awarded, Contractor yet to start construction, project will provide additional 2,5MLD by the end of 2023 White River borefield recommissioned 2021 additional 1,2MLD Additional Boreholes at Panatina under design. Construction Anticipated late 2022 Rove Refurbishment has added additional 1MLD	
1.9 Construct new water supply reservoirs at Titinge (3 ML); Tasahae(3 ML); Panatina (3 ML) by 31 December 2025	2 New storage reservoirs of 12 million litres are built in GHA (Million Litres ML)	2019 Baseline: 0 cubic meter	Demolition activities completed at Panatina Reservoir(1% complete), Services locations underway at Tasahe Reservoir(0,25% complete),no works carried out on the Titinge Reservoir (0% complete).	Works are approximately 5 months behind program with the contractor pledging to accelerate the program to complete works by the end of this year.	
1.10 Contractors working on the UWSSP engage at least 20% women as construction workers	The number and percentage of women engaged as construction workers in all the water and sanitation upgrade and rehabilitation projects in GHA as well as provincial towns. Noting that construction is not a highlight desirable job for women in Solomon Islands, so the indicator will measure women in ancillary roles.	2019 Baseline: 0	Current zero	Construction work yet to commence, Data to be obtained as contractors commence work on site	
1.11 Fully implement leak-detection repairs and metering programs by 31 December 2026	The number of pre-paid water meters installed in GHA and five towns	2019 Baseline 00	500	Leakage team been set up in 2021 and a total of 5000 (500 from Leak detection findings) leaks fixed in 2022. Also around 9400 customers were identified as under consumption below 20kl/month for investigation for possible inaccuracy for our replacements metering programs	

Output 2: Urban sanitation services are effective, efficient and safe in GHA

Construction of sewers on Kukum Highway from the Ministry of Fisheries building to the Ranadi Road intersection (McConnell Dowell) and sewers from Ranadi Road intersection to the Goodwood Outfall, (PEP) has not yet commenced as (i) CESMPs have not been approved; and (ii) the contractors have not submitted evidence of insurances. The approval of CESMPs and submission of evidence of insurances are contractual requirements which must be satisfied before works can commence. However, in the absence of contractor extension of time claims for either contract, the completion dates for the Ranadi Road intersection to the Goodwood Outfall contract is 20 December 2023 (which is approximately one month after the Pacific Games opening ceremony) and the completion date for the Fisheries building to the Ranadi Road intersection contract is April 2024.

Draft bidding documents for the balance of the Honiara sewer reconfiguration works were submitted by Suez to SW on 30 December 2022 and are currently being reviewed by SW. With the current project cost overrun, it is likely that the scope of the sewer reconfiguration may need to be reduced. The change of scope will be confirmed by SW as part of the UWSSSP subproject prioritization review to be completed prior to the project midterm review in May 2023. However, SW has expressed a preference to proceed with the construction of the Ranadi sewer network and outfall (rather than the NRH network and outfall) as the Ranadi network could potentially service a larger number of properties than the NRH network and would also enable the elimination of more than 10 existing sewer outfalls.

The progress noted above is captured in Table 6 below that captures Output 2 indicator progress against the baseline. As shown in the table, most of the sub-indicators for Output 2 shows partial progress except one. While progress has been slow, the indicators are tracking well against the baseline. UWSSSP project is on track to complete sewerage projects for South Pacific Games and Ranadi sewer works is now complete (see SW newsletter clips below). The Rove Outfalls including the installation of a manhole and extension of pipe meters into the sea is nearing completion as well.

SOLOMON WATER AWARDS WATER AND WASTEWATER FEASIBILITY STUDY TO SMEC



CEO Ian Gooden and Chief Operations officer Scravin Tongi with officials from the Solomon Islands Government, Malaita Provincial Government and Bina Landowners at potential water sources for the Bina Harbour Tuna Processing Plant in November last year. Photos supplied.

A feasibility study looking into water supply and wastewater treatment requirements for a new tuna processing plant is currently underway at the Bina Harbor in Malaita Province.

Solomon Water awarded the feasibility study contract to international civil engineering firm, SMEC.

The Bina Harbour Tuna Processing Plant is a major Solomon Islands Government development initiative supported by the New Zealand and Australian governments.

CEO Ian Gooden says the feasibility study is a key Solomon Water project and was made possible, through the Solomon Islands Infrastructure Program. "Water supply and wastewater services for the plant and for Bina harbor communities is a key enabler for the project," he said.



"Solomon Water was requested to support the feasibility and thanks to funding from the program, we are thrilled to have SMEC's expertise onboard for this. We expect a clear definition of water supply and wastewater management systems necessary to ensure effective water and wastewater management for the Bina Harbor Tuna Processing Plant and surrounding communities," the CEO adds.

Overall, the feasibility study will assess the viability of water sources, transmission and treatment for the plant and assess the plant's sanitation and wastewater treatment and disposal requirements.

The study started in July and should be complete in early 2023.

Source: 2022 WaterStori, Issue 2

SOLOMON WATER ON TRACK TO COMPLETE SEWERAGE PROJECTS FOR 2023 PACIFIC GAMES

Design and tendering for Solomon Water's next part of sewerage projects has been completed and a contract has been awarded.

This second phase - the Ranadi Road to Goodwood Outfall and the SINU Dorms sewer projects - is urgent sewerage works to service the Pacific Games facilities. The first phase, covering the KGV and Ranadi Road Intersection, was completed in November and constructed over 700 meters of sewer pipeline and 10 manholes with depth ranges of around two to five meters.

Project Manager Brian Fatai says the first phase project was both challenging and rewarding for his team and for the local contractor. "This has been a project with many challenges. It was also a first for Hatanga Ltd.



Project Manager Brian Fatai and Community Liaison Officer Relinta Manaka on site with contractors.

Our teams alongside the Hatanga project teams worked through all kinds of weather and conditions to ensure the project was delivered on time and with quality. We are excited that the first phase is nearing completion and look forward to advancing to the next phase of this project".

Scheduled to begin in early 2023, the second phase of projects will construct 1.5 km of PVC and HDPE sewer pipelines ranging from 200 to 400mm in diameter. The second phase works will also construct a small pumping station to transport sewage to a sea outfall.

The total cost of the overall sewage-servicing projects for the games and Kukum Highway is estimated at over SBD 160m and the Solomon Islands Government is funding the bulk of the works.



A manhole construction underway in August.

Source: 2022 WaterStori, Issue 2

IN PICTURES: KG/RANADI SEWER WORKS COMPLETED

Trenching and pipe laying to install 98 meters of DN300mm PVC pipe from KGVl School to Ela Motor junction in Ranadi was completed last weekend.

Project engineer Brian Fatai who was at the project site last Saturday said, *"It was important to complete this project first before the major road upgrade project by Kitano Construction reaches here."*



Project Manager Brian Fatai on site during the excavation by the Hatanga construction team across the KG VI road last weekend



Source: 2022 WaterTok, Issue 6

ROVE OUTFALLS PROJECT NEARING COMPLETION

Pulling and laying of pipes for the Rove outfall has been completed. The project is worth over SBD2m, with sewer works including the installation of a manhole and extension of polyethylene pipe some hundred meters into the sea.

Project site supervisor Francis Fena said *"This project started in June with all major works completed. We are now left to complete the manhole and burying of a trench dug for piping"*, said Project Engineer Francis Fena.



Laying of pipes at the Rove Outfall.



Project Engineer Francis Fena at the Rove outfalls inspecting the newly installed manhole

Source: 2022 WaterTok, Issue 6

Table 6: Output 2 Performance Report

Output 2: Urban sanitation services are effective, efficient and safe in GHA	Indicator	Baseline (2019)	Current target (2022)	Commentary (descriptive narrative on the progress)	Rating
2.1 New septage treatment facility (60 m3/day) constructed	New septage treatment capacity at the centralized septage treatment plant (m3/day)	2019 baseline: 0	identify and secure location for septage treatment.	Work continues on Policy / Governance required to progress this work. A faecal Sludge Management expert has been engaged and completed the first section of work. A terms of reference and COntact expected in the new year Q1 2023 Allowance to house this facility made within the Ranadi Outfall Pump Station Preliminary designs	
2.2 Rehabilitate Point Cruz PS; Decommission KGVl, extend sewer network and install 5 new PS by 31 December 2025	Point Cruz rehabilitated, 5 Pump stations constructed, 7km of new pipelines installed	2019 baseline: 0	first 1 km completed; secure contractor for these projects	Major redesign undertaken. Pt Cruz PS to be abandoned. Due to Pacific Games related requirements approximately 3km of network has been split out of the original design packages and advanced with the first 1km completed. Separate funding secured from SIG for some of these works. point cruz pumps partly rehabilitated. Still no 5 pumps constructed. 7km of pipeline not yet installed. KGVl pump still operating.	
2.3 Install 2 New ocean outfalls and associated pump stations	Three ocean outfall rehabilitated and a new outfall constructed	0	0 secure contractor for new outfall	Designs progressing, budgetary shortfall has led to works being repackaged with only one outfall likely to be constructed. Solomon Islands Government requested a Public Environment Report which is expected to be submitted early in the new year (Q1 2023) UXO outstanding risk for resolution prior to construction commencing. 2 ocean outfall rehabilitated. No new one constructed.	
2.4 Fully implement leak-detection repairs and metering programs by 31 December 2026	Existing network inspected for condition, meters installed at ocean discharge sites, pipe replacement program identified	2019 baseline: 0	75% of Wastewater manholes been inspected; procurement of meters for outfall measurement program for leak detection & pipe replacement prepared.	SMEC have inspected 75% of the Wastewater Manholes and are preparing a Condition Assessment report. Detailed designs of the highest priority WW assets to be completed by end of Q2 2023. Construction to commence upon completion of designs pending resloution of outstanding funding issues (EU agreements). Pipe replacement identification took place. Existing network inspected for condition. No meters installed at ocean discharge sites	

Output 3: Enhanced awareness of hygiene and sanitation and improved hygiene behaviour

SW's contract with Plan International and Live and Learn Environmental Education Solomon Islands ("Plan") for the first phase of the UWSSSP hygiene promotion subproject will expire on 28 February 2023. The outputs delivered under the contract have exceeded expectations. Hygiene messaging through the conventional media platforms and social media is estimated to have reached more than 88,000 people living in the greater Honiara area (GHA). A sanitation access assessment for people living in informal settlements in GHA and the framework for a pilot small loans scheme for the provision of improved household sanitation facilities have been delivered. Given the success of first phase of the hygiene promotion subproject, Plan's services to SW will continue for a further 6 months under a new contract financed from ADB's Regional Knowledge and Support Technical Assistance for Strengthening Water, Sanitation, and Hygiene Behavioural Change in the Pacific.

DIY HANDWASHING STATIONS MADE BY GREEN VALLEY COMMUNITY WOMEN



Newly installed Wash basin

An empty 44 gallon drum, fitted out with a simple aluminium basin and basic sink plumbing, painted and tiled in neutral colors and voila – a handwashing station.

Three of these handwashing sinks were on display at the Solomon Water Hygiene Promotion Project launch in Green Valley last weekend.

Nancy Waego, a Green Valley resident described the construction as a great initiative and they are looking forward to developing more handwashing stations for every Green Valley household.

"This space has been lacking in the community, and it's good to encourage our kids for washing hands as it will definitely reduce diseases in the community. As women, we would prefer to see our children at school healthy, than being sick and staying home or at the hospital. Mothers coming out to build wash stations for their children only shows their responsibility in ensuring their children's health and welfare are met", she said.

Source: 2022 WaterTok, Issue 6

Social inclusion and gender that ensures equal access to water services is an integral component under UWSSSP for all WASH activities. It also underlies equal voice, and agency, in water decision-making and policies. Since its inception, WASH activities have always supported social inclusion in water. An equal number of women and men have been participating in hygiene and WASH related workshops and consultations as illustrated in Table 7 below. An emerging lesson from recent efforts under Phase 1 of hygiene activities is that while achieving real change can be slow and often nonlinear, identifying opportunities that strengthen inclusion and community ownership provide encouraging examples of how with sufficient community partnerships it is possible to achieve tangible progress.

Table 7: Number of Workshops and Community Consultations by Gender

No	Activity	Community Names	Number of Males	Number of Females	Number of children	TOTAL ADULT
1	Hygiene Training of Leaders and Enumerators	Kobito 1	2	1		
		Kobito 2	2	1		
		Kobito 3	2	1		
		Mamulele	2	1		
		Green Valley	1	2		
		Independence Valley	2	1		
	Total		11	7		18
2	Leaders and Volunteers Induction Workshop	Kobito 1	4	4		
		Kobito 2	4	4		
		Kobito 3	4	4		
		Mamulele	3	5		
		Green Valley	4	4		
		Independence Valley	4	4		
	Total		23	32		55
3	Hygiene Triggering Campaign	Kobito 1	14	14	90	
		Kobito 2	10	18	73	
		Kobito 3	15	37	70	
		Mamulele	20	12	34	
		Green Valley	8	38	104	
		Independence Valley	16	18	31	
	Total		83	137		220
4	Menstruation Workshop	Kobito 1	5	4		
		Kobito 2	5	3		
		Kobito 3	1	0		
		Mamulele	4	5		
		Green Valley	5	5		
		Independence Valley	4	4		
	Total		24	21		69
5	Message recall survey	Kobito 1	4	17		
		Kobito 2	6	15		
		Kobito 3	0	0		
		Mamulele	10	10		
		Green Valley	19	21		

Output 3 score card shows that at least one indicator has achieved its target and is on track to achieve most of the results under the project (see Table 8). Most of the indicators show partial to satisfactory progress except for sub-output indicators under Output 3.6. Current targets for most indicators are on track to achieve the results under UWSSSP except for Output 3.3 indicators – WASH in schools’ activities have been delayed due to funding shortfall. Progress relating to current targets for these indicators will be confirmed after the mid-term review.

Table 8: Output 3 Performance Report

Output 3: Enhanced and sustained awareness and behaviours of hygiene and water conservation in informal settlements (first 2 years) as well as GHA and five towns (after 2 yrs)	Indicator	Baseline (2019)	Current target (2022)	Commentary (descriptive narrative on the progress)	Rating
3.1. Increase in the number of households in the selected settlements with a close communal / or household level water supply.	Number of households with easy access to clean water	62% (Can we remove any that have been done in the last 12 mths? 33.9% had household connections	Target - 50% of all hhds have a hhd connection	There is an increase in the number of household connections with easy access to clean water in all the settlements with Honiara. The project has added 1377 new household connections in the six settlements. The estimated population of the six settlements when the survey was done, was 1634 households (if we covered 50% of all households). At the beginning of the project there were 553 hhds with a household connection, the project has completed 1337 new connections, making a total of 1890 hhds with a hhd connection. It is likely that the WASH Survey and the SW work in these settlements have recognised different boundaries for the settlements, meaning population figures are difficult to estimate accurately. Current figures would suggest that nearly 100% of households in the six settlements now have a hhd connection.	
3.2 Deliver hygiene promotion program (NGO led and implemented activities)	Number of people involved in community based hygiene promotion program activities in selected informal settlements.	71% said NO they have not had hygiene promotion here	no figures yet	The current hygiene promotion work implemented by Plan international and Live & Learn includes both hygiene and construction trainings for both male and female participants of the 6 settlements. The implemented Hygiene Promotion campaign has used various media outlets including radio spots through the National Radio Broadcast (SIBC), billboards located in the city and at the entrance of the 6 settlements, Social media (facebook), and community activities. The most recent campaign during september had a reach of 139,712 people (different people seeing the content) and impressions of 410,735 (the number of times the content has been seen)	
	Number of women and girls in selected settlements trained/participated in hygiene promotion activities.	65% of women and girls said they have not received any hygiene promotion here	Hygiene Promotion Training for the 6 settlements-Total participants: 18 (Male: 11 & Female: 7)		
3.3. Improved WASH hygiene behaviour and knowledge in selected communities (NGO led and implemented activities)	Increase in handwashing at critical times	85% after going to toilet 84% before eating 54% before cooking 14% after handling babies faeces	no figures	Following the hygiene trainings conducted for the 6 settlements by Live & Learn there is an increase in knowledge of hand washing at critical times with water and soap. During the Hygiene Promotion Project launches in the 6 settlements there has been displays of simple hand washing facilities constructed by both men and women of the 6 settlements. Also effective hand washing has been demonstrated during the launches of the hygiene promotion project by children in these 6 settlements. Infant faeces management is incorporated into the hygiene training and awareness campaigns in the 6 settlements have been conducted to increase the knowledge of parents and caregivers of the importance of faeces management which can pose a health risk if not effectively managed.	
	Improved infant faeces management	24% put into toilet 28% put in plastic bag	no figures		
	Improved menstrual hygiene management	53% of men unwilling to talk about menstrual hygiene 67% say they have not had any hygiene promotion here 90% say they can get sanitary products when they need them • 54% said they could not afford sanitary products	no figures	The Menstrual Hygiene Management component has just begun and targets individual families. The approach that Live & learn have applied is working through consultation with parents of individual families in discussing matters relating to menstrual management as to how parents can educate and be supportive to their daughters in the family. Also there are radio spots aired through the national radio (SIBC) and on social media facebook. From the hygiene Promotion trainings in the 6 settlements there is interest/willingness and knowledge of community people to construct simple hand washing facilities with soap close to their toilet facilities. A video has been made and shared through Facebook that features an ex Ms Solomon Islands. The video message focuses on families including men to support women and girls and to de-stigmatise menstrual matters.	
	Improved quality of handwashing facilities	42.5% have a handwashing facility 37.3% have soap nearby	no figures		

3.4. Increased use of a toilet as an effective barrier to the transmission of disease (NGO led and implemented activities)	Sanitation in Solomon Island Settlements Manual	2020:00:00	Sanitation Technical Manual Developed - The manuals has been developed and is currently being finalised.	<p>Under the Hygiene Promotion project the Sanitation component team and SW have developed a Sanitation in Settlements Manual and conducted a series of sanitation construction trainings for plumbers/masons of the 6 WASH settlements, constructing demonstration toilets that are relevant to the context of each settlement.</p> <p>The relevant toilet options are also included into the manual with all BoQs and costings from relevant hardware stores. The Loan scheme component has been developed and approved for implementation.</p> <p>Plan International is supporting the community based plumbers/masons through the sanitation construction skills trainings to support households wishing to build new or improve their existing toilets. Most households have some kind of toilet, but many need improvements to make them more effective and useable and to allow households to move up the sanitation ladder. Baseline survey showed that there were 36 households where there was a person with a mobility disability.</p>
	Knowledge of effective toilet options	Currently zero	Sanitation Construction Training for the 6 settlements based plumbers/masons- Total Participants: 15	
	Sanitation funding mechanism established and operating	Currently zero	Loan scheme component has been developed and approved. Final forms etc for applications are being prepared.	
	Sanitation organisations / agencies supported	Currently 12.8% (105 households) do not have their own toilet	Plan supporting the 6 community based trained plumbers/masons.	
	Number of households in selected informal settlements that use a toilet as an effective barrier to the transmission of disease	51% of toilets inspected during the baseline survey "appear useable"	Need to assess current sanitation situation of people with disability in the 6 settlements	
	Number of people living with a disability who have access to an effective toilet	- Currently 2 households have someone with a mobility disability and do not have a toilet	Need to assess houses with people with disability to verify the current status of people with Disability sanitation	
3.5 National Hygiene Promotion Campaign (SW led and implemented activities)	Number of people reached by media and public communication hygiene promotion activities that effectively leads to increased awareness of effective hygiene behaviour and improved behaviour in terms of practising safe hygiene	At least one national media campaign: 1) national radio (57,000) 2) national television 3) national paper Solomon Star (5,000 daily) that effectively leads to an increased level of 30-60% campaign awareness; 30% behaviourable change	<p>Hygiene awareness with All saints Mothers Union Group. Total Participants: 25(23 female, 1 male, 1 child)</p> <p>Hygiene promotion campaign in Gizo completed.</p>	<p>The National Hygiene Promotion campaign in partnership with SW has been launched through the National Radio Broadcast (SIBC) and the jingle has been aired through the National Radio (SIBC) and on social media.</p> <p>The key messaging of the jingle is on hand washing with water & soap at critical times which is a barrier to transmission of disease and also targeting the reduction of the spread of Covid 19.</p> <p>Also developed IEC materials (Z - Card) that has been distributed to our WASH stakeholders.</p> <p>Hygiene campaign awareness has started with one church women's group in Honiara and other campaigns with other women & men's groups are scheduled for this year 2023.</p> <p>Hygiene campaign completed in Gizo and planned for Tulaghi, Noro, and Auki.</p>
3.6 Improved WASH facilities and hygiene behaviour in selected schools (UNICEF and NGO led activities)	School water supply	To be established through UNICEF supported School Survey and initial engagement with selected schools	WinS project still delayed due to lack of funds	<p>The WinS project has not been implemented due to the delay in funding.</p> <p>WinS Taskforce continues to monitor the preparation for the project.</p> <p>In preparation for this project school assessments have been conducted with schools in the catchment areas of the 6 WASH settlements within Honiara. The assessed schools have all been mapped on google earth for location identification in with the 6 settlements.</p>
	Hygiene promotion taught in schools	To be established through UNICEF supported School Survey and initial engagement with selected schools		
	WASH daily routines	To be established through UNICEF supported School Survey and initial engagement with selected schools		
	WASH Committees	To be established through UNICEF supported School Survey and initial engagement with selected schools		
	Effective toilets	To be established through UNICEF supported School Survey and initial engagement with selected schools		
	MHM in Schools	To be established through UNICEF supported School Survey and initial engagement with selected schools		
	Female friendly toilets	To be established through UNICEF supported School Survey and initial engagement with selected schools		

Output 4: Institutional Strengthening to make SW financially and technically Sustainable

The implementation of SW's financial and asset management enterprise resource planning platform (ERP) is delayed, and the rollout of the ERP finance modules is now scheduled to commence in March 2023. SW highlighted the need to strengthen its financial management capacity for project accounting following the identification of accounting issues relating to capturing project costs during the 2021 entity audit. SW considers long-duration support is required to build and sustain its capacity financial capacity and requested technical assistance to engage an international accounting specialist to provide 180 working days intermittent inputs (120 working days in Solomon Islands and 60 working days from the Consultant's home office) over a duration of 12 months. The Mission agreed to explore potential opportunities for technical assistance.

Table 9 below shows that most of the indicators under Output 4 are on track to contribute to the expected results under UWSSSP. The indicators show significant progress since the baseline in 2019. Most of the indicators are on track to meet end of project targets as reflected in the current indicator target numbers. With UWSSSP support, substantive progress has been realized in increasing capacity and impact in efforts to address institutional strengthening of SW. UWSSSP has facilitated the sharing of knowledge on how to shift gender diversity in water employment – facilitating the exchange of research, knowledge, and tools under the Pacific Water and Waster Association (PWWA) Young Water Professionals Program. Female program engineer and Capital Works Team Leaders from SW participated in the PWWA Youth program at the 13th PWWA Conference in November 2022 held in Fiji. The share of women in SW leadership positions increased from 22.6% to 25.5% - a little over a year, and SW is on track to meet the 40 percent target set for the end of the UWSSSP project.

Table 9: Output 4 Performance Report

Output 4: Improved financial performance of SW and SW is technically sustainable	Indicator	Baseline (2019)	Current target (2022)	Commentary (descriptive narrative on the progress)	Rating
4.1 Grievances responded to and satisfactorily resolved in relation to SW water services standards	Number of grievances responded to and satisfactorily resolved in relation to SW water services according to standards.	2019 baseline: 0	2022: Total complaints = 7362, Total Resolved = 7312, Variances = open 39, onhold 3 and cancel 8 complaints	For 2022, currently all customer incoming complaints, enquiries and New supply connections registered in MIS. Data can be accessed and extracted in MIS for completed, open and pending and followed up with the Customer connections, Revenue, Billing, Non Revenue water, Sewerage and Debt Recovery Teams. A Customer Service Review on processes, Trainings, SW Charter and has been undertaken this year to improve the customer services of Solomon Water across the organisation and teams which will also be incorporated and reviewed with the current processes in 2023. The status of the Gender for the GRM remains the same. At this stage the customer care and affiliated teams are currently in the migration stage to the newly approved Pronto ERP system. Process Trainings on CRM Pronto have been conducted with visiting service providers and teams engage in practical testing sessions to confidently roll over in early 2023. In month of December to run parallel with Magiq and Pronto and roll over in January 2023.	
4.2 Design and implement capacity building programs for SIWA staff including on-the-job training;	Number of SW staff training on improved operation and maintenance.	2019 baseline: 0	120 hours for the previous period and 477 for the current period.	During the period, the following training were undertaken by Solomon Water employees: (1). Safety Refresher & Dog Behaviour Awareness Training attended by 118 employees (24 females and 94 males) for a total of 177 hours. (2). Payroll Awareness Training attended by 30 employees (10 females and 20 males) for a total of 60 hours. (3). Performance Development Review Training - attended by 141 employees (34 females and 107 males) for a total of 282 hours. (4). Payroll Processing Training attended by 30 employees (11 females and 19 males) for 60 hours. (5). UXO Training which was attended by 14 employees (3 females and 11 males) for 56 hours. (6). Control of Substance Hazardous to Health Training - attended by 1 male employee for a total of 4 hours. The total number of training hours for the period was 639 hours. The breakdown of this is 162 hours for females and 477 hours for males.	
4.3 Design and implement preventative maintenance programs and asset management	Operating cost efficiency of water supply services (US\$/m3 sold in USD)	2019 Baseline: 2.20 (US\$/m3 sold)	2022 target: 2.18 (US\$/m3 sold)	<p>There was some useful data in place that was used to calculate the operating cost efficiency. However, the data is spread - no central database. Some options required to make reporting efficient include: (a) create a centralised database and/or, (b) develop a reporting template to automatically calculate the end result (i.e., operating efficiency) whereby at the end of each month, custodian of the data input to that template. Useful data (and custodian) for calculating operating cost for supply of clean water data:</p> <ul style="list-style-type: none"> i. Bulkwater- network team ii. electricity- electrical and finance team iii. salaries - HR and payroll team iv. other O&M - operations team v. water treatment- water quality team vi. water volume billed- revenue collection team vii. volume produced - operations network team <p>The ERP (Pronto) is progressing, however slow. The go-live for maintenance and asset management is shifted to next year 2023. The UWSSSP Phase 2 - asset management has been started and SMEC team is currently doing the asset management review for Solomon Water - and this assessment workshops are currently underway ends on 4 July 2022. From this review, SMEC will have the AM baseline and draw a Asset Management Implementation road map, develop AM policy, Strategic Asset Management Plan (SAMP) and Asset Management Plan (AMP). The above mention process is geared to improve data and metrics to calculate the required KPI for operation and financial management decisions.</p> <p>Nothing much changes since the last update. The asset management/maintenance module of the Pronto is to be progressed probably Q1, 2023. SMEC is yet to submit the asset management (AM) phase 1 completion report, probably end of December 2022 or early 2023. This completion report outlines the SW's AM status, practical recommendations and pathways of implementing AM system at SW. SW anticipate that once these programs are implemented it can contribute to the anticipated results and the long term outcome.</p>	
4.4 Expand SW's telemetry system	SCADA system installed and operational.	Baseline 2019: 0	Bidding documents submission for no Objection	Due to unavailability of funds the Scope of Works will be reduced and bidding documents reconfigured to accommodate the changes	
4.5 Introduce and implement SIWA personnel recruitment and promotion schemes for women	Share of women in management position at SW (Percentage)	Baseline 2019: 2/7 are women (30%)	22.6% for the previous period and 25.49% for the current period.	The composition of women in management positions during the period at the following tiers are as follows: T2 increased to 20% from 16.7% for the previous period while T3 increased to 25% from the previous period. The increase in T2 was due to the reduction of the number of members of T2. T4 however reduced to 27.27% from 28% for the previous period due to one female leaving. Overall, the percentage of women in management positions in Solomon Water during the period was 25.49% compared to 22.6% for the previous period.	

SOLOMON WATER TO ATTEND 2022 PWWA

Solomon Water will be attending the 13th Pacific Water and Waste Water Association (PWWA) conference in Nadi, Fiji next month and part of the team will be staff who are part of the PWWA Young Water Professionals Program (YWP).

The YWP is a flagship program for PWWA and focuses on building leadership skills, mentoring with experts from the region, sharing ideas on resolving emerging issues, developing **“together”** innovative solutions and most importantly promoting and strengthening the roles of gender equality in the sector.

Project Engineer Lisa Baura is part of the YWP and says *“I look forward to the learning I will gain from this year’s conference”*.

Capital Works Team Leader Trevor Salo is also part of the YWP. He says he is excited and honored to be part of the SW team who will be attending. *“The conference will boost my leadership and management skills as a young Engineer. A bonus for me is I will finally meet YWP from other Pacific islands,”* he said. *“We will also be learning about what other Pacific Islands are facing in terms of water and waste water supply and I hope to bring back the knowledge of management and leadership and share it with my other work colleagues,”* he added.

Both candidates are very thankful to Australia Water Partnership for sponsoring their attendance.

The 13th PWWA Conference will be in Nadi from November 14 to 18. This year’s theme is **“Resilience and Water Security”**.

Source: 2022 WaterTok, Issue 8.

2022 PACIFIC WATER AND WASTEWATER ASSOCIATION CONFERENCE

13TH PWWA CONFERENCE AND 6TH MINISTERIAL FORUM

Following its last annual conference in Vanuatu in 2019 and subsequent cancellations of its 2020 and 2021 conferences, the PWWA hosted its largest ever conference in Nadi Fiji with the support of the Government of Fiji and Water Authority Fiji.

Over 300 delegates attended and heard an array of professional discussions and presentations around the theme of "water security and resilience". 13 ministers attended a 2-day forum and signed a joint communique expressing their concerns for water security in the Pacific and the need for improved management of water and protection of the environment from the effects of climate change. The communique will be presented at the UN 2023 Water Conference in New York.

The Young Water Professionals, Ministerial Forum and exhibitors expo are major elements of this highly successful conference, not to mention the many presentations by utilities, suppliers, donors and others on many topics of interest to the water sector.

A location for the 2023 conference, which is held in a different Pacific country each year, is still to be announced.

IAN GOODEN RE-ELECTED AS CHAIRMAN OF PWWA

The PWWA, which is headquartered in Samoa, is governed by a Board of 10 directors, all of whose terms of service had ended and a full election for new directors was held. Solomon Water CEO, Ian Gooden, who has been on the board for 4 years and chairman for the past year was re-elected as a member and then subsequently as Chairman of the Association again for a 3 year term.

"I am thrilled to have the confidence and trust of the member utilities and Board to be re-elected to the Chair and look forward to commencing implementation of our new 5 year Strategic Plan and to leading the PWWA over the next few years into the next stage of our maturity as the key voice of water utilities in the Pacific" he said.

SOLOMON WATER'S YOUNG WATER PROFESSIONALS



Pacific Young Water Professionals during a week-long conference in Nadi, Fiji. Front Row: Lisa Baura, third from left and Trevor Salo, center. Photo: PWWA Facebook page

Engineers Trevor Salo and Lisa Baura attended the Pacific Young Water Professionals (YWP) Program event at the 2022 PWWA Annual Conference. Trevor and Lisa are both alumni of New Zealand's UNITEC Institute of Technology and both graduated with a Bachelor of Engineering Technology.

Trevor is currently Team Leader for Solomon Water's Capital Works Projects team looking after capital works projects. Lisa is a Project Engineer for the Project Management Unit providing

engineering design and project management support for Solomon Water's infrastructure projects.

Lisa shares her experience with the YWP Program and as a young engineer.

As a project engineer, what do you enjoy most about your job and what is the most challenging part of your job?

I enjoy my work as project engineer within Solomon Water's Project Management Unit as I get to work with different project managers, colleagues from other departments, consultants and contractors. I enjoy the collaboration part of the job. It allows us to share our ideas, learn from each other and create better solutions. A tough aspect of my job is completing a project within the project's timeframe, budget and deliver quality work when there are frequent reasons to change the design and budget cuts. I enjoy the challenge and the hard work but it can also be a stressful experience.

Tell us about the PWWA Young Water Professionals program. How have you benefitted from the Program?

I joined the Young Water Professionals Program in August this year and since then have been involved in several online capacity building and professional development trainings. Along with fellow Solomon Water and Pacific colleagues, I've received training in topics such as presentation, collaboration, problem solving processes and stakeholder engagement. Personally, I found the trainings beneficial. These are key soft skills that I can apply across my career.

At the YWP Program in Nadi, what were the topics and sessions that stood out and made an impression on you?

Team building and networking was a key objective for the Young Water Professionals event at the Conference and throughout the event I had opportunities to meet fellow young professionals in the water industry where we shared knowledge, challenges, success stories and also learnt about their experiences and their organizational structure. The event also organised mentoring sessions for us where senior and experienced professionals in the water industry shared stories of their professional and personal journey with us. It was an enlightening session. There was also a Q&A session with CEOs and we were able to ask CEOs from water utilities questions on certain topics of interest. I also enjoyed the Expo event, seeing and learning about products and advanced technology that can be used in NRW management and operations, water quality, water and wastewater operations. The Expo was also a networking opportunity with contractors and consultants.

What is your advice for upcoming engineers thinking of joining the water sector (why should they have a career in the water sector)?

I've learnt that theory alone is not enough to thrive in any organisation. My advice for upcoming engineers is learn as much as you can from all of your colleagues - not just from fellow colleagues in the engineering and operations field but colleagues in HR, finance, revenue collection, debt recovery, communications - everyone. It helps you to see the whole picture and it will help you to understand and to value everyone's input in making the company function to achieve its vision. The water sector is one of the most important sectors and is constantly improving. Being a part of this sector and working to achieve our vision to provide safe water for a healthy nation is a worthwhile endeavor in your career development. Solomon Water is the only water utility in the Solomon Islands and this is the right place to start.

Source: 2022 WaterStori, Issue 2

Output 5: Management of Honiara’s drinking water source area strengthened to build resilience to climate change.

Activities under Output 5 are progressing well. The University of Queensland will visit Honiara in late-February to install water quality monitoring equipment at Kombito and Mataniko, investigate the local turbidity source of water discharging into the Tarona cave network, conduct further dye tracing surveys in the Kovi sinkhole network, and support SW hydrologic monitoring activities and associated data management. SW signed a contract with the Nakau Programme Pty Ltd on 14 November 2022 to design and start up implementation of Payment for Ecosystem Services (PES) projects to promote watershed protection and restoration through alternate livelihood activities to logging for communities within SW water supply catchments in Honiara. The contract is still in the start-up phase.

Table 10 below shows that indicators against Output 5 are tracking well with mostly partial to satisfactory progress. Through the activities under Output 5, the project supported analytical work in sustaining ground water resource management and addressing groundwater contamination. UWSSSP support to output 5.2 activities has fostered dialogue between landowners through stakeholder meetings on specific issues such as land use issues in catchment areas, damage and contamination to water intake points. However, effective management of water resources through a proposed Working Group on Watershed management is yet to be realised. Ensuring sustainability of water resources and water-related service will require a collaborative mechanism that brings together landowners, SW and government departments working across sectors affected by and linked to water security in Solomon Islands - including water, sanitation, drainage, water resources, agriculture, energy, industry, and urban development—as well as the ministries of economy and finance. To strengthen the integrated approach, a steering committee bringing together all the sectoral ministries is a first step toward the creation of a national platform that is focused on addressing future water security challenges in Solomon Islands.

Table 10: Output 5 Performance Report

Output 5 Management of Honiara's drinking water source area strengthened to build resilience to climate change		Indicator	Baseline (2019)	Current target (2022)	Commentary (descriptive narrative on the progress)	Rating
Sub output 5.1 Watershed maps and hydrological models developed	5.1.1 Formulate drinking water source mapping strategy and collect remote sensing data	Sub Output Indicator 5.1 : By 09/2023 all government and non government stakeholders agree on the findings and recommendations of the mapping and hydrological monitoring work as a basis for the interagency cooperation on catchment management Activity Indicators 5.1.1 By 06/2023 preliminary assessment of remote sensing and other mapping data covering the target watershed areas completed. The assessment includes corrected watershed boundaries	No agreements based on catchment mapping outdated and inappropriate criteria for (Karst specific) zoning water protection areas	Base maps for all catchment areas	Remote sensing and ground verification covering the upper target watershed areas for the Kongulai intake point completed. Final delineation of watershed and intake area boundaries of underground connected supplies in progress. Additional mapping carried out in Kongulai subcatchment to identify ongoing land use changes and in Mataniko subcatchment to assess potential for higher level water intake points to provide gravity fed supply to settlements above 100 m elevation	
	5.1.2 Collect hydrological data and conduct site visits to engage local communities	Activity Indicators 5.1.2 • By 09/2022 hydrological monitoring equipment installed in select locations in targeted watersheds. • By 03/2022 by support of regular data validation site visits communities are successfully engaged in the protections and management of the hydrological monitoring equipment. • By 12/2023 preliminary analysis of hydrological monitoring data provide basis for detailed catchment planning (causes for turbidity and flood risk)	Monitoring stations only at water intake points (3)	Establish monitoring stations at identified sites	Data from all installed stations are collected regularly and data are analyzed with support by University of Queensland . New sites for hydrological monitoring were identified following new findings on karst situation and project requirements (e.g Proposed upper Mataniko intake point and supply area of Kovi sinkhole)	
	5.1.3 Develop watershed model, and create data, mapping and modelling platform	Activity Indicators 5.1.3 • By 12/2022 data, mapping and modelling platform created with technical staff trained • By 06/2023 model of all target watersheds (incl Lungga and Komarindi) developed for restoration and protection	No platform in operation Data available only from some sub-catchments	Collect baseline information	Base maps prepared and regularly updated to create an overall platform . Information shared and initial meetings shared with other stakeholders on issues of locating logging concessions and water protection zoning. Commitment for regular exchanging spatial information by other departments on watershed issues so far rather limited	
Sub output 5.2 Watershed governance improved	5.2.1 Create catchment management group and facilitate development of two catchment management plans	Sub Output Indicator 5.2 : From 06/2024 onwards all government and non government stakeholders are active members of a catchment management plans and adjust their policies and workprograms accordingly. Activity Indicators 5.2.1 • By 06/2023 at least 30 ?? engagement meetings with govt and catchment community stakeholders held to raise awareness and build support for improved catchment planning and management through intersectoral collaboration; • By 06/2023 a locally-led catchment planning group established to coordinate inter-sectoral activities that affect catchment, catchment communities and water security for GHA; • By 03/2023 agreement achieved between all respective stakeholders on a strategy for effective restrictions on logging areas and non destructive harvesting methods • By 09/2023 two climate change adapted catchment plans developed (1. Kogulai and Kovi and 2. Kohove catchment) • By 06/2023 catchment management trust fund mechanism created with multiple sources of funding: (a) beneficiary pays (water surcharges); (b) beneficiary pays (private sector support)	No regular meetings with communities on watershed issues No catchment planning group in place No agreement on logging operations in place No catchment management plans in place Only Water fee based funding in place	Establish stepwise cooperation and information exchange with other stakeholders and projects	So far meetings with other stakeholders do not take place on regular basis in proposed working group on watershed management ..Particularly planning of activities in urban areas on watershed issues are not sufficiently considered . Cooperation on approval of logging concessions has improved significantly. Start up meetings were held with all identified land ownergroups and meetings with smaller groups on specific issues (e.g land use issues in catchment sections, damage to water intake points etc.)	

Sub output 5.3 Community livelihood and forest carbon PES activities supported	5.3.1 Develop forest and social baseline for communities participating in watershed subprojects	<p>Sub Output Indicator 5.3 By 12/2025 Income generation activities related to: catchment conservation and restoration and payments from carbon credits and water fees <u>fully compensate</u> land owners and users for further restriction on resources use in catchment areas</p> <p>Activity Indicators 5.3.1</p> <ul style="list-style-type: none"> By 06/2023 forest inventory and forest change analysis baselines completed that includes , forest carbon PES conservation and restoration works By 03/2023 a social impact baseline household survey designed and implemented that includes components relating land management, decision making, livelihoods, gender and well being. 	0	Contract with NGOs for PES and income generation and start up work Start up community and stakeholder workshops	Contract with NGO for PES project development and income generation finalized, Start up workshops held on design/workplan of Forest carbon PES and income generation subcomponents Start up workshops with land user groups after Corona restrictions were lifted. Site visits and start up consultations with land owner groups on land use (including logging operations) in Kogulai and Mataniko subcatchments	
	5.3.2 Provide landowner employment through forest and riparian zone restoration works by 31st July 2022	<p>Activity indicators 5.3.2</p> <ul style="list-style-type: none"> By 03/2023 a locally-based NGO engaged to facilitate employment of <u>at least 50</u> landowners and/or other watershed community members in the restoration of <u>60 hectares</u> cleared areas and soil erosion control work for <u>crucial catchment sections</u>. 	0	Contract with NGOs for income generation and start up planning work	Start up work commenced for the identification and mapping of crucial catchment sections(Karst features) to be protected Plant production of species for restoration and protection work and technical start up training initiated with 2 private nurseries Contract with NGO (Live and learn) for income generation linked to protection work finalized.	
	5.3.3 Develop two forest carbon payment for ecosystem services (PES) subprojects	<p>Activity indicators 5.3.3</p> <ul style="list-style-type: none"> By 06/2023 at least two Project Idea Note (PIN) developed for forest carbon PES sub-projects. By 12/2023 at least two forest carbon PES sub-projects designed and developed, including a Project Description Document (PDD). By 06/2024 at least two forest carbon PES sub-projects executed to market stage 	0	Contract with NGOs for PES and start up planning work	Contract with NGO (Nakau) for forest carbon and other PES (e.g water fee based) project development finalized, Start up workshops held on design/workplan of PES and income generation subcomponents	
	5.3.4 Support employment and alternative livelihood activities	<p>Activity Indicators 5.3.4</p> <ul style="list-style-type: none"> By 06/2023 PES investment co-designed with landowners to link with the support of suitable livelihoods and employment. By 03/2024 PES funding supports education and training opportunities for watershed landowner communities. By 03/2024 access provided to training, support and seed funding that facilitate sustainable enterprise development of microenterprises targeting watershed landowner communities By 09/2023 non destructive harvesting methods demonstrated and introduced in cooperation with logging operators 	0	Contract with NGOs for PES and income generation and start up work	Initial mapping and start up financial assessment conducted of logging, processing and marketing of timber by land user groups in (1) cooperation with logging companies and by (2) own operators in the Kogulai subcatchments	

5. KEY PROJECT RISKS AND MITIGATION MEASURES

Based on the status of actions agreed by responsible parties during February 2023 ADB-WB-EU Virtual review mission, each of the implementation risks and issues has been qualitatively rated according to the likelihood and consequence of occurrence (see Table 11). Progress towards addressing actions to facilitate project progress agreed during February 2023 mission is qualitatively rated in Table 12.

Table 11: Likelihood and Consequence of Occurrence Score Card

Likelihood	Consequence				
	Insignificant (1)	Minor (2)	Moderate (3)	Major (4)	Catastrophic (5)
Very likely (5)	M	M	H	E	E
Likely (4)	M	M	H	H	E
Possible (3)	L	M	H	H	H
Unlikely (2)	L	L	M	M	H
Rare (1)	L	L	M	M	H

Insignificant	Minimal financial or delay implications; no loss of resources or assets possible; no effect on outputs or outcomes of the project.
Minor	Low financial or delay implications; minor injury or loss of resources or assets possible; negligible effect on outputs or outcomes of the project.
Moderate	Medium financial or delay implications; moderate loss of resources or assets possible; some adverse effect on outputs or outcomes of the project.
Major	High financial or delay implications; major loss of resources or assets possible; significant adverse effect on outputs or outcomes of the project.
Catastrophic	Huge financial or delay implications including cancellation of Project; major loss of asset or resources; major adverse effect on outputs or outcomes of the project.

Each risk is coloured according to the scheme below with those coloured red requiring the most urgent attention. Risk severity is described as follows:

L	Low risk. Manage by routine procedures
M	Moderate risk. Monitoring required
H	High risk. Senior management attention required
E	Extreme risk. Immediate action required

The risk mitigation matrix is a summary of key project risks and issues identified, agreed mitigation measures and progress towards addressing actions to facilitate project progress

agreed during February mission. Some of the major risks to the project include cost escalation, EU grant effectiveness, delayed construction work, and project financing gap. If these risks are not closely monitored, it will have significant adverse effects on the achievement of some of the outputs and ultimately will lead to delay in the achievability of the UWSSSP outcomes.

Table 12: Project Risk and Mitigation Matrix

Issue/risk (what will prevent SW from achieving the project outcomes)	Risk Rating			Proposed action/ mitigation/ Status update	Responsible party	Target rating when proposed action is in place		
	Consequence	Likelihood	Risk rating			Consequence	Likelihood	Risk rating
1. Cost escalation – goods and services	Major	Very likely	Major	<ul style="list-style-type: none"> Closely monitor project costs Update project cost estimates based on current and recent tendered unit rates 	SW, PMU, ADB	Major	Possible	High
2. EU grant effectiveness delay	Major	Possible	Major	<ul style="list-style-type: none"> ADB and EU to finalise and execute ADB-EU project Contribution Agreement by February 2023. Upon signing of the ADB-EU project Contribution Agreement, declare EU grant effective 	ADB, EU	Major	Very likely	Moderate
3. Increasing NRW	Moderate	Very likely	High	<ul style="list-style-type: none"> Expediate preparation of Honiara watermain replacement bidding document. Review UWSSSP subproject prioritisation and consider increasing investments to reduce NRW. 	SMEC, PMU and SW	Major	Possible	Moderate
4. Delayed commencement of civil works contracts	Major	Likely	Major	<ul style="list-style-type: none"> Ensure contractor CESMPs meet project partner requirements. Submit evidence of insurances within timeframes specified in the contract 	SW and Contractors	Major	Unlikely	Moderate
5. Project financing gap	Major	Very Likely	Major	<ul style="list-style-type: none"> Continue to work with SIG and donors to secure extra funding, particularly grant funds. Update UWSSSP subproject prioritisation table based on the latest project cost estimate and SW operational priorities. 	SW	Major	Very likely	High
6. Submission of FY2021 audited entity statement	Moderate	Possible	Minor	<ul style="list-style-type: none"> Submit FY2021 audited entity statement as soon as possible and within 1 month of approval of the 2021 SW Annual Report by the Auditor General 	SW	Moderate	Very likely	Low